Management Briefing On S-11-EMD-PRC-001
100K Area Fire and Potable Water System Project Surveillance
December15, 2011

1. ASSESSMENT SCOPE

Examined compliance with environmental, fire safety, workplace safety and nuclear safety regulatory requirements of the 100K Infrastructure Utilities Upgrade Project

2. FIFTEEN FINDINGS MADE

Failure to Comply With Environmental and Workplace Safety Laws, DOE Orders, Fire Protection and Nuclear Safety Requirements

Contractor accepted and constructed a defective fire suppression system design

- Project's SME warned Contractor management that design was defective
- Over 50 Design Change Notices required to address remediating design

3. OVERARCHING CONCERN

CHPRC engaged in a pattern of conduct that failed to recognize, or otherwise failed to implement contractual requirements, failed to follow established procedures, and failed to meet statutory obligations. CHPRC made unilateral decisions to "proceed at risk" in contravention of contractual requirements and State environmental statutory obligations

4. CONTENT OF CHPRC's FACTUAL ACCURACY ANALYSIS

Document is laden with deceptive, misleading, and in some cases outright false statements or information (e.g., work stopped on potable portion of water system; project entitled to CERCLA exemptions without further documentation; engaged in water permitting process from the start; failure to obtain approvals was merely failure to get signatures; application for NEPA CX was timely; only defect in PEP was lack of signature

5. CHPRC's FACTUAL ACCURACY ANALYSIS DEMONSTRATES THAT THERE HAS BEEN NO CHANGE IN ATTITUDE OR BEHAVIOR

6. RECOMMENDATIONS

(b)(5)

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U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE
SURVEILLANCE REPORT NUMBER S-11-EMD-PRC-001[1], SUPPLEMENTAL ANALYSIS

CONTRACTOR'S FACTUAL ACCURACY REVIEW AND FINAL DETERMINATION BY THE RICHLAND OPERATIONS OFFICE

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
Concern: S-11-EMD-PRC-001-C01. The discussion of the concern states in part: "....The CHPRC 100K Infrastructure Utilities Upgrade Project (herein after "100K IUUP or "Project") failed to meet contractual requirements and other obligations during design and construction of the 100K Water Treatment Facility and the Fire and Potable Water Distribution System. CHPRC's corrective action system failed to recognize or otherwise	CHPRC agrees that it did not plan and execute the 100K Water Treatment Facility and the Fire and Potable Water Distribution System project in full compliance with contractual, procedural, and environmental/ regulatory requirements. CHPRC disagrees that there is or was a pattern of conduct or intentional or knowing disregard for compliance with contractual, procedural and environmental requirements particularly when this project is placed in the proper context of the legal requirements of CERCLA. CHPRC disagrees that the project design failed to meet contractual or other obligations as reflected in the fact that the project has been completed and accepted by DOE. CHPRC disagrees that it made unilateral decisions to proceed at risk CHPRC disagrees that its corrective action system failed to recognize and address the key	CH2M HILL Plateau Remediation Company, (CHPRC) appreciates the opportunity to review and provide comment to the draft Surveillance Report No. S-11-SED-PRC-006 ("Report"). We have examined the facts and created what we believe is an accurate recreation of the timeline of events that took place surrounding the events discussed in the surveillance report. As a general proposition, CHPRC agrees that it's planning and execution of the project should have been better. This is not what CHPRC strives for in its execution of the contract. Having said that, the project was executed safely, the work was accepted by DOE, and directly supported the demolition and removal of the two Columbia River water intake structures at the 100-K complex. That new water system operates successfully and has all appropriate endorsements from the Washington Department of Health, without modification from the condition in which it was constructed.	CHPRC's request to modify Concern C01 is granted to the extent that the language was rewritten to focus more narrowly on the specific nature of the departures from requirements identified in the Report, and to avoid needlessly harsh or inflammatory statements. Some portions of the comments on ISMS requirements were determined to be non-substantive and were removed. CHPRC's requests are otherwise rejected. DOE acknowledge in footnote 2 of Surveillance Report S-11-EMD-PRC-001 (Surveillance Report) that this project might have been entitled to the regulatory permitting exemptions of CERCLA § 121(e)(1), but that apparently the steps necessary to secure such entitlement were not all taken. CHPRC's asserts that: "... there is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes ...." However, the very OSWER Directive #9355.3-22 cited by CHPRC in it comments contradicts that assertion. More

[1] Surveillance Report Number S-11-EMD-PRC-001was originally assigned report number S-11-SED-PRC-006. The report number was changed to S-11-EMD-PRC-001 at the time the Report was finalized and responsibility for tracking corrective actions was assigned to the Environmental Management Division of the Richland Operations Office.

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address this pattern of conduct and extent of condition. CHPRC made unilateral decisions to "proceed at risk" in contravention of contractual requirements and State environmental statutory obligations…."	planning and execution deficiencies associated with the project. **Concern: S-11-SED-PRC-006-C01 Rewrite** CHPRC did not plan and execute the 100K Water Treatment Facility and the Fire and Potable Water Distribution System project in full compliance with all contractual requirements, procedures, and environmental regulations. **Discussion:** The CHPRC planned and performed the CHPRC 100K Infrastructure Utilities Upgrade Project in a "fast track" mode to take full advantage of Recovery Act funds made available for the project. . Estimated total project costs were $23, 380,700 for FY2009 and FY2010 (see finding F013). From the beginning of the project, CHPRC proceeded "at risk" with the full knowledge and communication with WDOH and DOE representatives. WDOH in meetings held to discuss the progress of the project, confirmed that while it could not formally approve proceeding with construction prior to completion of the permitting process, it acknowledged that it would exercise its regulatory discretion and not take enforcement action. This acknowledgment was consistent with how WDOH has dealt with other commercial and Hanford projects. It was fully understood by Project Management that "at risk" meant that some work may have to be re-done at CHPRC's expense if the WDOH or DOE found the work to be unacceptable. CHPRC viewed this to be reasonable particularly in light of the dual purpose nature of the project, which was to provide both fire protection as well as potable water. The outcome was that permits	CHPRC was able to proceed in an expedited manner with obtaining necessary concurrences from the multiple regulatory agencies with oversight authority over construction activities affecting the Columbia River and its protected species, including the US Army Corps of Engineers, the US Fish & Wildlife Service, the National Marine Fisheries Service, and the Washington Department of Natural Resources. We prevented or mitigated negative environmental impacts by laying foundational stone at the base of the structures during the short period identified by USFWS and NMFS as having minimal impact on endangered species passing up or down the river, and used silt curtains to prevent particulate pollution of the river and spawning grounds. We coordinated with USFWS to mitigate the presence of migratory birds at the intake structures, including turning over a nest of owls to an owl rehabilitation center permitted by USFWS. While, in many instances we agree with the facts stated in the report, there are two kinds of omissions which we find in the draft report. First, many relevant and important facts are missing and leave the incorrect and unwarranted impression that CHPRC took these actions without the awareness of either the Department of Energy project managers and of the principle regulatory agency that provided oversight for this project, the Washington Department of Health. Second, the Concern set forth in the report (S-11-SED-PRC-006-CO1) ignores the proper assessment of these facts against CERCLA requirements. While the report provides a passing reference to CERCLA in a	specifically, the OSWER Directive states: "The decision to provide an alternative water supply need to be documented in the appropriate decision document, such as a Record of Decision (ROD) or Explanation of Significant Differences (ESD) for remedial projects or an Action Memorandum for removal projects." Other facts confirm that CHPRC was not seeking the exemptions offered by CERCLA § 121. CHPRC's EASF checklist states this Project is not a CERCLA project and requires NEPA documentation. The Project's conduct of ultimately applying for multiple approvals from WDOH does not suggest it was proceeding pursuant to CERCLA. The Project produced no evidence that it evaluated any ARARs that would be applicable and documented findings in a CERCLA decision document. DOE acknowledges that CHPRC is entitled to its opinion regarding the methods and practices employed in conducting the Surveillance, but respectfully disagrees with CHPRC's conclusions. With regard to CHPRC's comments on pattern of conduct, failure recognize extent of condition, and failure to comply with contractual obligations, DOE believes the multiple and varied failures to meet regulator or contractual conditions documented in the Surveillance Report are accurate and speak for themselves. DOE points out however that the terms "intentional," "reckless" and "knowing disregard" as used by CHPRC in its Factual Accuracy Analysis are terms invented by

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	were issued and no regulatory action was taken by WDOH. CHPRC engaged in the permitting process with WDOH from the start of the project and showed good faith effort to keep all parties informed.[2] However, the engineering program, project management, construction, project control, and work management, did not fully integrate contractual requirements into work activities. Some contractual requirements identified in CHRPC Procedures and Policies were not followed. During the100K Water Treatment Facility and the Fire and Potable Water Distribution System Project, CHPRC self-identified non-compliance with environmental requirements, company and project procedures, implementation of the PEP process, and fire protection requirements. Also, CHPRC initiated a work stoppage as requested by the CHPRC EP&SP VP on 5/18/10 when it was brought to his attention that the project was proceeding with construction activities prior to obtaining required approvals. A second work stoppage was issued by 100K Senior Management on 9/28/10 on the 100K Fire Suppression System pending comprehensive design document review and approval. A similar Concern was stated in the previous DOE-RL *Assessment of the CH2M Hill Plateau Remediation Company Fire Protection Program* (S-10-SED-PRC-23) of May 27, 2010, which stated "CHPRC Procedures and Policies, D4	footnote, a complete evaluation of the facts leads to the conclusion that no environmental laws or regulations were violated. Rather, the more appropriate conclusion is that CHPRC only failed to recognize and plan the project in light of CERCLA requirements **Omitted Material Facts** First, we believe the complete factual record demonstrates that cognizant DOE officials and WDOH officials were fully informed and well aware of activities being taken, and concurred with each of the critical steps that were taken to complete this project in a manner that met the substantive standards of relevant requirements. We believe these additional material facts make clear the inaccuracy of the allegation in the Report that CHPRC intentionally or recklessly "engaged in a pattern of conduct that failed to recognize or otherwise failed to implement contractual requirements, failed to follow established procedures, and failed to meet statutory obligations". More importantly, this "surveillance report" departs from traditional standards for conducting audits and assessments that normally focus on evaluating compliance with standards and requirements, while they avoid personalization, innuendo and implication. We believe this Report fails that general standard. Consistently absent from the report is any reference to the many meetings that CHPRC held with both DOE and WDOH. This included	CHPRC as they do not appear in the Draft or Final Surveillance Report.

[2] The DOE Project disagrees that it was kept fully informed about environmental violations.

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	activities, and subcontractor activities, have not fully integrated FPP requirements. The CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." S-10-SED-PRC-23 was transmitted to the Contractor by DOE-RL letter 10-SED-0128 of August 19, 2010. In response to this assessment, CHPRC issued 10 CRRS items which addressed each issue identified in the report. Four of the CRRS reports are not closed. Four were closed while this new surveillance, S-11-SED-PRC-006 was being performed.	a meeting at which both DOE and WDOH were informed the urgency to proceed with construction of the replacement water system so that demolition of the old system could proceed under the time limit of ARRA funding. WDOH stated that, although it would be sending correspondence that specifically affirmed the agency's authority to impose administrative penalties for commencement of construction before WDOH approval of the design, it orally affirmed that it intended to exercise its regulatory discretion and would only require necessary corrections to already constructed water system components, rather than impose penalties just for commencing construction early. It affirmed that its primary focus was on ensuring that no water system began to operate and deliver water before it was approved by WDOH. CHPRC's project in fact received eventual approval by WDOH, no corrective reconstruction was necessary, and the system was not used to deliver water until final WDOH approval was received. Consistent with its statements to CHPRC, WDOH has not ordered any corrective actions, nor has it taken any enforcement action against DOE or CHPRC. The report similarly fails to put decisions that were made with the knowledge of the DOE in the proper context of the dual nature of the project being for both fire protection as well as potable water. Proceeding with construction of the fire protection system before permits were obtained from the WDOH did not violate any environmental laws or regulations. Another example is in an opening paragraph in Finding F01, where reference is made to a Value	

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		Engineering Study that was held by the project. This paragraph further notes that the 100K Area Environmental Compliance Officer (ECO) was not invited and did not attend. Yet there is no reference to any procedural, statutory or contractual requirement that calls for the attendance of the ECO at a Project Chartering study, and consequently this mere fact is as irrelevant as reciting that the Safety and Radcon managers were not present at the meeting. The Report is written to give the impression that this fact is somehow a noncompliance with a standard, when no such standard exists. It appears this innocent fact is being recited so as to imply that absence of the ECO was evidence of an intent to avoid compliance with environmental requirements. This surveillance report is full of similar deficiencies, which depart from an objective recounting of the facts, which is the DOE standard for such assessments. **Legal Significance of the Facts** Second, a more complete legal understanding of the context of the project materially alters the significance of the facts and further reflects the incorrect conclusion of Concern CO1, that CHPRC "failed to meet statutory requirements" Specifically, Page 9, Footnote 1 of the Report states that "The 100K IUUP provided upgrades to infrastructure that was [were] necessary to support a variety of ongoing response actions performed in the 100K Area pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC § 9601, et seq. The Project may have been entitled to exemption from Federal, State or local laws requiring obtaining permits or approvals if	

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		the Project had elected to proceed under CERCLA. *See* 42 USC § 121(e) [CERCLA § 121(e)(1), 42 USC § 9621(e)(1)]." This is largely correct, except that there is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes in order to trigger the regulatory preemption authority of CERCLA Section 121(e)(1). The CERCLA remedial and removal action decision documents required the demolition of the 100-K water supply intake structures, which supplied river water to the 100-K West Basin, and supplied both fire suppression, dust suppression, and potable water for the CERCLA remediation of the 100-K complex. The only way that the required demolition of the intake structures could be accomplished was to first provide an alternate system supplying water for those purposes. Therefore, the new water supply system was an essential part of the 100-K CERCLA response action, and met the prerequisites of CERCLA § 121(e)(1), which simply states "No Federal, state, or local permit shall be required for the portion of any removal or remedial action conducted entirely on site, where such remedial action is selected and carried out in compliance with this section." This preempted the legal requirement for both a permit from WDOH and for a NEPA decision document. (DOE's policy to "incorporate NEPA values" into CERCLA documents focuses on the pre-decision analysis of an RI/FS or EE/CA, and does not require documentation in post-ROD or post-Action Memorandum workplans.) The 100-K IUUP	

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		project was fully within the authority of CERCLA § 121(e)(1). The construction of new water systems to replace those water systems which are made unavailable in the course of CERCLA remedial investigation and response action is extremely well established. "Provision of alternative water supplies" is defined in the CERCLA statute and the NCP regulations as a standard part of remedial and removal actions. The water does not have to be used just in cleanup, and includes water substituting for supplies made unavailable by CERCLA investigation and cleanup, water which is used for all the usual purposes of households, business, schools, and other government facilities. On September 24, 2010, in OSWER Directive # 9355.3-22, the EPA Director of the Office of Superfund Remediation and Technology Innovation and the EPA Director of the Federal Facilities Restoration and Reuse Office updated the EPA *Guidance Document for Providing Alternate Water Supplies,* EPA/540/G-87/006, OSWER Directive 9355.3-03. They note that "Alternative water supplies are included in response actions for both Federal facilities and non-federal sites", and that a 2007 EPA report had found that alternative water supplies providing permanent new sources of "clean, drinkable water", including "connecting to a municipal water system" had been provided at 298 response actions across the US since the inception of CERCLA in 1980. These include dozens of Federal facilities.	

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		Corrective Actions These criticisms of aspects of the Report should not be construed to mean, however, that CHPRC is fully satisfied with its execution and performance of this project. We have examined in detail the facts and have implemented corrective actions to avoid the potential for non-compliance with applicable requirements and improve efficiency in resolving regulatory and safety issues. The report incorrectly recites that this was a Value Engineering Study. Rather this was a structured Project Charter Workshop that was set up to preliminary define scope and deliverables for the project.	
Finding: S-11-EMD-PRC-001-F01. CHPRC failed to apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC **agrees** final approvals were not obtained prior to the start of construction. **DISAGREEMENT STATEMENT** CHPRC disagrees that there was a failure to apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System. The permitting process with the WDOH was initiated from the start of	The Surveillance Report states that water system construction began on April 13, 2010 (p.13), and the project report was submitted to the Washington Department of Health on June 1, 2010 (p. 15). However, the CRD M 231.1-1A, Chg 2 (Supp Rev 1) has no requirements directly pertaining to Safe Drinking Water Act (WDOH) approval requirements for public water systems.[4] CHPRC had engaged in the permitting process with the WDOH from the start of the project. The statement insinuates that the contractor did not intentionally undergo the process of acquiring the necessary permits.	CHPRC's request to modify Finding F01 is granted in part. The language of F01 is modified to read " . . . did not apply . . . for approvals . . . ." Were possible, language of Finding F01 was modified to be less harsh or inflammatory (e.g., "did not" was substituted for "failed to" in a number of locations). Similar global language modifications were made to the other Findings and Observations contained in the final Report. Irrelevant statement about ECO's involvement in planning meetings was removed. The paragraph describing conversations on May 18, 2010 was abbreviated to remove reference to cell phone use. CHPRC's other requests for modifications are rejected.

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	the project. Communications with DOH were inclusive but informal.[3] • The Project proceeded at risk, in communication with WDOH representative and DOE Approvals were subsequently obtained, water plant is appropriately permitted. • Meetings (both in person and via telecom) with the WDOH were held. • Emails regarding this issue were transmitted to the WDOH with DOE on distribution. • Letters between CHPRC and WDOH	This is consistent with what CHPRC self-identified.[5] Communications with DOH were cordial, inclusive but informal.[6] • Project proceeded at risk, in communication with a WDOH representative. • Approvals subsequently obtained, water plant is appropriately permitted. • Corrective action included personnel briefings held on proceeding "at risk" and obtaining environmental approvals have been held.[7]	While CHPRC has as part of its corrective action process formally repudiated the practice of "proceeding at risk," that is, initiating construction activities without first obtaining all permits required by State and federal law, it now raises this very practice as a defense in the instant matter. CHPRC apparently ignores the fact that neither the WDOH, nor the federal project staff has authority to grant immunity from complying with applicable law. Furthermore, even if compliance with applicable law could be excused, CHPRC was expressly bound by its obligations in its contract with the

[3] The statement made here and those below are misleading. While WDOH knew of and was consulted on various aspects of the project on several occasions, WDOH also warned in writing on at least two occasions that permits were needed BEFORE constructions was commenced, and that failure to obtain required permits could result in civil and criminal penalties. *See* Report Exhibit 32, para. 8.

[4] The content of CRD M 231.1-1A, Chg 2 (Supp Rev 1) is entirely irrelevant to CHPRC's compliance obligations. The lack of specific citation to the Safe Drinking Water Act in this CRD does not relieve CHPRC from complying with its contract obligations, specifically table J.2, which includes WAC 246-290, and Section H.19, which requires compliance with all applicable environmental requirements.

[5] This statement is only partially correct. It is factually accurate that CHPRC self-discovered and reported to DOE through an occurrence report (some two weeks thereafter) that it had failed to file a Project Report required by State regulations with WDOH prior to commencing construction of the potable water treatment facility. CHPRC **did not** self-discover a second violation of State regulations by failing to obtain a required construction approval from WDOH prior to commencing construction. CHPRC did self-discover and report that it commenced construction without obtaining a NEPA CX determination, but did not report that it hadn't even applied for the determination prior to commencing construction. CHPRC failed to self-discover that it did not verify existence of a valid cultural resources review prior to commencing construction.

[6] It's difficult to conceive how communications can accurately be characterized as "inclusive." This implies that CHPRC informed the WDOH that it had commenced construction in April, as has been factually established. Why then would the WDOH write its July 8, 2010 letter stating that it appeared that construction had began without required permits, and warning that this was illegal?

[7] It is factually accurate that CHPRC as part of the corrective actions it undertook in October 2010 to address the then known violation of State drinking water regulations, briefed members of its management staff and informed them that "proceeding at risk" could not include doing work that violated law. Curiously,

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	relating to this issue also had DOE on distribution. Supporting e-mails and meetings: • Weekly 100K Project Schedule Meeting-Tuesdays at 11:00 AM w/DOE in attendance • Weekly 100K Infrastructure Project Schedule Meeting-Thursdays at 12:00 • 10/6/09 - Meeting: CHPRC w/WDOH & DOE – Discuss Permitting Requirements • 4/12/10-PNL approves via email extension of existing blanket Biological Review to 5/15/10 • 4/21/10-Email Balone (DOE-RL) to Kennedy and Edington (CHPRC)-direction from DOE for CHPRC to draft up Notice to Proceed for the Import Water Line • 5/18/10-CHPRC EP Management meets with WDOH to discuss 100K Potable Water Treatment Facility. If Project begins construction prior to approval, doing so is "at risk" of rework. • 5/24/10-PNL notifies CHPRC via email that ECR #2010-10-073 Biological Review is valid through 4/15/11	A. The assessor states that in interview with the Project Manager, during a teleconference it was agreed to continue working on the potable water system. Also, it was not stated that this decision was unilateral. The Project Manager did not know. This is an interpretation the assessor inferred from the interview with the Project Manager.[8] In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessors that the results of the discussion was to <u>not</u> work on the potable water system further until coordination with WDOH. However, it was explained to the assessor that work would continue on the non-potable components of the system. Therefore, the statement in the report is inaccurate. In the interview, the assessor stated that his interpretation is that even the raw water delivery system is part of the potable system. Despite the assessor's interpretation, the paragraph is nonfactual as written. Management directed the project to <u>not</u> work on the potable water system.	federal government to comply with the requirements of WAC Chapter 246-290. DOE acknowledges, and it is memorialized in the Surveillance Report that CHPRC self-identified and reported its failure to submit a project report to WDOH and obtain that agency's approval prior to commencing construction of the potable water system. However, CHPRC assertion that it self-discovered and reported all violations suggest that it still fails to acknowledge that it failed to obtain the required construction permit from WDOH until well after it had resumed construction activities. This is a separate and distinct violation from that of having failed to obtain project report approval. CHPRC's assertion that it stopped all construction activities on the potable water system on May 18, 2010 and did not resume those activities until it obtained all required approvals and permits is completely inaccurate. Central to this assertion appears to be the notion that the cross-site raw water delivery line and 750,000 gallon water storage tank constructed by the 100K IUUP Project were not part of the potable water system. This is a notion that has been rejected by the State and CHPRC's own legal counsel (see Surveillance Report Exhibit

having previously acknowledged the impropriety of "proceeding at risk," CHPRC seems to now offer the same improper practice as justification for, or somehow excusing its actions identified by this Surveillance Report. *See* answers at S-11-EMD-PRC-001-C01, and S-11-EMD-PRC-001-F01.

[8] The project manager referred to was interviewed on two separate occasions, and on both occasions in response to questions stated that only he and several other CHPRC managers participated in making the decision to resume work on the potable system. All three interviewers present recollect hearing this statement on both occasions. If CHPRC wants now to assert that some member of the teleconference did seek permission from DOE, they should identify the person and attending facts so they might be verified rather than making the bare assertion that the project manager interviewed was mistaken in his statements.

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	• 5/26/10-DOE NEPA Compliance Officer signs CX and confirms that cultural and ecological reviews are current CHPRC further acknowledges that this issue was self-identified through CR-2010-1657 and ORPS EM-RL-CHPRC-GENLAREAS-2010-0013. **PROPOSE COMBINING FINDINGS** CHPRC engaged the WDOH in the permitting process prior to construction, and with WDOH's full knowledge, permit approval was not gained prior to construction. However CHPRC concurred that if WDOH had an issue re-work would be required. Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.	The raw water delivery system is a requirement of the fire protection system and therefore would be constructed with or without concurrence from WDOH. The assessor states that construction continued. However, he does not state that construction on the potable water system was stopped.[9] In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessor(s) that the results of the discussion was to not work on the potable water system further until coordination with WDOH. However, it was explained to the assessor that work would continue on the non-potable components of the system.[10] The project stopped work on the potable water system. The raw water delivery system is a requirement of the fire protection system and therefore would be constructed with or without concurrence from WDOH.	28, and 2006 letter from WDOH to DOE River Corridor Project). The fact that off-site construction activities were continuing on the skid mounted water treatment system, and on-site construction activities were continuing on the raw water delivery system and tank are clearly documented in the Surveillance Report and its Exhibits. *See* Exhibit 23, et al. CHPRC's request to consolidate Findings 1, 2, 3, 4, 5, 9, 10, and 13 is rejected. Each of the Findings document separate and distinct violations of contractual or other obligations. Combining the Findings could lead to a failure to adequately evaluate and address each deficiency during the corrective action process.

[9] This is an inaccurate and disingenuous statement. CHPRC's stopping and then restarting work on the potable water system is clearly documented on pages 14 and 15 of the Report. CHPRC further misleads the reader by relying on its incorrect definition of what constituted the portable and the non-potable portions of the water delivery system. CHPRC would have the reader believe that the raw water import line, 750,000 gallon storage tank and portions of lines that deliver water to both the fire water delivery system and the potable water treatment plant and distribution system are not subject to State drinking water regulations. This is a proposition that the State WDOH and CHPRC's own legal counsel disagree with, and that is fully documented in the Report. *See* Report Exhibits 23, pg.s 6-15 (in particular, pg. 8), 28, and 29, para. 3. Perhaps more significantly, CHPRC knew it was in construction without required permits as evidenced by its written response to a July 8 2010 notification from the state expressing that unlawful construction was ongoing. *See* Report Exhibits 32 and 34.

[10] This statement is inconsistent with CHPRC's weekly ARRA reports that photographically record and expressly report that work was continuing on the potable water system at all times beyond the stoppage of several hours on May 18, 2010. In reality, the entire potable water piping system had been fully installed by the end of the week of August 20, 2010. The permit to construct the system wasn't received until September 15, 2010, almost a month later. *See* Report Exhibits 23, pg. 14, and 37.

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Finding: S-11-EMD-PRC-001-F02 CHPRC failed to apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that it obtaining DOE NCO approval prior to commencing construction was not timely **DISAGREEMENT STATEMENT** CHPRC disagrees that there was a failure to apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities. Discussions with the DOE NCO were initiated before January 27, 2010. Further, The application of the NEPA process is initiated early on in the decision making process. In this case the preliminary NEPA strategy (i.e., preparation, submittal, and approval of an activity-specific categorical exclusion [CX]) was discussed with the DOE NEPA Compliance Officer in December/January, 2010 (the first two bullets below). The development of a CX includes a description of the activity, as well as evaluation of potential cultural and ecological impacts (third bullet). The submittal of the CX for approval (April 28, 2010) occurred shortly after receiving the necessary additional input regarding cultural impacts (April 22, 2010) (last bullet). Support e-mails • Jansky to Prendergast-	A CX was not submitted for approval prior to start of construction (CX submitted April 28, 2010). However, the necessity of a CX was discussed with the DOE NCO before January 27, 2010. The application of the NEPA process is initiated early on in the decision making process. In this case the preliminary NEPA strategy (i.e., preparation, submittal, and approval of an activity-specific categorical exclusion [CX]) was discussed with the DOE NEPA Compliance Officer in December/January, 2010 (the first two bullets below). The development of a CX includes a description of the activity, as well as evaluation of potential cultural and ecological impacts (third bullet). The submittal of the CX for approval (April 28, 2010) occurred shortly after receiving the necessary additional input regarding cultural impacts (April 22, 2010) (last bullet). Support e-mails • Jansky to Prendergast-Kennedy/Rodriguez January/12/2010 Asking about APE for CX • Jansky to Russell January 27, 2010 mentioning CX development and waiting for CRR • Jansky to Prendergast-Kennedy April 12, 2010 asking about CRR • Rodriguez to Jansky April 22, 2011 CRR approval	CHPRC's request to modify Finding F02 is rejected. By its own admission in its Factual Accuracy Analysis (see column immediately at left), CHPRC did not submit its CX application until April 28, 2010, a date by which construction had already began on portions of the water treatment facility. CHPRC's proposed rewording of the finding language is troubling. It appears to contemplate that the failures involved only failing to obtain signatures on documents, and completely ignores that the actions taken circumvented the NEPA analysis process and WDOH review of designs of a public drinking water system. These are both processes that serve as checks and balances calculated to protect human health and the environment and that should have occurred before construction activities began.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Kennedy/Rodriguez January/12/2010 Asking about APE for CX • Jansky to Russell January 27, 2010 mentioning CX development and waiting for CRR • Jansky to Prendergast-Kennedy April 12, 2010 asking about CRR • Rodriguez to Jansky April 22, 2011 CRR approval **PROPOSE COMBINING FINDING** Using the Fast Track Project process, CHPRC did not gain final signatures for the WDOH permit and the DOE NCO approval for NEPA Categorical Exclusion in a timely manner. Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.		
Finding: S-11-EMD-PRC-001-F03 Upon discovery of its failure to meet environmental regulatory requirements, CHPRC failed to recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that these activities (the analysis of causes) were not completed in a timely manner. Meaning that they were not completed within 45 days per CHPRC procedures. **DISAGREEMENT STATEMENT** CHPRC disagrees that there was a failure to recognize the extent of condition, perform analysis of causes, or to implement corrective actions. CR-2010-11340, Initiation of Potable Water Line	It took nearly 5 months to publish the final report. However, preliminary corrective actions were entered into CRRS within approximately 3 months (see CR-2010-1657). Delays were encountered in presenting this issue to the ESRB. Root Cause Analysis EM-RL-CPRC-GENLAREAS-2010-0013 was completed on 10/19/10. The finding implies a broader scope than the Discussion section. Additionally, no evidence is provided about failure to recognize the extent of condition. Several actions were taken to determine if similar issues with drinking water systems were present. The report does not support a conclusion that CHPRC failed to	The paragraphs that describe the significance of Root Cause #2 were rewritten to sound less accusatory and factually more accurate as to quotations used. Language suggesting that CHPRC reevaluate its root cause determinations was removed. CHPRC's requested modifications of language were otherwise rejected. CHPRC's analysis did not, and to date still has not acknowledged its failure to identify WAC 246-290-120 (submit and obtain approval of construction documents prior to start of construction) as part of the extent of condition. Thus, CHPRC continues to not fully understand and appreciate the extent of condition and

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Construction Prior to WDOH Approval, was initiated on 5/3/2010; CR-2010-1608, Initiation of 100K Area Water Treatment System Construction Prior to Completion of Environmental Compliance Reviews/Approvals, initiated 5/18/2010; CR-2010-1657, Potential Adverse Trend-Environmental Requlatory [sic] Requirements for Construction Projects Not Met, initiated 6/7/2010. This last CR resulted in the initiation of Occurrence Report: EN-RL-CHPRC-GENLAREAS-2010-0013. In each of these self-initiated, self –identified reports CHPRC procedures were followed. In each of these reports extent of condition was evaluated, analysis of causes was performed and the corrective actions were identified and implemented. **PROPOSE COMBINING FINDINGS** CHPRC did not complete in a timely manner the analysis of cause(s) for the identified self-reports relating to the 100K IUUP. Meaning that they were not completed within 45 days per CHPRC procedures. Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.	recognize the extent of condition. The assessor states that construction was not discontinued during the period of April 14, 2010 to July 21, 2010, except for a few hours on May 18, 2010. Again, the assessor fails to acknowledge that work on the potable water system was stopped beginning May 20 through June 7, 201, due to communication with WDOH.[11] • Basis: In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessor(s) that work on the potable water system was stopped on or about May 20, 2010 until further coordination with WDOH on June 7, 2010. However, it was explained to the assessor that work would continue on the non-potable components of the system. In interviews the assessor stated that his interpretation is that even the raw water delivery system is part of the potable system. The project stopped work on the potable water system for the demonstrated period of time.	consequently has not taken corrective action to remedy that oversight.

[11] This statement is in direct conflict with documentary evidence contained in the Report's exhibits, including, but not limited to weekly ARRA reports submitted to RL by CHPRC. *See* Report Exhibit 23, pg.s 6-15.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
Finding: S-11-EMD-PRC-001-F04 After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and did not accurately categorize the event.	CHPRC concurs that this finding is partially accurate **AGREEMENT STATEMENT** CHPRC **agrees** that the root cause analysis was not timely. This is the same issue as documented In Finding 3. **DISAGREEMENT STATEMENT** CHPRC disagrees that the report was not filed timely, contained inaccurate information, and did not accurately categorize the event. The Occurrence Report (ORPS report) was filed to document management's concern associated with multiple examples of beginning work on projects without the appropriate permitting documents in place. Individually, neither of the two incidents cited in this management concern meet the criteria for ORPS reporting. DOE RL Facility Representative was notified and did not disagree with SC 4. The reporting criteria used to report this event is: PRC-PRO-EM-060, Reporting Occurrences and Processing Operations Information, Appendix C, Group 10 Management Concerns/Issues. Subset 2: *An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manger or line management to be of safety significance or of concern to other facilities or activities in the DOE complex* PRC management determined that the *series* of	The Occurrence Report (ORPS report) was filed to document management's concern associated with multiple examples of beginning work on projects without the appropriate permitting documents in place. Individually, neither of the two incidents cited in this management concern meet the criteria for ORPS reporting. DOE RL Facility Representative was notified and did not disagree with SC 4. The reporting criteria used to report this event is: PRC-PRO-EM-060, Reporting Occurrences and Processing Operations Information, Appendix C, Group 10 Management Concerns/Issues, Subset 2: *An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manger or line management to be of safety significance or of concern to other facilities or activities in the DOE complex*. PRC management determined that the *series* of issues was of sufficient concern to warrant submittal of a management concern ORPS report. The determination of significance level was based not on a single event (not reportable into ORPS) but rather on the concern that there had been a series of related issues. Designation of significance level is at the discretion of the contractor management team. 2. The finding is also incorrect in identifying timeliness issues. As stated above, the issue reported was NOT an individual event but rather the determination by management that a series of	CHPRC's request to combine Findings 1, 2, 3, 4, 5, 9, 10, and 13 is rejected. On further analysis, RL concludes that when an event is classed as a Management Concern, the assignment of Significance Category level is a somewhat subjective matter that may be subject to judgment errors. RL agrees that timely filing was addressed by Finding F03. This Finding was therefore reduced to an Observation and incorporated in the final Report as Observation O04. CHPRC's procedure PRC-PRO-EM-060 requires notification to the DOE-RL facility representative within twenty four hours of any applicable event. In this case there were two similar events which involved installation of new drinking water systems. The first event occurred on or about May 4, 2010 involving installation of the new water line and associated equipment at the 200 East Area Unsecured Core Area. The second event occurred on May 18, 2010 with the discovery of the installation of the water line and treatment system for the 100K IUUP. Each of these events involved a suspected violation of an environmental law and thus required its own Occurrence Report to be timely filed. In the case of the 100K IUUP the finding asserts that this did not occur. CHPRC's assertion that it had no duty to report until its senior management learned of multiple violations is inconsistent with DOE orders and contractual obligations.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	issues was of sufficient concern to warrant submittal of a management concern ORPS report. The determination of significance level was based not on a single event (not reportable into ORPS) but rather on the concern that there had been a series of related issues. Designation of significance level is at the discretion of the contractor management team. 2. The finding is also incorrect in identifying timeliness issues. As stated above, the issue reported was NOT an individual event but rather the determination by management that a series of events were of sufficient concern to warrant submittal of an Occurrence Report under the Management Concern criteria. The date and time of discovery is reflective of when this series of events were vetted to Sr. Management and the determination made that an ORPS report was appropriate. This is consistent with the expectations of the order and implementing procedure for the criteria used. 3. ALL Occurrence Reports are entered into the CHPRC Issues Management process, as required by PRC-PRO-EM-060. The issue identified in the ORPS report was entered into the CHPRC Issues Management process. It was screened as a Significant Issue, a formal Root Cause Analysis was performed and a Corrective Action Plan developed, the analysis and CAP were vetted through the Executive Safety Review Board, and actions entered into the Condition Reporting and Resolution System (CRRS) for tracking. This information is available upon request from anyone in the DOE complex. Although level of reporting into ORPS may force a certain level of analysis in the Issues	events were of sufficient concern to warrant submittal of an Occurrence Report under the Management Concern criteria. The date and time of discovery is reflective of when this series of events were vetted to Sr. Management and the determination made that an ORPS report was appropriate. This is consistent with the expectations of the order and implementing procedure for the criteria used. 3. ALL Occurrence Reports are entered into the CHPRC Issues Management process, as required by PRC-PRO-EM-060. The issue identified in the ORPS report was entered into the CHPRC Issues Management process. It was screened as a Significant Issue, a formal Root Cause Analysis was performed and a Corrective Action Plan developed, the analysis and CAP were vetted through the Executive Safety Review Board, and actions entered into the Condition Reporting and Resolution System (CRRS) for tracking. This information is available upon request from anyone in the DOE complex. Although level of reporting into ORPS may force a certain level of analysis in the Issues Management System, it does not prevent the contractor from performing a higher level than required by ORPS. 4. A Significance Category 4 ORPS report is submitted as a Notification/Final report. The issue description provided meets the requirements and expectations of a Significance Category 4 report in the level of information provided. If this report had been filed as a Significance Category 3 report, the description would have remained the same. Contact names	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Management System, it does not prevent the contractor from performing a higher level than required by ORPS. 4. A Significance Category 4 ORPS report is submitted as a Notification/Final report. The issue description provided meets the requirements and expectations of a Significance Category 4 report in the level of information provided. If this report had been filed as a Significance Category 3 report, the description would have remained the same. Contact names are provided if additional information is needed by the reader. (The Issues Management process also requires the RCA/CAP development within 45 days of screening. Regardless of whether this was reported at a higher level in ORPS or not, the analysis was completed. See response to Finding 3) The finding is technically inaccurate and in some sections contains opinions and conclusions bases on inaccurate understanding of what was actually reported. Although the assessor may choose to disagree with the significance category, the RL POC, who is the entity who actually has a say in 1) category and 2) SC level, agreed with the determination. As for performance of analysis – the statement is correct – no analysis is required on an SC 4 report. An SC4 report is required to be put into the Issues Management system, screened, and addressed appropriately. That was done, and in fact it received a Root Cause Analysis	are provided if additional information is needed by the reader. The finding is technically inaccurate and in some sections contains opinions and conclusions bases on inaccurate understanding of what was actually reported. Although the assessor may choose to disagree with the significance category, the RL POC, who is the entity who actually has a say in 1) category and 2) SC level, agreed with the determination. As for performance of analysis – the statement is correct – no analysis is required on an SC 4 report. What IS required is that an SC4 report is required to be put into the Issues Management system, screened, and addressed appropriately. That was done, and in fact it received a Root Cause Analysis demonstrating the process worked. Date and time of discovery is correct – this is consistent with interpretations of how to apply this criteria.	

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	demonstrating the process worked. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.		
Finding: S-11-EMD-PRC-001-F05 CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it failed to include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** This is a timeliness issue and is based on Fast Track Project initiation. **DISAGREEMENT STATEMENT** CHPRC disagrees that this is a stand-alone finding. The following constitutes an error in development of the implementing documents and is a contributing factor to Findings 3 and 4. • 100K IUUP FES documents included schedules for obtaining approvals for the construction of the drinking water system from the WDOH. The EAS form completed in July 2009 identified the requirement for a NEPA clearance and approvals from WDOH, yet the method of complying with these requirements were not passed down into the PEP. • Actions necessary to timely comply with the NEPA requirements were not included in the PEP or FES. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding		CHPRC's requested modifications of language are rejected. CHPRC's response suggests that it seeks to justify or excuse its non-compliance with the NEPA requirements because the project had an "accelerated schedule." There is no applicable contract modification which could have allowed the non-compliance to which CHPRC has hereby admitted. CHPRC's suggestion to combine the three findings based on the common element of "timeliness" is rejected. While this Finding, involves timeliness, it is primarily concerned with the lack of compliance with NEPA requirements. Fundamental compliance with NEPA obligations is separate and distinct from timeliness of other activities and for that reason this Finding will not be combined with the others suggested by CHPRC.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	timeliness should be combined.		
Finding: S-11-EMD-PRC-001-F06 CHPRC proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment Facility, as designed, did not comply with applicable contract standards, and was otherwise defective.	CHPRC does not concur that this finding is accurate. This finding is inaccurate. **AGREEEMENT STATEMENT** None. **DISAGREEMENT STATEMENT** CHPRC disagrees that it proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment Facility, as designed, did not comply with applicable contract standards, and was otherwise defective This project was a Fast Track Project. At the conclusion of the project the installation was completed, as designed, complying with applicable contract standards and was not otherwise defective. **PROPOSED FINDING** None. Delete this finding.		The language of this finding was rewritten to sound less accusatory and to be factually more accurate. CHPRC's requested modifications of language were otherwise rejected. The response suggests that if a project is proceeding on an accelerated schedule, that compliance with applicable contract requirements can be waived provided that at the conclusion of the project it meets all requirements and is not otherwise defective. This is incorrect. All applicable CHPRC contract requirements must be met unless a contract modification, signed by the DOE-RL Contracting Officer or other individual with contracting officer authority, has been effected. This, of course includes such requirements which apply during the construction phase of a project. CHPRC's response does not deny the factual accuracy of the finding that contract requirements were not met during the construction of the fire protection system for the 100K potable water treatment facility. The statements of CHPRC's own fire protection engineering firm and its fire protection engineer/deputy fire marshal assigned to this project clear established that the designed on which construction was initiated was defective in multiple ways, and that management was informed of the defects prior to commencement of construction.

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Finding: S-11-EMD-PRC-001-F07 The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.	CHPRC does not concur that this finiding [sic] is accurate. This finding is inaccurate. **AGREEMENT STATEMENT** None. **DISAGREEMENT STATEMENT** CHPRC disagrees that the work stoppage was not properly executed. A formal Stop Work in accordance with DOE-0343 was never invoked.[12] CR-20101-3049 was written to document issues with the 100K – Fire Suppression System. At all times the CHPRC followed procedure PRC-PRO-QA-052 *Issues Management*. Actions were developed such that once complete that portion of the fire system upgrade could be restarted. **PROPOSED FINDING** None. This finding should be deleted.	Premise of finding seems to be that approved revisions to CRRS actions cannot occur, and judgment cannot be applied by senior management in executing or revising "necessary corrective or compensatory actions". • Note that project was reassigned a DFM, obtained a contract FPE, resubmitted design media for each system, obtained approval and remedied issues on each system prior to resuming construction on that system. • Finding premise seems to be that a change to a CRRS item equates to violation of DOE stop work procedure.	The language of the last paragraph of this Finding was rewritten. The term " . . . prior to completion . . . " was substituted for " . . . in violation of the terms . . . ". CHPRC's requested modifications of language were otherwise rejected. The CHPRC website directs readers to DOE-0343 regarding stop work orders and implementation thereof. No other CHPRC procedure appears to exist regarding stop work orders. DOE-0343 contains language that allows a certain amount of flexibility and discretion and the assessors recognize that fact. The assessors also acknowledge that CHPRC uses its management procedure in addressing this issue. One part of the "premise" of this Finding, however, is that although CHPRC used its applicable procedure it apparently did not follow it in this case. Appendix H of PRC-PRO-QA-052 is a template for those individuals needing to perform an apparent cause analysis. Section 6.0 of that appendix states, in relevant part, "Remedial Actions* Identify action(s) that address the identified issue." In the Apparent Cause Analysis prepared as part of CR-2010-3049 it states near the bottom of page 2 of 3, "Closure of the Corrective Actions outlined in CR-2010-3049 is required to lift the Stop Work Order and resume work on the Fire Suppression System Upgrade Project." During the course of this surveillance one of the assessors met in a

[12] The deputy fire marshal referred to stated she understood that work was stopped pursuant to DOE-0343, and that was certainly what she had requested. If it can be determined that, as CHPRC states above, that it actually didn't stop work pursuant to DOE-0343 after being requested to do so, this may constitute a new and separate finding.

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			one on one meeting with the former CHPRC Chief Operating Officer (COO) concerning this surveillance. Among other matters this stop work order was addressed. Regarding the quote above the assessor asked the former CHPRC COO "is this a qualified statement?" The CHPRC COO stated "no." The assessors share the former COO's view of the statement and believe that it was intended, as written, to mean that CHPRC could not restart any portion of the work on this project until all the items identified in the Apparent Cause Analysis Recommended Corrective Action Items were completed. If that was not the case then why was it worded in such a broad and all inclusive manner? In support of this position is the language of Section 5.0 Step 3 paragraph 3 of DOE-0342 which states, "Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented* in accordance with Contractor procedures (*logbook or other established method of reporting/tracking/communicating safety issues and corrective actions management).
Finding: S-11-EMD-PRC-001-F08 The CHPRC 100K IUUP did not follow DOE, CHPRC and 100-K procedures during the design review process.	CHPRC concurs that this finding is accurate. **AGREEMENT STATEMENT** CHPRC agrees that in implementing the Fast Track Project not all procedures were explicitly followed. **DISAGREEMENT STATEMENT** None	The integration of safety and environmental management is outlined in PRC-MP-MS-003, *Integrated Safety Management System / Environmental Management System Description*. Per, that document, ISMS stands for the Integrated Safety Management System. PRC-MP-MS-003 explicitly calls for identification of requirements and controls related to fire protection. The discussion identifies more of an implementation problem than a system problem.	The language of this Finding was rewritten to be technically more accurate. Paragraphs that originally discussed the results of field reviews of installed systems was determined to be irrelevant and was removed. CHPRC's requested modifications of language were otherwise rejected. The principle question at issue here is why procedures were not followed during the design

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	PROPOSED FINDING None. Finding statement is factually accurate but could be more specific by stating "Fire Protection procedures…"	Accuracy could be improved by using the intended program title and characterizing the issue as one of implementation rather than one of inadequate program. Revise the first sentence on page 37 to read: Integration of fire protection requirements is a weakness in the implementation of the CHPRC Integrated Safety Management System (ISMS). Alignment of MSA fire protection procedures and expectations for approvals prior to construction were not consistent with CHPRCs procedure set that includes flexibility for procurement and construction at risk. Project was intentionally executed as a fast track project with management endorsement of risk. Cascade fire protection, a sub to Grant construction, installed the building sprinkler line and heads in an unapproved fashion. This was remedied. The 100K IUUP FPE/Deputy Fire Marshal participated in the reviews of the installation documents. That individual served as a liaison between the project and the HFMO. A meeting with the HFMO to discuss the change the fire line from 12-inches to 8-inches was conducted in March 2010 timeframe. In addition, the 100K IUUP and HFMO conducted a follow-up meeting with Dale West (DOE-RL Fire Protection Engineer) to further discuss the issue for approval. Design document was submitted to DOE. The project relied on DFM for direction.	review process. Procedures that were not followed involved more than just fire protection procedures, and hence the request to narrow the language on procedures is rejected. Therefore, this finding will remain as a stand-alone finding. The 100K water distribution system was installed without a recorded 100% design review by the HFMO. A twelve inch diameter water main is required by SCRD 420.1B. The HFMO does not have the authority to waive this requirement. Only a contracting officer or person with contracting officer authority may waive such a requirement.

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		FPE's assistance to the 100K IUUP was provided with any/all information available at that time.	
Finding: S-11-EMD-PRC-001-F09 The CHPRC 100K IUUP did not follow DOE and CHPRC procedures during the permitting process.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that procedures were not completely followed in that signatures were not obtained prior to the start of construction. **DISAGREEMENT STATEMENT** CHPRC disagrees with this statement in that it makes it appear the whole procedure was ignored. This is inaccurate. In reality only the signatures were not obtained. Once identified, the Project responded with a very detailed, systematic, and rigorous compliance process prior to the Facility going into operation. This is discussed in the response to Finding 1. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.		The language of this Finding was rewritten to be more technically focused and accurate. The language of the discussion section of this Finding was expanded to provide a more objective analysis and clearer explanation of relevant facts. CHPRC's requested modifications of language were otherwise rejected. The response admits the finding but downplays the significance of following applicable procedures and contract requirements. It suggests the construction manager had completed all applicable forms as required by MSC-RD-8589 and MSC-PRO-24889 except for obtaining necessary signatures prior to starting construction. The response provides no explanation, by way of factual accuracy, as to why these forms were not filled out prior to construction. Following the applicable procedures that would have lead to obtaining approval signatures provides for completing important reviews of proposed construction activities to assure compliance with critical safety standards. Failing to follow procedures and obtain signatures denies protections that would otherwise be afforded human health and the environment. The principle issue addressed by this finding is

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			"why the construction manager did not get the necessary **reviews** and signatures on these forms and chose to proceed to construction without them?" That question is left unanswered by CHPRC's response.
Finding: S-11-EMD-PRC-001-F10 The CHPRC 100K IUUP installed water distribution system piping that did not meet contractual requirements previous to applying for and receiving approved exemptions and equivalencies from RL.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that the installation of the water distribution system approvals were not obtained in a timely manner. **DISAGREEMENT STATEMENT** CHPRC disagrees that contractual requirements were not met. In applying the Fast Track Project process, the water distribution system piping has been installed and meets all contractual and regulatory requirements including obtaining the approved exemptions and equivalencies. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.	Discussions with the HFMO and the FPE/DFM took place to discuss the issue The assessor states that the decision for the fire water distribution system was unilateral to CHPRC. However, the author was informed in interviews that a meeting with HFMO was held and concurrence gained to proceed with both the 8" fire loop around 105KW and the non-looped system around 105KE. No minutes were provided from the meeting. The Project Engineer provided testimony to the assessor(s) that a meeting was conducted with HFMO and concurrence was gained for the exceptions to the fire distribution system as described above.	The language of this Finding was rewritten to to be more technically accurate. CHPRC's requested modifications of language were otherwise rejected. The CHPRC response suggests a lack of understanding or disregard for contractual obligations. The response suggests that since the project was "accelerated" CHPRC somehow met all contractual and regulatory requirements including obtaining the approved exemptions and equivalencies. Simply taking the position that the water distribution system now complies with all applicable requirements (a position that has yet to be verified) does not equate to complying with regulatory requirements to obtain exemptions and equivalencies at the appropriate times. The CHPRC response also fails to mention that a DOE FPE and the DOE-RL Contracting Officer both informed CHPRC of the HFMO's lack of authority to grant any deviation from CHPRC contract requirements.
Finding: S-11-EMD-PRC-001-F11 The CHPRC proceeded in the	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC concurs that construction proceeded	Initial building finish schedule did not involve FPE/DFM for approval. Note that this finding should be combined with 6, 8, 9, 10, as they all deal with construction	The language of this Finding was rewritten to to be more technically accurate. CHPRC's requested modifications of language were otherwise rejected.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
construction of the Potable Water Treatment Facility structure prior to the review and approval of the design by a qualified FPE /DFM.	prior to the complete review and approval of the design by the FPE/DFM. DCNs had FPE sign offs, but DFM approvals were not obtained in all cases as required by MSC-RD-9118, *Fire Protection Design/Operations Criteria.* **DISAGREEMENT STATEMENT** CHPRC disagrees that this is a stand- alone finding. **PROPOSED FINDING** None.	activities being executed too early.	CHPRC's response fails to acknowledge that each of these findings involves separate fundamental issues. All three findings noted deal with "procedure compliance" as do all sixteen findings, three observations and the overarching concern. Specifically, though, this finding addresses the issue of the lack of required review and approval of the Potable Water Treatment facility structure by a qualified Fire Protection Engineer/Deputy Fire Marshall prior to start of construction. The basic question of this finding is "Why did CHPRC choose to start construction without obtaining required review and approval? For CHPRC to take the position that this finding only deals with "procedure compliance" strongly suggests that CHPRC does not comprehend the essence of the finding. Failure to comply puts worker safety at risk.
Finding: S-11-EMD-PRC-001-F12 CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing	CHPRC does not concur that this finding is accurate. This finding is inaccurate. **AGREEMENT STATEMENT** Page 46: CHPRC **agrees** with the comment in the discussion in Chapter 2 that the FSAR needs clarification on the description of the new Water Treatment Facility to ensure consistency with the design as built configuration. **DISAGREEMENT STATEMENT** CHPRC **disagrees** that construction proceeded without identifying and resolving all appropriate USQs.	Page 45: The text used in the surveillance report contains four separate issues summarized below: Issue 1: The timeline of application of USQ products to the project demonstrates appropriate implementation of the USQ process. This timeline of USQ process application shows that only site preparation work was performed prior to receipt of RL approval of a safety basis addressing the installation and operation of the new fire water system. The site preparation work was addressed in the USQ process under USQ number 0110-2010. The safety evaluation report from RL (10-SED-0080) approving the installation and operation of the new fire water	CHPRC's requested modifications of language were rejected. CHPRC was unable to provide the USQ review which was required. On September 13, 2011 CHPRC declared positive USQ 0225-2011 for this issue. Therefore, Issues #1, 2, and 3 remain valid, as noted below. CHPRC has re-analyzed the water leakage rate in report DD-50551, which concludes that maximum credible water flow is 6, 693 gallons per minute – an increase of 446 percent. This is a discernable increase and should have received a USQ Evaluation.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
radioactive materials, has not been evaluated for USQs.	Basis (Page 45): Issue 1: "This Team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review." We disagree. Records available that demonstrate that all work was appropriately evaluated under the USQ process. Issue 2: "Can the new system provide excessive water, such that any leaked water could enter the K West Basin and cause an overflow?" We disagree that changes associated with the fire water system flow capability can create the postulated event. Issue 3: "Further, the CHPRC nuclear safety staff stated that no USQ screenings or evaluations address these issues." We agree that USQ determinations or screenings were not performed for the Issues identified in Issue 2, but we believe that no such USQ screening or determination was required because the scenario postulated by RL was not judged to be possible because of the topography. Issue 4: "Since being informed of the issue, CHPRC has not provided evidence of entering the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203(g). We agree that the potential inadequacy of safety analysis (PISA) process was not entered, but we believe that entry into the PISA process was not required, in this case, as allowed for by the RL-approved PRC-PRO-NS-062, Unreviewed Safety Question Process, since the scenario was not judged to be possible because of the topography.	system stated: "The update reflects planned electrical and water distribution system upgrades to improve safety, and allow for the existing systems to be demolished. These upgrades have been reviewed and will support fire protection and suppression, and electrical safety issues." Conclusion Based on the above, the Review Team concludes that the annual update appropriately describes the 1 05-KW Basin, and residual hazards are within RL guidelines. Therefore, the Review Team recommends that the RL Manager, as the designated approval authority for this facility, approve the submittal, as amended by KBC-45852, Revision 0." Revisions to the system subsequent to the receipt of the SER were evaluated under the USQ process when inside the 100K fence area demarcating the nuclear facility and by the management of change process when outside of this fence line. A cross-walk demonstrating that that all revisions to the design were considered under the USQ process was provided to a member of the RL assessment team on 4/28/2011. Prior to tie-in another USQ was performed as documented in USQ 216-2010. The approach implemented through this time-line is consistent with the RL-approved USQ process (PRC-PRO-NS-062) which states: "Design Change Notices (DCN) and Facility Modification Packages (FMP) that will be either 1) USQ reviewed prior to implementation at the	While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner and near the west wall of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation. Further, this judgment was not developed until after RL issued the draft Surveillance. On September 13, 2011, CHPRC declared positive USQ 0225-2011 for this issue. CHPRC did not enter this into the PSIA process until after they received this draft Surveillance for factual accuracy review. The issue regarding adequacy of USQ review is one of timing – USQ -0025-2011 was done against Revision 0 of DD-47929 that was approved on 12/27/2010. Yet, the USQ screen which relied on this calculation was completed on 10/20/2010. Further, DD-47929 Revision 0 actually has four dates: Originated 12/27/2010, Checked 10/13/2010, and the last page has a notation for Revision 0 of 12/28/2010. This discrepancy in dating means that RL cannot determine what issues actually received the USQ Evaluation.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Basis (Page 46): The USQ (0025-2011, Rev. 0) was completed for several DCN's that had been issued during installation of the water system. Consistent with PRC-PRO-NS-062, initially these changes were exempt from the USQ process. Upon completion of the installation a document review of all the DCNs was performed and captured in DD-48931. As stated above both the document and USQ was provided to RL. RL stated they were not sure that the USQ really specifically addressed the change; subsequently the USQ was revised to Revision 1 and provides further clarification of the review. Basis (page 47): The actual calculation in question DD-47929 was approved on 10/11/2010. The USQ screen on this calculation was completed on 10/20/2010. The ECR for the calculation was not issued until two months later on 12/28/2010. The USQ screener reviewed the calculation on the release date and signed the form as required by the process. In addition, there is no basis for the footnote discussion. **PROPOSED FINDING** None. Delete this finding.	facility, or 2) incorporated into a facility modification or new facility design that will be authorized by RL in a SER so long as the DCN or FMP do not modify an existing hazard category 1, 2, or 3 nuclear facility prior to RL issuance of the SER. Changes to the facility or partial installations made prior to the receipt of the SER are subject to the USQ process." Using this provision of the RL-approved PRC-PRO-NS-062, the 100K Area Infrastructure Upgrade Hazards Analysis (KBC-43475, Rev. 1) and a KW Basin FSAR revision (HNF-SD-WM-SAR-062, Rev. 15) were developed to support this facility modification. These documents address the potential for water releases that result in an overflow from the K-Basin. The FSAR revision was reviewed and approved by DOE-RL with a SER (10-SED-0080). The system did not begin operating prior to DOE-RL approval of the revised safety basis. Since the USQ records and timeline show appropriate implementation of the USQ process, CHPRC requests that this issue be removed from the report. Issue 2: In accordance with 10 CFR 830, a review of the supporting Hazards Analysis, KBC-43475, Rev. 1, 100K Area Infrastructure Upgrade Hazards Analysis (HA), was performed. There were no new accident scenarios identified by the HA Team so the Team believed that the FSAR accident scenarios remained bounding and there was no need to carry forward any additional analysis. This analysis specifically identified in the event related to a large leak from the 750,0000 gallon water supply tank (Event 3.3)	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		that the general terrain would preclude water from such ruptures from entering the K Basin and causing an overflow. The HA also identified other smaller events that potentially could cause some water to flow into the basin, but such external ruptures were judged to not create a flow into the basin greater than the overflow accident already evaluated in the safety basis caused by the rupture of an 8-inch line internal to the facility. (The internal line feeding the basin resupply line was not modified as a result of the work, and its flow remains limited to the flow rate of 8-inch piping.) Based on the hazards analysis developed to support the 100K fire water project, and referenced in the approved safety basis, CHPRC judged that the event described by RL could not create an overflow condition from the basis that would exceed the already analyzed condition. Subsequent to the raising of this concern, CHPRC at the request of RL has prepared additional analyses to evaluate several subsequently postulated potential concerns raised by the RL staff. These analyses confirm (DD-50496, DD-50551 and DD-50618) that the initial judgment of the hazards analysis is correct that fire loop water breaks would not create a flow into the basin greater than that already postulated to result from the internal supply line break. This conclusion was also documented in two subsequent USQ determinations performed at CHPRC management request. (USQ 205-2011 and 0220-2011). Since the original hazards analysis considered multiple types of water breaks and concluded that these breaks would not provide a water flow	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		into the basin exceeding that already postulated, and since all subsequent analysis confirms the conclusions of the hazards analysis were sound. CHPRC requests that this issue be removed from the report. Issue 3: As stated in the response to Issue 2 above, there was no mechanism identified in KBC-43475 to create an excessive water flow condition that could result in overflowing the basin at a rate that exceeds that already postulated for an internal line break. Moreover, changes were evaluated in the USQ process as identified in the response to Issue 1. As such, there is no basis in the RL-approved USQ process (PRC-PRO-NS-062) for performing a USQ on this issue. Issue 4: This issue was not entered into the PISA process as allowed for under the RL-approved USQ process. This process allows for facility management to determine if the condition could represent a PISA. If facility management determines that there is no potential for a PISA to exist, then PRC-PRO-NS-062 allows that the PISA process may be exited. Based on the information from the original hazards analysis developed in support of the 100K project, and referenced in the safety basis, CHPRC facility management determined there was no PISA potential and exited this process in accordance with PRC-PRO-NS-062. Since performance of the PISA process was not required, in this case, in accordance with the RL-approved USQ process, CHPRC requests that is	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		issue be eliminated from the report. Page 46: The USQ (0025-2011, Rev. 0) was completed for several DCN's that had been issued during installation of the water system. Consistent with PRC-PRO-NS-062, initially these changes were exempt from the USQ process. Upon completion of the installation a document review of all the DCNs was performed and captured in DD-48931. As stated above both the document and USQ was provided to RL. RL stated they were not sure that the USQ really specifically addressed the change; subsequently the USQ was revised to Revision 1 and provides further clarification of the review. To support closure of the issues identified above, a review of the supporting Hazards Analysis, KBC-43475, Rev. 1, 100K Area Infrastructure Upgrade Hazards Analysis, was performed. Section 2.1, states that the Water Line and Filtration Subproject will provide a new water supply for the 100K Area. This new pipeline will transfer water from the 600 Area export water line. A new 750,000-gallon raw water storage thank will be installed, and equipment will be installed to provide potable water, fire protection and service water for fire protection, and 105-KW Basin makeup water (for nuclear safety) from this new supply. New underground piping distribution systems will be installed to supply the potable water and the fire water/service water throughout the 100K Area, and will include a fire water main loop around the 105-KW Basin and tie into the existing system at CVDF.	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		Section 2.1.1 of KBC-43475 states that the design flow rate of raw water originates from Helens Junction to the Water Treatment Plant at 100K. The water treatment plant provides a water flow rate of 1,500 gpm for potable water, service water for fire protection, and service water for emergency 105-KW Basin water makeup. It goes on to state that service water for emergency 105-KW Basin makeup water demand shall be 1,500 gpm, as specified in HNF-SD-WM-SAR-062, Section 5.5.3.3.6. The HA tables in KBC-43475 identify several scenarios with the potential to impact the basin overflow event, including flooding and pipe breaks outside the facility. Noting that the new fire loop could be fed from two directions, any flooding of the outside terrain would have to overcome slope, spreading, infiltration of the soil and the height of the basin foundations before it could dilute the basin water and cause an overflow. Any flooding immediate adjacent to the facility would come from the 8" supply line. If this line breaks some of the water would be released to the water column, and as such the total flow into the basin would be reduced in comparison to a break of the 8" line inside the facility. Another postulated event could include the new water supply loop around the facility that could suffer a double-ended shear. This newly installed loop at its closest to the building is over 100 feet from the exterior of the 105-KW Building. This loop remains physically buried in the ground. As identified in the HA a more likely scenario would be impact to a fire hydrant by a vehicle. The closest fire hydrant is ~ 105 feet from the building with the majority being	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		150 to 400 feet from the facility. It would be a tortuous path for the water from a broken fire hydrant to reach the basin; for example, it would have to flow over various mounds, flow around other outside facilities, and over the facility foundation (which includes a 4" curb). Therefore, there is no identifiable mechanism to cause the water flow from such a double-ended shear to provide a flow into the basin at a rate exceeding the already postulated 2000 gpm associated with the existing accident analysis. Section 2.6 of the 105-KW Basin FSAR states that a large demand for water make-up is supplied through an 8-in. water make-up line from the service water, which can supply approximately 1,500 gal/min. This is consistent with the previous water supply system entering the 105-KW Building. Section 3.4.2.9, Overflow of Radioactive Water From 105-KW Basin, describes an accident scenario where a pipe breaks, or off-normal operation results in an overflow of the fuel storage basin water. In this analysis, a flow rate of 2,000 gal/min is assumed to go unchecked for 8 hours, resulting in a total overflow (assuming an initial, nominal basin level of 16 ft.) of approximately 606,000 gallons. HNF-SD-NR-TA-011 is the supporting analysis for this event and provides the detail of the scenario discussed in Section 3.4.2.9 of the FSAR, where an overflow accident begins with a complete break of a backup water supply line. This break adds 2000 gal/min to the basin for a period of 8 hours, resulting in a total of 960,000	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		extra gallons added to the basin, causing 606,000 gallons of overflow. This accident results in the formation of a shallow lake about 3.5 inches deep on the average with a surface area of about 5.4 acres outside the basin building. The consequence calculation for this scenario was divided into two parts. The first part is the discharge to the Columbia River and the second part includes the aerodynamic entrainment from the shallow lake. This release is assumed to last for 1 day. The discharge to the Columbia River assumes that all the activity in the pool water enters the river over a 24 hour period. The results of this analysis determine that even if the entire volume that overflows entered the Columbia River, the bounding doses would be no more than 3.3 x 10-3 rem. The airborne emission due to the entrainment and resuspension from the 5.4 acre shallow lake is also assumed to last for 24 hours. The shallow lake could be larger or smaller than was assumed. A portion of the water will soak into the ground. Since the air emissions doses are proportional to the lake area, these doses could be large or smaller. The dose to the Hanford Site boundary includes contributions from both the airborne release and the discharge to the Columbia River. Since the two receptors are actually in opposite directions from the 100K area, this analysis overestimates the site boundary dose. A summary of the dose consequences from the overflow accident is provided on Table 3. For the Hanford Site boundary the calculated dose is 6.51 x 10-6. Additionally, doubling the surface area of the lake would increase the onsite dose to 0.0088 rem; a value below any risk evaluation	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		guidelines. In summary, although it is recognized that the new system has different supply redundancies than the previous system; including electric pumps, a bypass pressure regulating valve and diesel fire pump that provide supply pressure and flow redundancies. However, they do not constitute a parallel flow increase as they share a common distribution system and are staged based on pressure, which remains nominally the same as the previous system. To address the 8 inch vs. 12 inch comment, the following discussion is provided. The issues were addressed through the USQ process. Note that the USQ log is a management tool to track walk-in work of USQs, and is not a comprehensive record of the USQ process. The Hazard Analysis process and Safety Basis Change process are not recorded in the log. The following documents, consistent with the USQ process, addressed the issues raised. Note that several of these documents would not appear in the log. • KBC-43475 100K Area Infrastructure Upgrade Hazards Analysis rev 0 • KBC-43475 100K Area Infrastructure Upgrade Hazards Analysis rev 1 • HNF-SD-WM-SAR-062, Rev 15, K Basins Final Safety Analysis Report • USQ Determination 0025-2011 performed a comprehensive evaluation of design changes. • USQ Determination 0216-2010 evaluated the connection of the fire and potable lines, over several revisions to match	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		proposed changes. • USQ screening 0245-2010 (Rev. 0 and 1) evaluated the calculation associated with the change to use an existing 8" line in place of the proposed 12" between the CVDF and 105KW loop. Page 47: The actual calculation in question DD-47929 was approved on 10/11/2010. The USQ screen on this calculation was completed on 10/20/2010. The ECR for the calculation was not issued until two months later on 12/28/2010. The USQ screener reviewed the calculation on the release date and signed the form.	
Finding: S-11-EMD-PRC-001-F13 CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that the Fast Track Project did not get final signatures in a timely manner. And further, CR-2010-1080, Deficiencies in the Implementation of the Project Execution Process as Required by PRC-PRO-PM-24889, Project Initiation and Execution. This was a self identified issue that followed procedure PRC-PRO-QA-052 *Issues Management*. **DISAGREEMENT STATEMENT** CHPRC disagrees that this is a stand -alone finding. **PROPOSED FINDING** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding		CHPRC's requested modifications of language were rejected. It is acknowledged that CHPRC identified this non-compliance in an independent assessment conducted of the CHPRC EPC organization in January-March 2010. (See Surveillance Exhibit 51). This assessment was formally transmitted to the EPC on April 14, 2010 and identified, among other deficiencies, that EPC had not completed the required PEP by that date. One day prior CHPRC placed this item into its corrective action system. Interestingly enough, EPC also started construction and continued construction on that date apparently knowing it had no PEP authorizing any construction activities. The essential question of this finding is "Why did EPC commence and continue construction knowing it had no PEP in effect?"

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	timeliness should be combined.		(NOTE: The corrective action item CR-2010-1080 dated April 13, 2010 allowed EPC until July 22, 2010 to complete and finalize the PEP. ECP completed the PEP on July 22, 2010 and the action item was closed out of the corrective action system on July 29, 2010.) A reading of CHPRC's response to this finding suggests that CHPRC still believes that having a draft PEP during construction of the 100K IUUP was adequate to fulfill contract requirements and that the completion and approval of the required final version was a mere formality. CHPRC's response demonstrates a significant lack of understanding of a critical CHPRC contract provision which unequivocally requires compliance with DOE Order /CRD O 413, 3A. The response also contradicts Section 5.8 of PRC-PRO-PM-24889 Project Initiation and Execution which states, in relevant part, "The PEP is a living document and should be kept current such that the project team and others (e.g., Sr. Management, Client) can read the PEP and know how the project is being executed, not how it was originally planned to be executed. <u>It shall be at a minimum updated prior to the start of each phase of project execution.</u> Emphasis added. This project was nearly completed by the time the PEP was completed and was certainly never updated during any phase of execution. And, there is no provision in these requirements for relaxation or exemption thereof just because a project is "accelerated."

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
			This is a stand-alone issue and the finding will not be combined with others on the basis of "timeliness" as suggested by CHPRC.
Finding: S-11-EMD-PRC-001-F14 CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to completion of cultural resources reviews.	A Hanford Site Excavation Permit for 100K IUUP was approved prior to approval by the Hanford Site NEPA Compliance Officer of the NEPA categorical exclusion.[13] **Discussion** PRC-RD-EP-15332 requires that NEPA review be completed prior to start of construction activities. DOE-0344, Section 5.3 and Appendix E requires that all necessary environmental approvals are in place before the environmental approval of an excavation permit (permit block 11). On March 18, 2010, the 100K-Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP. The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." At the time of the ECO approval of CHPRC Hanford Site Excavation Permit # DAN-3913 (Exhibit 19), the NEPA categorical exclusion for	CHPRC agrees that excavation permits were issued prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer (a signed NEPA categorical exclusion determination). CHPRC disagrees that excavation permits were issued and soil disturbing activity began before completion of the cultural resource reviews. Excavation permits issued for work inside the fence were signed based in part on a valid blanket cultural resource review for the 100 K Area (e-mail, Ellen-Prendergast-Kennedy, PNNL to Michelle Chamness, et al, "FW: BLANKET CERR EVALUATION FOR THE 100-K PROJECT" dated March 30, 2010). Earth disturbance was not begun on the import raw water line outside of the 100 K fence line until after the relevant cultural resource review was completed on April 22, 2010 (See Exhibit 54, e-mail, Annabelle Rodriguez, RL, to Scott Story and Colburn Kennedy, CHPRC, "Notice of Cultural Clearance for the Installation of the 100-K Area Raw Waterline," HCRC # 2009-600-	The content of Finding S-11-SED-PRC-F14 was revised to reflect that CHPRC was relying upon a blanket cultural resources review prepared by PNNL for construction activities performed inside the 100K perimeter fence, and a second cultural resources review also performed by PNNL that supports the NEPA CX determination issued for construction of the cross site raw water supply line outside the 100K perimeter fence. The analysis of the facts in light of this new information does not however, result in elimination of Finding S-11-EMD-PRC-001-F14. The language of the Finding is however modified to read: " . . . and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review." This modification of language more accurately reflects the facts as RL now understands them. It is undisputed fact that on March 18, 2010 the 100K ECO signed an excavation permit that allowed construction activities to begin any time thereafter on the new potable water system inside

[13] CHPRC's comments on Finding S-11-EMD-PRC-001-F014 were revised and submitted to RL by CHPRC's General Counsel on September 1, 2011. CHPRC's original comments discussed ecological resources reviews rather than the relevant cultural resources review. The comments presented above are those provided on September 1, 2011.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	the activity was not yet approved. The categorical exclusion was approved by the Hanford Site NEPA Compliance Officer on May 26, 2010 (DOE/CX-00015, see Exhibit 48).	018).	the fence. In doing so, the ECO was apparently relying on a blanket cultural resources review prepared in support of CERCLA remedial activities at the 100K Area, and originally issued by PNNL on May 17, 2004. The e-mail documents cited and provided by CHPRC clearly establish that the ECO signed the excavation permit prior to receiving confirmation of the continuing validity of the blanket cultural resources review by PNNL on March 30, 2010. As discussed under Finding S-11-EMD-PRC-001-F01, construction of the potable water treatment facility was not identified as a CERCLA project. Quite to the contrary, CHPRC's EAS Form describing this project explicitly states it is not a CERCLA project. Furthermore, the NEPA CX determination issued in support of the water systems construction explicitly identifies the water treatment system, both inside and outside the fence, as the subject of the CX determination. Given that a CX determination, supported by its own cultural resources review was issued, it is difficult to understand way CHPRC relied upon the older blanket cultural resources review. In any event, the excavation permit at issue was signed prior to confirming a valid review existed, and that act does not comply with CHPRC's procedures.
Finding: S-11-EMD-PRC-001-F15	CHPRC concurs that this finding is partially accurate.	While the finding statement is partially accurate, this issue had been self-identified by the CHPRC. Corrective actions are being addressed	The language of this Finding was revised to be present a more technically correct recitation of facts. The paragraph discussing the

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
The CHPRC does not have an active Memorandum of Understanding (MOU) with the HFMO which has resulted in confusion of the authority, responsibilities, and duties of the HFM.	**AGREEMENT STATEMENT** CHPRC concurs that the finding statement is partially accurate, this issue had been self-identified by the CHPRC. Corrective actions are being addressed through CR-2010-3375 to clarify the roles and responsibilities of the Site Fire Marshal, Fire Marshal's Office, Deputy Fire Marshals, and Qualified Fire Protection Engineers. Corrective action #2 of CR-2010-3375 includes writing a new Administrative Interface Agreement "Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement between the CHPRC, WCH, and MSA. Actions are scheduled for completion by 9/30/11. **DISAGREEMENT STATEMENT** Since the finding issue was already self-identified, this finding should be deleted. **PROPOSED FINDING** None. The finding should be deleted.	through CR-2010-3375 to clarify the roles and responsibilities of the Site Fire Marshal, Fire Marshal's Office, Deputy Fire Marshals, and Qualified Fire Protection Engineers. Corrective action #2 of CR-2010-3375 includes writing a new Administrative Interface Agreement "Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement between the CHPRC, WCH, and MSA. Actions are scheduled for completion by 9/30/11. MOU MSA-CHPRC-0800081, revision 0, *Memorandum Of Understanding, Rev. 0, Between The Hanford Fire Marshal's Office And Other Contractors With Fire Protection Engineers Designated As Deputy Fire Marshals* (CHPRC-080081) was issued on July 17, 2009. The blue sheet cover page on the MOU stated that it should be updated and re-issued in one year. The MOU between the CHPRC and the HFM expired on 7/17/10 and was never reinstated. The MOU described the functions of the Hanford Fire Marshal's Office (HFMO). It also specified activities and responsibilities of the project/facility FPE's and defined the interface role between the HFMO and those FPE's designated as project/facility Deputy Fire Marshals. The RL Supplemental Contractor Requirements Document (SCRD) 0 420.1 B delineates the general functions of the HFMO. The SCRD also references the Fire Marshal roles and responsibilities as contained in the Authority, Responsibilities, and Duties of the Hanford Fire Marshal (a.k.a. Fire Marshal Charter), and requires RL contractors to recognize and	circumstance under which the MOU expired was rewritten to state " . . . as a result of inaction expired one year later." vs. " . . . was allowed to expire one year later.". CHPRC's requested modifications of language were otherwise rejected. An uninformed reader could reasonably conclude that CHPRC has timely, appropriately, and successfully concluded this matter. However, the response completely fails to acknowledge that this action item was originally identified in September 2010 during the stop work associated with the 100K IUUP fire system construction activities. It also fails to acknowledge that this item has been rolled over from its initial corrective action (CR-2010-2597) to a second corrective action (CR-2010-3049) to now yet a third corrective action (CR-2010-3375). As of this writing it is nearly a year since this issue was identified and still it has not been resolved. A fundamental issue of this finding is "Why has it taken a year to successfully close out this action? And, "Upon completion will the action satisfactorily eliminate the confusion of the authority, responsibility, and duties of the HFMO?" CHPRC's response does not come close to answering these questions. RL acknowledges that CHPRC self-identified (and memorialized in CR-2010-3375) the need to clarify the roles and responsibilities of the HFMO. CHPRC assigned the CR a significance level of "opportunity for improvement," which suggests the Contractor does not recognize it obligation to execute a memorandum of understanding with other contractors that

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		institutionalize the HFM's authority.	addresses the roles and responsibilities deficiencies.
Observation: S-11-EMD-PRC-001-O01 CHPRC had not ensured a complete Lockout/Tagout (LOTO) program for the 100-K Potable Water Treatment Facility construction site.	CHPRC does not concur with this observation. This observation is inaccurate. **AGREEMENT STATEMENT** None. Delete the Observation. **DISAGREEMENT STATEMENT** The safety representative in question was not the LOTO point of contact and was not required to take the training. The CHPRC Safety Representative had completed all required training as required by the Hanford Site LOTO program and was involved throughout with all construction activities. **PROPOSED OBSERVATION** None. Delete the Observation.	The CHPRC Safety Representative had completed all required training as required by the Hanford Site LOTO program and was involved throughout with all construction activities.	CHPRC's request to delete this Observation is rejected. Given the potential adverse worker safety consequences that could have resulted, this Observation should have been originally classified as a finding. The observation states in the opening sentence of the discussion: "CHPRC had not ensured that the prime subcontractor safety representative for the 100-K potable water treatment facility construction site had completed the training requirements of the Hanford Site LOTO program prior to start of work. Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1 Paragraph I. states in part 'prior to start of work the contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RK-92-36 Rev 1 and certification that all training is current." The CHPRC assertion that its safety representative had the applicable training is not relevant. The issue here is that the subcontractor safety representative did not have the requisite training. *This Observation was combined with Observation S-11-EMD-PRC-001-O02 and appears in the final Surveillance Report as Finding S-11-EMD-PRC-001-F15*

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
Observation: S-11-EMD-PRC-001-O02 CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate briefings.	CHPRC concurs that this observation is accurate. **AGREEMENT STATEMENT** CHPRC agrees with this observation with comment. The CHPRC Responsible Manager provided constant oversight and was maintaining a current JSA in accordance with PRC-PRO-SH-40078. The JSA observed by the assessors had not been updated. No LOTO issues had been identified, no lost construction time, and no recordable issues had been noted. The prime subcontractor's Safety Manager has ensured that safety is a high priority at all times **DISAGREEMENT STATEMENT** **None**	The CHPRC Responsible Manager provided constant oversight and was maintaining a current JSA in accordance with PRC-PRO-SH-40078. The JSA observed by the assessors had not been updated. No LOTO issues had been identified, no lost construction time, and no recordable issues had been noted. The prime subcontractor's Safety Manager has ensured that safety is a high priority at all times.	CHPRC's request to delete this Observation is rejected. CHPRC's response completely sidesteps addressing the issue of the observation. The issue here is the subcontractor did not maintain its JSA according to its contractual requirements. The CHPRC's response does not address that issue. Failure to maintain and provide job briefings from current JSAs constructively denied workers the protection of a functional LOTO program when systems being worked on were energized and presented a significant risk of serious injury or death. *This Observation was combined with Observation S-11-EMD-PRC-001-O01 and appears in the final Surveillance Report as Finding S-11-EMD-PRC-001-F15.*
Observation: S-11-EMD-PRC-001-O03 CHPRC's central environmental management organization failed to respond to and provide environmental compliance analysis and technical advice timely requested by the	CHPRC does not concur that this observation is accurate. This observation is inaccurate. **AGREEMENT STATEMENT** None. Delete this observation **DISAGREEMENT STATEMENT** CHPRC disagrees that the central environmental management organization failed to respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO)	The referenced June 18, 2009 e-mail from the ECO to the NEPA SME does not support the observation. The e-mail was sent specifically to initiate the NEPA process, and the attached environmental activity screening form was provided for its NEPA content. It did not request an evaluation for other environmental requirements. The NEPA review, including necessary cultural and ecological reviews, was initiated in a timely fashion.	CHPRC's request to delete this Observation is rejected. The fundamental question here is did the CHPRC central environmental group respond to the ECO and provide help? If the answer is yes then the next question is what was the extent and form of the help? If the answer is no then the next question is why was no assistance rendered? CHPRC's factual accuracy comments notwithstanding, it is a fact that the ECO stated he received no response to requests for help and

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
100K Environmental Compliance Officer (ECO).	The assessors cannot identify that a timely response was not provided (verbal or otherwise) in response to the referenced August 24, 2009, email from the ECO to the FS&NF Monitoring Manager. **PROPOSED OBSERVATION** None. Delete the Observation.		CHPRC has provided no evidence that suggests otherwise. It is the CHPRC central environmental group's responsibility to find documentation of any response(s) to the ECO's request for its assistance. DOE-RL is under no duty to search for such information beyond those efforts which were made during the course of this assessment (i.e., a request to produce such evidence if it exists). *Due to consolidation of Observations 01 and 02 that originally appeared in the draft Surveillance Report into Finding S-11-EMD-PRC-001-F16, this Observation appears as Observation S-11-EMD-PRC-001-O01 in the final Surveillance Report.*
Observation: S-11-EMD-PRC-001-O04 Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.	CHPRC does not concur that this observation is accurate. This observation is inaccurate. **AGREEMENT STATEMENT** None **DISAGREEMENT STATEMENT** CHPRC **disagrees** with this observation. There is no requirement for the mentioned assessment. Delete this observation **PROPOSED OBSERVATION** None. Delete the Observation. Discussion in report states that "During the Assessment Team's interview with the	A quality assurance (QA) assessment was not completed prior to start of construction, however an assessment was not required. If a QA assessment had been planned and conducted prior to start of work, environmental requirements would have been reviewed only if they were included in the scope of the assessment; e.g. there is no guarantee that the assessment would have included an evaluation of compliance with applicable environmental requirements. The reference for an independent QA Assessment is miss-stated by the authors. During interview with the assessment team, a question was asked about adequate QA support. The	CHPRC's request to delete this Observation is rejected. The assessors have reviewed their notes from the interview with the individual occupying the role of project manager during construction. All three assessors present during the interview agree the project manager stated he requested a QA assessment be done prior to construction and was denied. One assessor's notes state that the project manager was told by the project director that no QA assessment would be undertaken before or during construction of the project. *Due to consolidation of Observations 01 and 02 that originally appeared in the draft Surveillance*

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	individual occupying the role of IUUP Project Manager from November 2009 to April 2010, he stated that he verbally requested that an independent quality assurance inquiry be done of the project prior to start of construction." Factual accuracy review by CHPRC determined that the assessors misunderstood the individual's response to interview questions.	individual being interviewed responded by stating that a request for QA support was initiated via an ICWEA, but the request was not granted. No one is aware of a request for an IA. The project did do a PRB which is discussed in the assessment.	*Report into Finding S-11-EMD-PRC-001-F16, this Observation appears as Observation S-11-EMD-PRC-001-O02 in the final Surveillance Report.*
Observation: S-11-EMD-PRC-001-O05 CHPRC's Project Review Board process failed to evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.	CHPRC does not concur that this observation is accurate. This observation is inaccurate. **AGREEMENT STATEMENT** CHPRC agrees that the PRB process could be improved. **DISAGREEMENT STATEMENT** CHPRC disagrees that the PRB process failed to evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities. On April 7, 2010 a PRB for the 100K IUUP was conducted for work that included "Inside the Fence" activities. The materials presented to the PRB on April 7 contained no mention of applicable environmental or other regulatory requirements. On April 21, 2010 a second PRB was convened to review 100K IUUP work scope not reviewed by the first PRB on April 7. The materials presented on April 21 contained no mention of applicable environmental or other regulatory requirements.		CHPRC's request to delete this Observation is rejected. Without offering reference to any new supporting information, CHPRC first states that it disagrees it failed to evaluate the environmental and fire safety regulatory compliance status before approving construction activities, and then seems to completely contradict this assertion in the paragraph that immediately follows. In that paragraph CHPRC seems to unequivocally admit that no evaluation of either environmental or fire safety compliance status was done at either the April 7, or the April 21 PRBs. RL continues to believe that it would be a rational and useful act for the PRB to use a checklist that evaluates regulatory compliance posture as part of its deliberations, and is surprised that CHPRC is apparently rejecting such an approach. *Due to consolidation of Observations 01 and 02 that originally appeared in the draft Surveillance Report into Finding S-11-EMD-PRC-001-F16, this Observation appears as Observation S-11-*

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	PROPOSED OBSERVATION None. Delete the observation.		*EMD-PRC-001-O03 in the final Surveillance Report.*
Contractor Self-Assessment The CHPRC did not perform a formal self-assessment of the issues at the 100K IUUP that eventually resulted in the CHPRC Senior Management issuing a Stop Work.			Although not raised by CHPRC as an issue, after further consideration it was determined that references to Condition Reports and root cause analysis in the original language of this section was non-substantive and otherwise irrelevant. The language was therefore removed.

Jackson, Dale E

From: Marvin, Marla
Sent: Wednesday, July 20, 2011 1:28 PM
To: Jackson, Dale; Connerly, Jenise
Cc: Weil, Stephen; Botes, Holly
Subject: RE: CHPRC Management Briefing on the 100K IUUP Surveillance

Glad you're still with us, Dale. Survival is key! Let me know if I you need anything.

From: Jackson, Dale
Sent: Wednesday, July 20, 2011 1:12 PM
To: Connerly, Jenise
Cc: Weil, Stephen; Marvin, Marla
Subject: CHPRC Management Briefing on the 100K IUUP Surveillance

Jenise:

I met with and brief members of CHPRC management on the 100K IUUP Surveillance Report earlier this morning. John Lehew, Terry Vaughn, Moses Jaraysi, Richard Engelmann, Steve Smith and Jeff Frey (DOE) were present. Kurt Kehler was absent due to a schedule conflict. The meeting went smoothly and contained no surprises. After review the findings contained in the Report, at the request of Greg Morgan (DOE Nuclear Safety), I pointed out that immediate action (b)(5) I told those present that (b)(5) (b)(5) Mr. Vaughn stated they would address the matter and contact Mr. Morgan by next Monday morning.

At the close of the meeting, they had no questions on the remaining actions (i.e., submission of the results from their factual accuracy analysis, report revision to the extent DOE determines changes are justified, and delivery of a final report through your office). Some comments made suggest to me that (b)(5) (b)(5) (b)(5)

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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From: Morgan, Gregory
Sent: Tuesday, July 26, 2011 2:10 PM
To: Jackson, Dale E
Subject: FW: 100K Entry Into The PISA Process
Attachments: FW: 100 K Water System Nuclear Safety Factual Accuracy Review

Importance: High

FYI

From: Morgan, Gregory
Sent: Tuesday, July 26, 2011 2:10 PM
To: Jackson, Mark
Subject: FW: 100K Entry Into The PISA Process
Importance: High

Mark:

Terry Vaughn and CHPRC have not responded yet on whether there is a USQ regarding excessive water flow and basin overflow.

Ramble says that "I also spoke with Mark Jackson in regard to the RL direction to complete a USQ within 48 hours. Mark is in agreement that anytime we prepare a USQ we need to take whatever time is necessary to do a complete and thorough job."

I agree with them taking the time they need. As you know, I have been raising the issue for several months. Before I reply to them, I need to know, how much time did you allow them to take?

Regards

Greg

From: Vaughn, Terry L
Sent: Tuesday, July 26, 2011 11:18 AM
To: Koch, Michael R; Morgan, Gregory; Chaffee, Gail A; Corey, Ray; Frey, Jeffrey; Dowell, Jonathan; Lehew, John G; Ciucci, John A
Cc: Hiett, Michael; Splett, Dale H; MacAlister, Edward; Spets, James; Gunion, Clark; Jackson, Dale; Williams, John D; Morgan, Calvin E; Kehler, Kurtis L; Brown, Walter R; Connerly, Jenise; Jackson, Mark
Subject: RE: 100K Entry Into The PISA Process
Importance: High

Greg, please let me weigh in on this issue. I was one of the attendees at last week's briefing by Dale. At that meeting (b)(5)

(b)(5)

I apologize for any misunderstanding or confusion over this issue. Feel free to contact me if you have further questions, thanks, Terry.

From: Koch, Michael R

Sent: Tuesday, July 26, 2011 10:59 AM
To: Morgan, Gregory Z.; Chaffee, Gail A
Cc: Hiett, Michael; Splett, Dale H; MacAlister, Edward; Spets, James E.; Gunion, Clark; Jackson, Dale E.; Williams, John D; Morgan, Calvin E; Koch, Michael R; Kehler, Kurtis L; Brown, Walter R; Connerly, Jenise C.; Jackson, Mark W.; Vaughn, Terry L
Subject: RE: 100K Entry Into The PISA Process

Greg,

As a follow up to our phone call.

Calvin Morgan and I are participating in the assessment factual accuracy review. We will respond (b)(5)
(b)(5)

(b)(5)

Our management requested (b)(5)
(b)(5)

Mike Koch

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Tuesday, July 26, 2011 10:31 AM
To: Chaffee, Gail A
Cc: Hiett, Michael; Splett, Dale H; MacAlister, Edward; Spets, James E.; Gunion, Clark; Jackson, Dale E.; Brown, Walter R; Koch, Michael R; Connerly, Jenise C.
Subject: RE: 100K Entry Into The PISA Process

Ms. Chaffee:

As I understand the situation, Finding 12 of the RL draft Surveillance prompted a review for extent of condition.

This review resulted in the identification of three other issues. Any or all of these issues may also become USQs, but we will let the process work through to a conclusion.

HOWEVER, the CHPRC President and Vice Presidents last Wednesday committed to determine whether Finding 12 identified an ongoing USQ, and/or an ongoing violation of 10 CFR 830. They committed to report back to myself as RLs representative within 48 hours.

I have received no such report. It was due last Friday.

When can RL expect a report on the resolution of Finding 12, that there has been no USQ process for possible excess water flow from the new water treatment plant and fire protection system?

Until a (b)(5)

Respectfully,

Gregory Z. Morgan
DOE-RL- AMSE-SED
509-373-2346

From: Splett, Dale H
Sent: Monday, July 25, 2011 8:08 AM
To: Gunion, Clark; Spets, James; MacAlister, Edward
Cc: Hiett, Michael; Morgan, Gregory
Subject: FW: 100K Entry Into The PISA Process

Fyi – this come up late last Thursday. Their five day PISA window has until Wednesday of this week. I will be following this, although this was the first I had heard about it.

The MCO demonstration is still slated to start this morning so Mike and I will be busy on that all week.

Dale Splett, PE
DOE-RL Operations Oversight Division

From: Chaffee, Gail A
Sent: Thursday, July 21, 2011 5:20 PM
To: Splett, Dale H
Subject: FW: 100K Entry Into The PISA Process

While performing the factual accuracy review of the RL 100K assessment, we separately identified that there are three hazardous conditions in our hazards analysis related to the K Basin overflow accident that may not be bounded by the current facility safety basis. Two of these hazardous conditions we have identified may be new initiators of an overflow accident. One of these three identified hazardous conditions may represent a change in frequency from unlikely to anticipated for the existing operational event. The current safety basis identifies the K Basin overflow accident as having an unlikely frequency. The 100 K project entered the PISA process at 10:30 on 7/21/2011.

From: Morgan, Gregory
Sent: Wednesday, July 27, 2011 9:57 AM
To: Jackson, Dale E
Subject: FW: Management Briefing on 100K Surveillance Report

Dale:

This explains many things.

Greg

From: Jackson, Mark
Sent: Monday, July 25, 2011 5:20 PM
To: Morgan, Gregory
Subject: RE: Management Briefing on 100K Surveillance Report

I now understand a bit more. When I talked to Al Ramble last week he mentioned that someone wanted the

(b)(5)

Thanks, Mark

From: Morgan, Gregory
Sent: Monday, July 25, 2011 4:00 PM
To: Jackson, Dale
Cc: Weil, Stephen; Jackson, Mark
Subject: RE: Management Briefing on 100K Surveillance Report

Thank you, Dale.

(b)(5)

However, they have not contacted me with (b)(5) even though I called them. I will be contacting them again.

Regards

Greg

From: Jackson, Dale
Sent: Wednesday, July 20, 2011 12:50 PM
To: Morgan, Gregory
Cc: Weil, Stephen
Subject: Management Briefing on 100K Surveillance Report

Greg:

I met with and brief members of CHPRC management on the 100K IUUP Surveillance Report earlier this morning. John Lehew, Terry Vaughn and several other members of the management team were

present. The meeting went smoothly and contained no surprises. After review the findings contained in the Report, I pointed out that immediate action (b)(5) (b)(5) I told those present that (b)(5) Mr. Vaughn stated they would address the matter and contact you with the results next Monday.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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Jackson, Dale E

From: Morgan, Gregory
Sent: Tuesday, August 02, 2011 9:06 AM
To: Gordon, Roger M
Cc: Jackson, Dale E; Jackson, Mark W
Subject: FW: USQ for Fire protection System
Attachments: 0205-2011 determination (final).pdf; Violation Attachment 2011.doc; Letter Violation 2011 2.doc

Gentlemen:

Dale Jackson points out that I attached an old letter (computers have long memories).

Here is the correct letter, Attachment, and the CHPRC USQ determination done in response to the draft RL Surveillance.

Respectfully,

Greg Morgan

From: Morgan, Gregory
Sent: Monday, August 01, 2011 4:54 PM
To: Gordon, Roger
Cc: Jackson, Mark; Jackson, Dale
Subject: USQ for Fire protection System

Sirs:

As discussed, CHPRC had concluded that there is not a USQ regarding the Replacement Water Treatment Plant, or regarding the Fire protection System.

(b)(5)

As requested, I will work with CHPRC management to resolve these issues.

Respectfully,

Greg Morgan

From: Chaffee, Gail A
Sent: Thursday, July 28, 2011 1:36 PM
To: Morgan, Gregory
Cc: Williams, John D; Koch, Michael R
Subject: RE: As Requested

Signed copy in PDF File

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.Doe.Gov]
Sent: Thursday, July 28, 2011 1:26 PM
To: Chaffee, Gail A
Cc: Williams, John D; Koch, Michael R; Jackson, Mark W.; Jackson, Dale E.; Gordon, Roger
Subject: RE: As Requested

Gail:

Has the USQD been signed? If so, I would like a PDF version.

Based on what I read here, I do not believe we need to meet on this issue.

Thank you.

Greg Morgan

From: Chaffee, Gail A
Sent: Thursday, July 28, 2011 12:31 PM
To: Morgan, Gregory
Cc: Williams, John D; Koch, Michael R
Subject: As Requested
Importance: High

Evaluation of Finding S-11-SED-PRC-006-F12, in
DOE-RL Draft Surveillance S-11-SED-PRC-006.

RL staff has determined that a USQ exists, and that the issue is a serious safety issue.

CHPRC staff was informed of RL concerns several months ago. As recently as June 16, 2011, CHPRC nuclear safety staff committed to provide the USQ Evaluation, but none has been forthcoming. CHPRC President, Vice Presidents, and others were informed of the issue in the briefing on the draft RL Surveillance on July 20, 2011, where a response to Finding 12

> "CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW Basin and releasing radioactive materials, has not been evaluated for USQs"

was requested within 48 hours. The only responses were (1) an assertion that CHPRC would dispute the factual accuracy of Surveillance Finding 12, (2) USQD 205-2011 which concluded there was no USQ, followed by (3) a Potential Inadequacy in the Safety Analysis (PISA) declaration (PISA 0207-2-11) due to increased probability of the overflow accident. USQD 205-2011 and PISA 0207-2011 contradict each other because USQD 205-2011 states that there is not an increased probability of the overflow accident while PISA Determination 0207-2011 states that there is an increased probability of the overflow accident.

The replacement water treatment system and fire protection system are described in Chapter 2 of the Final Safety Analysis Report (FSAR), but are not evaluated in Chapter 3 of the FSAR.

As required by 10 CFR 830 and CHPRC Procedure PRC-PRO-NS-062, there are seven questions to be asked, any one of which would make this situation a USQ.

Question 1: Could the proposed activity or PISA increase the probability of occurrence of an accident previously evaluated in the existing safety basis?

(b)(5)

Question 2: Could the proposed activity or PISA increase the consequences of an accident previously evaluated in the existing safety basis?

(b)(5)

(b)(5)

Regarding Questions 3 and 4, (b)(5)

(b)(5)

Question 5: Could the proposed activity or PISA create the possibility of an accident of a different type than any previously evaluated in the existing safety basis?

(b)(5)

Question 6: Could the proposed activity or PISA create the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the existing safety basis?

(b)(5)

Question 7: Could the proposed activity or PISA reduce a margin of safety?

(b)(5)

With at least four of the seven questions answered "yes", this situation is an Unreviewed Safety Question. Because CHPRC has not declared this to be an Unreviewed Safety Question, RL now declares this to be an Unreviewed Safety Question.

Jackson, Dale E

From: Morgan, Gregory
Sent: Wednesday, August 10, 2011 4:27 PM
To: Weil, Stephen R; Corey, Ray J; Jackson, Dale E; West, Dale C
Cc: Brown, Walter R
Subject: RE: Extension request from Moses Jaraysi
Attachments: RE: 100 K Area IUUP Surveillance Report

Mr. Weil:

(b)(5)

CHPRC then asked for another week, and we allowed it. See the attached email.

The reasons for that additional week are essentially the same as the reasons in their request below, and they said that they would not need any additional extensions.

There is no need to grant this request.

I recommend that they be held to comply with the Contract. If they cannot provide the factual accuracy review in the full month they have had, we should issue the Surveillance without their input.

Respectfully submitted,

Gregory Z. Morgan
DOE-RL-AMSE-SED
373-2345

From: Weil, Stephen
Sent: Wednesday, August 10, 2011 4:03 PM
To: Corey, Ray; Jackson, Dale; West, Dale; Morgan, Gregory
Cc: Brown, Walter (CONTR)
Subject: Extension request from Moses Jaraysi

Ray and Dale:

I got a call from Moses Jaraysi, who said he had been trying to get hold of Dale Jackson for a while (yesterday and today). He is asking for an extension of time for PRC on their factual accuracy review.

Dale has been tied up with a HQ person on issues related to the ISM conference in September and that was probably why he has not called back.

(b)(5)

I said that I would check with Dale (as the lead author) and Ray and get back to him. I did not commit to anything beyond that.

Steve Weil

Environmental Management Division
DOE-RL
Office: (509) 372-0879
Mobile: (509) 438-3743
New Email: Stephen.Weil@rl.doe.gov
(Mail sent to old email (stephen_r_weil@rl.gov) will be forwarded until about July 2011)

Jackson, Dale E

From: Jackson, Dale
Sent: Monday, July 11, 2011 12:07 PM
To: Jaraysi, Moses
Cc: Vaughn, Terry L; Corey, Ray J; Weil, Stephen R; Cawrse, Allan E; Connerly, Jenise C; Franco, Jose R (Joe); Teynor, Thomas K; Smith, Stephen T
Subject: RE: 100 K Area IUUP Surveillance Report

Good afternoon Moses:

Thanks for your prompt response.

Your request for an extension of the time period for factual accuracy review is not unreasonable and is approved. Please keep in mind though, that your review is for factual accuracy only, and CHPRC's efforts should be limited to that purpose.

With regard to finalizing the report, DOE-RL will generally proceed in accord with its RIMS procedures that guide performance of surveillances. While we believe that CHPRC's participation in a surveillance has produced a more thorough and accurate product than might otherwise have been possible, it does not modify the RIMS procedures. The actions that remain will include DOE-RL receiving any comments regarding factual accuracy content of the draft that CHPRC may have, if any, and carefully reviewing those comments. DOE-RL will correct any factual errors in the draft report that it finds justified and prepare a final version of the report. The report will then be formally transmitted to CHPRC by the cognizant DOE-RL contracting officer along with any further information or instructions that are deemed necessary.

I hope this resolves some of your questions, and look forward to hearing when CHPRC representatives will be available for the briefing you have accepted. With this in mind, please keep in mind that providing the requested briefing in an expeditious manner is a high priority.

Sincerely,
Dale Jackson
Environmental Management Division
DOE Richland Operation Office
509.376.8086

-----Original Message-----
From: Jaraysi, Moses
Sent: Monday, July 11, 2011 8:43 AM
To: Jackson, Dale
Cc: Vaughn, Terry L; Corey, Ray; Weil, Stephen; Cawrse, Allan E; Connerly, Jenise; Franco, Jose; Teynor, Thomas; Smith, Stephen T
Subject: RE: 100 K Area IUUP Surveillance Report

Thank you very much for the invitation Dale.

I will make sure that the appropriate managers and technical staff are invited.

I will work with you on the date and time. In the mean time, I have two requests I would like to make:

(b)(5)

I am hoping that this is acceptable to you, and assure you that my goal is to give this assessment its appropriate value and attention.

MJ
509-438-1596

-----Original Message-----
From: Jackson, Dale [mailto:Dale.Jackson@rl.doe.gov]
Sent: Friday, July 08, 2011 2:07 PM
To: Jaraysi, Moses
Cc: Weil, Stephen; Connerly, Jenise C.; Corey, Ray; Franco, Jose; Teynor, Thomas
Subject: 100 K Area IUUP Surveillance Report

Good afternoon Moses:

RL is ready to release its draft 100 K Area Infra and Utilities Upgrade Project Surveillance Report. As is customary, we would like to informally present the draft report to CHPRC and provide a short briefing (probably no longer than 30 minutes) on its content to appropriate members of CHPRC's management staff. In this case, we would like to brief yourself, your principal fire protection official (I believe this may be a gentleman named Ben Johnson), and your principal nuclear safety official (don't know this identity). If there are others you think should attend, they would also be welcome. Please understand that the briefing is not a mandatory step, and CHPRC may decline the briefing at its sole discretion.

RL's applicable RIMS procedure suggests that after we deliver the draft report and provide the short briefing (unless declined), CHPRC be afforded one week to perform a factual accuracy review and provide any comments it might have. However, as the draft is lengthy and somewhat complex, RL will entertain any reasonable request for extension of the one week review period if need arises. After completing this process, the Report will be finalized and formally transmitted to CHPRC through RL's Contracting Officer.

I am not in the office this afternoon, but if you will respond either by e-mail or phone call at your earliest convenience, I'd like your assistance in identifying the additional CHPRC representatives you believe should attend the briefing, and in selecting a meeting time and date. I realize the CHPRC is anxious to receive the draft, and want to assure that RL also desires to deliver the draft, provide a briefing, and otherwise finalize this Surveillance as expeditiously as possible. With this thought in mind, I am hopeful that we can arrange a meeting sometime next week. I look forward to hearing from you.

Regards,
Dale Jackson
Environmental Management Division
DOE Richland Operation Office

509.376.8086

Jackson, Dale E

From:	Jackson, Dale		
Sent:	Monday, August 29, 2011 12:24 PM		
To:	Corey, Ray J		
Subject:	CHPRC's Factual Accuracy Analysis Report		
Importance:	High		
Tracking:	**Recipient**	**Delivery**	**Read**
	Corey, Ray J	Delivered: 8/29/2011 12:24 PM	Read: 8/29/2011 12:28 PM

Ray:

It appears that Mr. Jayarsi is attempting to schedule a briefing for you and I tomorrow morning at 11:00 am on CHPRC's final Factual Accuracy Analysis Report. He proposes to deliver the report at that same time. I would prefer to either have an advanced copy of the Report, and a day to review it along with the other surveillance team SMEs, or in the alternative, invite the other SME team members to hear the briefing. If we proceed as Mr. Jayarsi proposes, it is almost certain that we will need yet another meeting to clarify questions after the other team members have had a chance to view the Report, and hear the briefing content second hand based on your and my notes. What do you think?

Respectfully,

Dale Jackson
DOE-RL EMD
(509) 376.8086

2011 Integrated Safety Management Workshop
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Learn more about it at: http://www.ism2011.com/

Jackson, Dale E

From: Jackson, Dale E
Sent: Wednesday, November 30, 2011 2:15 PM
To: Brown, Walter R; Morgan, Gregory Z; West, Dale C
Cc: Weil, Stephen R
Subject: 100K Surveillance Report - OCC Approved Version
Attachments: S-11-EMD-PRC-001 11302011 PART 1.doc

Importance: High
Sensitivity: Confidential

Tracking:

Recipient	Read
Brown, Walter R	Read: 11/30/2011 2:55 PM
Morgan, Gregory Z	Read: 11/30/2011 2:29 PM
West, Dale C	Read: 12/5/2011 7:50 AM
Weil, Stephen R	Read: 11/30/2011 5:10 PM

Gents:

Enclosed is a copy of the 100 K Report that has been fully approved by OCC. I have sent a copy to Amy Nelson for entry into ESTARS and resumption of the concurrence process at the next level. With any luck, this might still go out this week.

Regards,
Dale Jackson

Department of Energy
Richland Operations Office
Surveillance Report

Divisions: Environmental Management Division (EMD)
Safety and Engineering Division (SED)

Surveillance Team Members: Dale E. Jackson, RL-EMD, Physical Scientist
Dale C. West, RL-SED, Fire Protection Engineer
Gregory Z. Morgan, RL-SED, Nuclear Safety Engineer
Clifford Ashley, RL-SED, Electrical Safety (Retired)
David T. Evans, PAI Corp (DOE GSSC Contractor), Team Member
Walter R. Brown, CHPRC Environmental QA, Team Member

Surveillance Number: S-11-EMD-PRC-001

Date Field Work Completed: May 2, 2011 Date Initial Report Completed: June 25, 2011

Contractor: CH2M HILL Plateau Remediation Company

Facility: 100K Water Treatment Facility and Fire Water Distribution System

Title: Review of the 100K Infrastructure Utilities Upgrade Project

Guides: FPS 12.2, Fire Protection and Prevention
ISM 5.4, Continuous Improvement
OPS 9.9, Lockouts and Tagouts
OPS 9.6, Investigation of Abnormal Events and Occurrence Reporting

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Table of Contents - S-11-EMD-PRC-001

Surveillance Scope: 1

Surveillance Summary: 1

Surveillance Results: 1

Concern: S-11-EMD-PRC-001-C01 1
The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.

Finding: S-11-EMD-PRC-001-F01 2
CHPRC did not apply to the Washington State Department of Health for approvals required by the Washington Administrative Code prior to commencing construction of the 100K IUUP Potable Water System.

Finding: S-11-EMD-PRC-001-F02 12
CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act prior to commencing construction of the 100K IUUP facilities.

Finding: S-11-EMD-PRC-001-F03 13
Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.

Finding: S-11-EMD-PRC-001-F04 17
CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan and Field Execution Schedule.

Finding: S-11-EMD-PRC-001-F05 19
CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.

Finding: S-11-EMD-PRC-001-F06 22
CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

Finding: S-11-EMD-PRC-001-F07 24
The design review process applied to 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.

Finding: S-11-EMD-PRC-001-F08 ..... **30**
Construction permits were not obtained from the Hanford Fire Marshall's Office by the 100K IUUP prior to commencing construction.

Finding: S-11-EMD-PRC-001-F09 ..... **32**
The 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction.

Finding: S-11-EMD-PRC-001-F10 ..... **34**
CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer/Deputy Fire Marshal.

Finding: S-11-EMD-PRC-001-F11 ..... **35**
CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question. The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.

Finding: S-11-EMD-PRC-001-F12 ..... **38**
CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Finding: S-11-EMD-PRC-001-F13 ..... **40**
CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

Finding: S-11-EMD-PRC-001-F14 ..... **42**
CHPRC did not meet contractual requirements requiring the maintenance of an active Memorandum of Understanding between CHPRC and the Hanford Fire Marshal's Office.

Finding: S-11-EMD-PRC-001-F15 ..... **43**
CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis and provided adequate Lockout/Tagout notification and briefings.

Observation: S-11-EMD-PRC-001-O01 ..... **45**
CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer.

Observation: S-11-EMD-PRC-001-O02 ..... **45**
Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

Observation: S-11-EMD-PRC-001-O03 ..... **46**
CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

Observation: S-11-EMD-PRC-001-O04 ..... **47**
After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorized the event.

Contractor Self-Assessment **49**

INDEX OF EXHIBITS **50**

Surveillance Scope:

The objective of this surveillance was to evaluate the performance of CH2M HILL Plateau Remediation Company (herein after "CHPRC") Infrastructure Utilities Upgrade Project (herein after "100K IUUP" or "Project") fire water and drinking water systems subproject compliance with contractual requirements, State and Federal environmental requirements, U.S. Department of Energy (DOE) requirements, DOE Richland Operations Office (RL) requirements, other applicable codes and standards, and CHPRC policies and procedures.

Surveillance Summary:

This surveillance reveals that CHPRC did not meet all requirements applicable to 100K IUUP activities. Multiple examples of not meeting requirements involving several different disciplines were noted. The surveillance activities resulted in the identification of one Concern, fifteen Findings, and four Observations. The Table of Content of this Surveillance Report summarizes the nature of each finding and observation.

Surveillance Results:

Concern: S-11-EMD-PRC-001-C01

The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.

Discussion:

CHPRC did not meet several contractual requirements during the construction of the 100K Water Treatment Facility and the Fire and Potable Water Distribution System. CHPRC procedures and policies did not fully integrate environmental and fire protection program requirements into project design and construction. CHPRC work management procedures that were used to initiate, implement, and perform work did not adequately identify and integrate environmental and fire protection contractual requirements. This reveals a weakness in the implementation of the CHPRC Integrated Safety Management System (ISMS) Program for the 100K IUUP. The CHPRC engineering program, project management, construction, project control, and work management, did not fully integrate contractual requirements into their activities. Some contractual requirements identified in CHRPC Procedures and Policies were not followed by the 100K IUUP.

The objective of ISMS is to incorporate environment, safety, and health into management and work practices at all levels, addressing all types of work and all types of hazards to ensure safety

for the workers, the public, and the environment. Line management is responsible and accountable for safety, safety management, and the integration of safety into business and operations at a site.

It is noteworthy that a similar Concern was stated in the previous RL *Assessment of the CH2M Hill Plateau Remediation Company Fire Protection Program* (A-10-SED-PRC-23) of May 27, 2010, which stated "CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated FPP requirements. CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." The Assessment was transmitted to the Contractor by RL letter 10-SED-0128 of August 19, 2010.

Findings 1 through 15 support this concern.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F01

CHPRC did not apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.

Requirement(s):

1. RCW Chapter 70.119A, *Public Water Systems — Penalties and Compliance*

2. WAC Chapter 246-290, *Group A Public Water Supplies*

3. DOE O 226.1A, *Implementation of Department of Energy Oversight Policy,* and *Contractor Requirements Document* (CRD) attached thereto.

4. DOE M 231.1-1A, Chg 2 (Supp Rev 1), *Environment, Safety, and Health Reporting Manual,* and CRD attached thereto.

5. DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

6. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

7. DOE Contract Number DE-AC06-08RL14788, Section H.19, *Environmental Responsibility*, and Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

8. PRC-PRO-EP-15333, *Environmental Protection Processes*

9. PRC-RD-EP-15332, *Environmental Protection Requirements*

10. PRC-PRO-EP-15335, *Environmental Permitting and Documentation Preparation*

11. PRC-POL-EP-5054, *CH2MHILL Plateau Remediation Company Environmental Policy*

Guidance:

DOH 331-123 (Rev. 12/09), *Water System Design Manual*

Discussion:

Group A public drinking water systems in the State of Washington are subject to regulation pursuant to WAC Chapter 246-290.[1] More specifically, relevant regulations state:

> The project report is a written document that describes why a project is being proposed and includes engineering design calculations showing how the project will meet its objectives. . . . Purveyors shall submit project reports to the department and obtain written approval prior to installation or construction of any new water system, water system extension, or improvement. . . .

WAC 246-290-110(1), -110(2). The regulations also state:

> Construction documents shall identify how specific projects will be constructed while satisfying the requirements and conditions established in the project report and/or the water system plan. . . . Purveyors shall submit construction documents to the department and obtain written approval prior to construction of any new water system, or water system extension or improvement.

WAC 246-290-120(1), -120(2).

On May 6, 2009 the "100K Infrastructure Project Charter Workshop," was held to define the scope, objectives, and deliverables of the 100K IUUP. The workshop was also intended to define the schedule, cost estimate basis, roles and responsibilities, key interfaces, and requirements necessary to successfully complete the Project. Exhibits 2, 3, 4, 5, and 6.

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[1] The 100K IUUP provided upgrades to infrastructure that were necessary to support a variety of ongoing response actions being performed in the 100K Area pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC § 9601, et seq. The Project may have been entitled to exemption from Federal, State or local laws requiring permits or approvals if the Project had elected to proceed under CERCLA and such a decision had been incorporated in a CERCLA Record of Decision or other decision document. *See* 42 USC § 121(e).

The project scope adopted as a result of the Workshop Study for the 100K IUUP included, among other things, construction of a cross site raw water transfer line, a new Group A public drinking water treatment plant and water delivery lines, installation of a new fire water pumping system and new fire water delivery lines, and major modifications of fire water mains in the vicinity of the 105K W Reactor.

DOE has recognized, and has instructed its contractors since at least 1995, that WDOH Drinking Water Regulations are applicable to public drinking water systems operated on the Hanford Site.[2] This includes regulations requiring approval of drinking water system designs and construction specifications prior to commencement of construction activities. CHPRC is expressly obligated by its contract to comply with the requirements of WAC Chapter 246-290. *See* Contract Number DE-AC06-08RL14788, Section H.19, and Attachment J.2, Tables J.2.1 through J.2.8.

In June 2009, CHPRC's 100K Area ECO began an analysis to identify environmental regulatory requirements that would apply to the 100K IUUP by completing an Environmental Activity Screening (EAS) form.[3] CHPRC environmental protection procedures require that: ". . . [b]efore starting any . . . [n]ew construction projects . . . [e]xcavations or disturbances to soil . . . " a cognizant ECO must perform " . . . an environmental review and documents [sic] it using an EAS form . . . ." PRC-PRO-EP-15333, Sec. 5.3.[4] Because a drinking water system was involved in the project, the same procedures required the ECO to evaluate and " . . . determine permitting needs and develop an application for an operating permit . . . in accordance with WAC 246-290 . . . . " *Id.* Sec. 5.7. The EAS form completed by the 100K Area ECO identified that the project involved construction of a public drinking water system subject to State regulations, and would also require a determination (sometimes referred to as a clearance) pursuant to NEPA regulations. Exhibit 7.

On August 24, 2009, the 100K Area ECO again considered 100K IUUP permitting needs. On that date, the ECO sent an e-mail titled "100K Follow Up" to the EP Manager in CHPRC's central environmental organization. The e-mail quoted the requirements of the then existing

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[2] On April 11, 1995 the Director of DOE-RL's Site Infrastructure Division sent a letter to the President of Westinghouse Hanford Company stating: "The U.S. Department of Energy, Richland Operations Office (RL) is the owner of several Group A and Group B water systems, and Westinghouse Hanford Company and ICF Kaiser Hanford Company operate the water systems for RL. The purpose of this letter is to clearly state that the water systems on the Hanford Site are subject to the State of Washington Department of Health Drinking Water Regulations under Washington Administrative Code and the water systems will operate in accordance with these regulations. These regulations apply to the operation of the drinking water systems as well as to construction/modification on any system." Exhibit 1.

Since that time all Group A and B water systems on the Hanford Site have been required to be operated and constructed/modified in compliance with the above noted Washington State Department of Health regulations. This has included the system that was constructed and maintained at the 100K Area in the years immediately following the issuance of the above noted letter, and the construction and operation of the upgraded system just recently completed.

[3] About the time the EAS form was completed, the former 100K Area ECO (now the 100K Sludge Treatment Project (STP) ECO) provided the 100K IUUP Potable Water Project Engineer, and the 100K Area ECO, the working file of the existing 100K water system. This file contained the letter referred to in footnote 1, and most, if not all, of the existing documentation and historical information on the 100K Area water system, including numerous correspondence exchanges with the WDOH over the years concerning that system. *See* 100K Area water system documents from April 1995-June 2002 (STP ECO's files).

[4] Reference is to PRC-PRO-EP-15333, version dated: June 29, 2010.

PRC-PRO-EP-15333, Sec. 5.7, and requested assistance in meeting the specified requirements. Exhibit 8. During an interview, the ECO stated that his e-mail was not responded to. The assessment team requested, but was not provided any information contradicting the ECO's statement.

On October 6, 2009 CHPRC met with WDOH officials at that agency's office in Spokane, Washington. The parties discussed the permitting requirements to install a new water treatment plant at 100K Area to replace the then existing water system, and finalizing the preferred method to dispose of the filter backwash water that would be generated by the new water plant. Attendees at this meeting were the 100K Area Water Purveyor, RL Site Infrastructure Representative, ARES Corporation engineer, 100K IUUP Potable Water Project Engineer, and the 100K Area ECO. Exhibit 9. The following day (October 7, 2009) the RL Site Infrastructure Representative who attended the meeting wrote an e-mail message to the RL project representative opining that the meeting went "very well" and stating that: "Your contractor staff were very well organized, well spoken and professional." Exhibit 10.

During the fall of 2009, planning for the 100K IUUP continued. On November 9, 2009, the 100K IUUP Construction Manager sent an e-mail message "Subject: Draft SOW for 100K Water Infrastructure Project," to numerous individuals stating that:

> The PRC-PRO-AC-123 Functional & Project Concurrence Checklist has identified you as a potential required reviewer/SME of this SOW due to content of the work scope. Please review and provide comments. The Submittal Register is being developed, please identify potential submittal requirements. I am requesting comments be returned to me 11/16/09. Also, please identify if you will require approval signature on the final SOW.

Exhibit 11 and Exhibit 12 "Attachment 5 Functional & Project Concurrence Checklist."

Although the Checklist contains a question regarding whether "the service" involves "Ecology, Department of Health, or EPA requirements, investigations, or remediation," in response the CHPRC EP Manager provided "Yes" in the Applicability section of the form and "No Comment" in the Project Contact/Reviewer section of the checklist. Subsequently, on December 21, 2009, the 100K IUUP Construction Manager sent an e-mail message to the 100K IUUP Controls Clerk stating: "All SME approvals have been received and all comments have been incorporated into the SOW-Scott Story." Exhibit 13.

On December 16, 2009, the 100K IUUP Potable Water Project Engineer wrote an e-mail message to the 100K Area ECO and copying the 100K IUUP Project Manager, Project Director, and Project Construction Manager, asking permission to discuss: " . . . a potential risk related to the Department of Health permitting process . . . " and seeking assistance in the matter. The message also stated: ". . . a project report will need to be submitted and approved by the Department of Health <u>prior to construction</u> of the water system (per WAC 246-290-110) . . . . " Exhibit 14.

The e-mail goes on to explain:

> The purpose of contacting you and potentially . . . [the 100K D&D Project Environmental Director] is to determine if the environmental group has any issue with the 100K project moving forward with this approach. If so, please contact the project management team . . . [100K IUUP Project Manager, Project Director, and Project Construction Manager] to discuss the issue further.

Id.

Several minutes later the ECO forwarded the message to the D&D Project Environmental Director requesting her assistance in this matter, and copied the Project Construction Manager, Construction Manager, Project Director, Project Engineer, and EP water subject matter expert.[5] Exhibit 15.

On January 11, 2010 the President and Chief Executive Officer of CHPRC sent a letter to Mr. M.D. Wilson, WDOH Regional Engineer titled, "Request For Waiver Of Pilot Study For New 100k Potable Water Facility." Accompanying this letter was an attachment with documentation supporting a waiver of pilot testing requirements of the PALL potable water treatment system proposed to be installed at the 100K Area. The conclusion of the attachment contains the following statement:

> A project report meeting the requirements of WAC 246-290-110, and tailored to fit the Hanford Site context, will be submitted to you as soon as the required information is obtained/developed and in advance of construction of the new 100K Potable Water Facility. Preliminarily, we expect that this will occur in the February 2010 timeframe. The project report will also include a section addressing the scope, protocols, and sampling/monitoring requirements associated with the Operational Testing phase introduced above.

Exhibit 16.

On January 28, 2010 CHPRC issued a letter to Watts Construction, Inc. for the "100K River Water Isolation Project Import Water Line Notice to Proceed." This letter stated that all work was to be performed under this task no later than June 30, 2010 and to notify the CHPRC Contracts Office if that deadline could not be achieved. Exhibit 17.

On February 17, 2010, Mr. Wilson of WDOH wrote a letter to the CHPRC 100K Area Potable Water Engineer with responses to the CHPRC submission of January 11, 2010 in which he stated:

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[5] No written response to this e-mail has been provided, although the surveillance team requested that the D&D Project Environmental Director search her files and disclose any response that she may have retained.

> As outlined in your request, a project report, meeting the requirements of WAC 246-290-110, will be submitted in advance of the construction documents and will include the scope, protocols, and sampling/monitoring requirements for the testing of the full-scale facility. This project report shall include the rational for selecting the Pall [sic] membrane.

Exhibit 18.

On March 16, 2010, the 100K Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP.[6] The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." This permit was signed by, among others, the Design Authority/Technical Representative, ECO, Water Utilities Representative and the Facility/System Owner. Exhibit 19.

On April 7, 2010 a CHPRC Contracting Officer, sent a letter to George A. Grant, Inc. regarding "Contract Number 36534-31 ARRA-Potable Water Treatment Facility Contract Award Documents Transmittal." The purpose of the letter was to formally authorize George A. Grant, Inc. to proceed with the work scope defined as "ARRA – Potable Water Treatment Facility." The letter also stated that "Construction work shall be complete by July 23, 2010." Exhibit 20.

Also on April 7, 2010 and again on April 21, a Project Review Board (PRB) for the 100K IUUP was convened and evaluated the Project's readiness to proceed. Materials presented to the PRBs contained no mention of applicable regulatory requirements. Exhibits 55 and 57. Actual construction activities on the potable and fire water lines portion of the project inside 100K Area began on April 13, 2010. Exhibit 21. Construction on the Import Raw Water Line (outside of the fence) began on April 28, 2010. Exhibit 22. Construction on the Potable Water Treatment Facility by Grant Construction began on May 14, 2010. Exhibit 23.

On May 18, 2010, CHPRC's EP & SP Vice President and members of his staff travelled to Spokane, Washington to meet with WDOH and discuss water system construction in Hanford's 200 Area that had commenced without WDOH approvals. While in route, the EP & SP Vice President was contacted by the 100K IUPP Potable Water Project Engineer and was informed that work had begun on the 100K Area's new potable water delivery and treatment system prior to obtaining written approval from WDOH. He was also informed that the Project Report and construction documents required by regulations had not yet been completed and sent to WDOH. Upon learning this information, the CHPRC EP & SP Vice President advised 100K IUUP management to immediately issue a STOP WORK order and the Project was halted.

Upon arriving in Spokane later that morning, the EP & SP Vice President explained that CHPRC had requested the meeting that day with WDOH "in the interest of developing a better working relationship." According to the Spokane meeting summary, later prepared by the CHPRC EP

[6] While the ECO signed the Excavation Permit on March 16, 2011, it did not become effective until March 18, 2011 when all other required signatures had been secured.

Environmental Compliance Manager, discussion then followed concerning the use of the PALL Membrane Filter Technology, appropriate content of a project report, and "General Discussion."

Based on meeting summary notes, WDOH reiterated that while the PALL system is considered alternative filtration technology, WDOH was comfortable with the technology based on its use elsewhere in the State. WDOH then discussed the requirements for a project report and indicated they were expecting the Project Report for their review and approval. "CHPRC noted [to WDOH] that "some construction" was initiated prior to formal approval." Exhibit 24. CHPRC then asked for clarification about water purveyor responsibilities and how WDOH "would like to see roles and responsibilities implemented at a large DOE site with multiple drinking water systems and contractors." *Id.*

There was also some discussion about what constitutes the "commencement" of construction. WDOH confirmed that while construction is not defined it is intended to mean to "build or install any component that is part of the drinking water system" and that "WAC regulations do not allow for construction prior to written approval from WDOH." *Id.* WDOH further advised CHPRC that if construction began before a project report was approved, it would be "assuming risks, including the risk of needing to remove a component that is not approved in the project report. *Id.* WDOH policy prohibiting construction prior to obtaining required approvals is clear in official documents. WAC 246-290-110(2) and DOH 331-123 (Rev. 12/09), *Water System Design Manual*, Sections 2.1 and 3.1. Statements of the WDOH Regional Engineer made during this meeting are also documented in an October 19, 2010[7] CHPRC Root Cause Analysis Report which states:

> CHPRC Environmental Protection Vice President . . . and Environmental Director . . . met with WDOH on May 18, 2010. Results of meeting were that even though in the past, WDOH informally allowed construction of a water system to commence prior to formal receipt of approvals for the Project Report, per WAC 244-290-110(2), [sic] approval must be received prior to installation or construction of a water system. Therefore, noncompliance with WAC 246-290-110(2) had occurred.

Exhibit 25 at p.16.

During the return trip on May 18, 2010 to the Hanford Site, the CHPRC EP and SP Vice President contacted the 100K IUUP Project Manager and reported the results of the meeting with WDOH. 100K IUUP personnel then met and a decision was made to restart construction on the water delivery and treatment system. Later that day, the 100K IUUP Project Manager wrote an e-mail message to the CHPRC D&D Vice President copying the 100K IUUP Project Director, D&D Project Environmental Director, and the 100K IUUP Water Project Engineer giving them a brief history and status of the Project. The e-mail states in part:

[7] The Report date is listed as October 19, 2010, but the last approval signature is November 2, 2010, suggesting the latter date is that of the Report's adoption.

> . . . State Code WAC 246-290-110 requires that a project report to be [sic] submitted prior to water system construction, expansion, or improvement. . . . [W]e are not compliant with requirement WAC 246-290-110.

Exhibit 26. The message also states:

> Following CHPRC senior management's meeting earlier today with DOH, we have been directed to continue with our construction activities. Whereas it is apparent that DOH may not be fully pleased with commencing construction prior to the receipt and concurrence with the project report, it is not a critical misstep. Therefore, at this time we will thoroughly review all of our project requirements, work to submit our project report as early as possible, and engage DOH further on our project status.

Id.

In the interviews conducted with the 100K IUUP Project Manager, he stated his recollection that a teleconference was conducted on or about May 19, 2010 involving himself, the CHPRC President and CEO, CHPRC D&D Vice President, and the 100K IUUP Project Director concerning the future direction of the Project. At the conclusion of the teleconference the participants jointly decided to continue with construction activities on the potable water delivery system even though required WDOH approvals had not been obtained. He also stated that this decision was unilateral, as no approval of this decision was sought from any DOE representative.

On June 1, 2010, CHPRC submitted the "Project Report For 100K Potable Water Facility" to the WDOH for its review and approval. Exhibit 27. In the two weeks immediately following the meeting on May 18, 2010 with WDOH, the CHPRC EP group conducted an analysis of the applicable WAC potable water regulations with respect to fire system applicability. These activities resulted in the CHPRC EP and SP Vice President sending an e-mail message on June 2, 2010, to the CHPRC President and CEO, CHPRC D&D Vice President, and the 100K IUUP Project Director concerning the fire system applicability issue. This message states, in relevant part:

> Based on the review below, we can confirm that the Fire System is <u>not</u> under [W]DOH's authority. There are parts of this system that have dual purpose (both potable water and Fire System), those have to comply with the Safe Drinking Water regulations. This does not change our path forward as discussed yesterday. We need to get this Project Report (permit) into DOH's hands as soon as possible and within a week should be talking to [W]DOH in person. In the mean time we can go ahead with the Fire System installation (including the building) but should slow down on the drinking water system, until we have [W]DOH's approval.

Exhibit 28.

In the interviews conducted with the 100K IUUP Project Director and the Project Manager, when asked what the phrase "slow down on the drinking water system until we have [W]DOH's approval" meant to each of them, they both stated they didn't know, and acknowledged that construction continued.

On June 5, 2010, the CHPRC 100K IUUP Project Manager requested that the CHPRC 100K IUUP Potable Water Project Engineer contact the WDOH Regional Engineer to arrange a time to meet with him to discuss the recently submitted Project Report. According to a June 7, 2010 e-mail sent by the CHPRC 100K IUUP Potable Water Project Engineer to the 100K IUUP Project Director (copying the CHPRC D&D Vice President, CHPRC EP Director, CHPRC D&D Environmental Director, and the 100K IUUP Project Manager) the WDOH Regional Engineer did not see a need for a meeting until after he and a colleague had had time to review the Project Report. This e-mail also addresses the ARRA funding nature of the Project stating:

> Due to the fact that the 100K Infrastructure project is funded by the American Recovery and Reinvestment Act (ARRA), CHPRC is moving forward with certain activities in order to meet the aggressive schedule requirements. I stated the 100K project is moving forward with site preparatory work for the 750,000 gallon dual use water tank, foundation work and underground piping for the water treatment facility building, installation of the fire and potable water system with approximately 25% of the fire main and 20% of the potable water distribution system already installed. Mr. Wilson explained that CHPRC construction activities are being performed at risk. Based upon the review of the project report and construction documents, the Department of Health may request changes to the system and those would be at project cost. It is Department of Health's expectation that the changes would be made by CHPRC to correct any outstanding issues and issuance of the final permit.

Exhibit 29. The Assessment Team asked the CHPRC IUUP Project Potable Water Engineer if the WDOH Project Engineer noted above had supplied any written confirmation of the content and understandings contained in the above e-mail. He told the Assessment Team he had not received any such confirmation from the WDOH Regional Engineer.

On June 16, 2010, the WDOH Regional Engineer wrote back to the 100K IUUP Potable Water Project Engineer acknowledging receipt of the report and assigning a project report tracking number. Exhibit 30. The following week the 100K IUUP Project Manager submitted to WDOH construction documents (drawings and specifications) for the following components of the water delivery and treatment system: 1) 100K Area Water Line; and Water Filtration Drawings, 2) 100K Area Water Treatment Facility Plan Drawings, 3) 100K Export Water Line Drawings, 4) Construction Specification for 100K Fire Protection and Water Lines, 5) Construction Specification for 100K Water Export Line, 6) Construction Specification for 100K Water Line

and Filtration System, 7) Procurement Specification for Water Storage Tank, 8) Procurement Specification for Microfiltration System. Exhibit 31.

On July 8, 2010, the WDOH sent its formal response to the submission of the Project Report addressed to the 100K IUUP Potable Water Project Engineer. This letter provided comments to the Project Report and addressed the timing of work on the Project vis-à-vis formal written approval by WDOH. Paragraph 8 of this letter states:

> The schedule indicates that some potable water components have been or are being installed. Please note that anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service [WAC246-290-050(7)], and may be required to expose system components for our inspection, at their expense. DOH may be unable to accept any component that is installed or constructed prior to approval.

Exhibit 32.

The Assessment Team conducted interviews with the 100K IUUP Potable Water Project Engineer and the CHPRC D&D Environmental Director. Both of these individuals stated that there had been verbal communications between the WDOH Regional Engineer and the 100K IUUP Potable Water Engineer on the issue of construction prior to WDOH approval. These communications were said to have occurred on or about July 8, 2010 and that the WDOH Regional Engineer had told the 100K IUUP Potable Water Engineer that the warning language contained in paragraph 8 of the July 8, 2010 letter from WDOH to CHPRC was "standard language" that WDOH was required to put in the letter. However, the warning language notwithstanding, WDOH reported it was satisfied with how the Project was progressing and the communications that were occurring between CHPRC staff and the WDOH. The CHPRC D&D Environmental Manager told the Assessment Team members she believed she saw, or possessed, an e-mail from the WDOH Regional Engineer memorializing this understanding that WDOH would not bring an enforcement action. She told the Assessment Team she believed she might be able to produce and deliver that e-mail. However, to date, she has not provided such an e-mail to the Assessment Team.[8]

On July 22, 2010 WDOH acknowledged receipt on July 1, 2010 of the construction documents that had been sent to WDOH by CHPRC on June 23, 2010. Exhibit 33. Also on July 22, 2010 the 100K IUUP Project Manager sent a letter to the WDOH Regional Engineer acknowledging CHPRC's receipt of WDOH's comments on the Project Report "dated June 8, 2010 and discussed with WDOH in subsequent conversations on July 8, 2010." This letter then responds to WDOH's comments as enumerated by WDOH. Under comment #8 about early construction

[8] A significant number of CHPRC employees stated that no violation of regulatory requirements had occurred as CHPRC had WDOH staff's verbal permission to start construction without normally required formal approvals, and that no enforcement action would occur. Any WDOH representation notwithstanding, persons holding or needing a permit have an absolute duty to comply with permit requirements. This duty remains regardless of oral or written representations by the permitting agency allegedly excusing compliance with permit requirements.

penalties, noted in the preceding paragraph of this report, the response is, "Comment noted." Exhibit 34.

On August 3, 2010 WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer with its comments concerning the "new membrane facility." Exhibit 35. Then, on August 5, 2010, WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer approving the Project Report received June 3, 2010. Exhibit 36. Finally, on September 15, 2010 WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer approving the construction documents received on July 1, 2010. Exhibit 37. Construction began on April 14, 2010. The WDOH approval to proceed to construction was not obtained until 155 days after the start of construction.

On January 27, 2011 the 100K IUUP Project Manager sent the Operational Performance Testing Report and associated attachments to WDOH for its review and approval. Exhibit 38. In response, on February 1, 2011, WDOH sent a letter addressed to the 100K IUUP Project Manager acknowledging receipt of the Operational Performance Testing Report. Exhibit 39. On February 18, 2011 WDOH sent its approval of the Operational Performance Testing Report and associated attachments which it had received on August 10, 2010 and January 27, 2011.[9] Exhibit 40. On March 10, 2011 WDOH again wrote to the 100K IUUP Project Manager acknowledging its receipt of the Operation and Maintenance Manual. Exhibit 41. Five days later the WDOH Regional Engineer wrote an e-mail addressed to the 100K IUUP Potable Water Project Engineer and the CHPRC 100K Area Water Purveyor which states: "O & M Manual Review (sic) We completed our review of the O&M manual that was received in this office on March 4, 2011. I have two comments, but nothing that will prevent the start-up of the new membrane WTP." Exhibit 42.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F02

CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of the100K IUUP facilities.

Requirement(s):

1. National Environmental Policy Act, 42 U.S.C.A. § 4321, et seq.

2. 10 CFR 1021, *National Environmental Policy Act Implementing Procedures*

[9] This letter incorrectly states that WDOH received some of these documents on January 27, 2010. This is inaccurate as the subject documents had not been generated by that date. Therefore WDOH must be referring to the Operational Performance and Testing Report submitted January 27, 2011 not January 27, 2010.

3. DOE Contract No. DE-AC06-08RL14788, Sec. H.19 (a), and Attachment J.2, Table J.2.1.

4. PRC-PRO-EP-15333, *Environmental Protection Processes*

5. PRC-RD-EP-15332, *Environmental Protection Requirements*

Discussion:

On June 18, 2009 the100K Area Environmental Compliance Officer (ECO), sent an e-mail message with an attached Environmental-Activity Screening Form (EASF) to the CHPRC NEPA subject matter expert stating that: "Because this is stimulus funded . . . we will need to obtain a [sic] activity-specific CX for our NEPA coverage." Exhibit 7.

The ECO also requested a meeting to discuss the contents of the EASF and asked when the activity-specific CX could be expected. This e-mail message was also copied to the 100K IUUP Project Director, 100K IUUP Construction Manager, D&D Project Environmental Director, and the CHPRC EP Manager. The EASF identified that the activities to be undertaken involved the constructing or modifying of a public water, raw water, or export water system. *Id.*

On April 23, 2010 the CHPRC D&D Project Environmental Director wrote an e-mail message to the 100K Area ECO asking whether the "ecological review" had been completed for the Project. Exhibit 43. Three days later (April 26, 2010) the ECO forwarded the Environmental Director's e-mail to the CHPRC NEPA Subject Matter Expert (SME) who wrote back the same day stating that now he needed to "close with . . . [the DOE Hanford NEPA Compliance Officer] on the CX" and also stated that he would "follow-up with you and . . . [the CHPRC D&D Project Environmental Director] this week." Exhibits 44 and 45. Then on April 28, 2010, the CHPRC SME wrote an e-mail message to the DOE Hanford NEPA Compliance Officer requesting approval of the ". . . activity specific CX for 100K Area Utilities Reroute." The DOE Hanford NEPA Compliance Officer did not respond, and the CHPRC SME did not make further inquiry about the status of the NEPA determination until May 24th and 25th, 2010. Exhibits 46 and 47. By that time construction, which started on April 14, 2010, had been ongoing for nearly six weeks without receiving a NEPA CX determination. On May 26, 2010, the RL NEPA Compliance Officer signed the CX for the Project. Exhibit 48.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F03

Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.

Requirement(s):

1. DOE M 231.1-2 (Supp Rev 8), *Occurrence Reporting and Processing of Operations Information,* and CRD attached thereto.

2. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

3. DOE O 413.3A Chg 1, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

4. PRC-PRO-QA-052, *Issues Management*

5. DOE Contract Number DE-AC06-08RL14788, Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

Discussion:

On July 20, 2010 a team was assembled and convened to determine the root cause(s) of the failure to obtain WDOH written approval prior to commencing construction activities on the 100K potable water delivery and treatment system. A follow on session was performed on August 3, 2010 to further evaluate the conditions and identify the root causes. The Root Cause Analysis Report (RCA Report) was released on November 2, 2010, five months after the team was first assembled.[10]

The RCA Report contains several factual errors. First, the report states that on May 26, 2010 the CHPRC NEPA SME determined that the NEPA CX had not been obtained and that the CX approval was obtained on May 27, 2010. Realization of the lack of NEPA CX approval occurred on May 24, 2010 and actual approval from RL was obtained on May 26, 2010. The RCA Report also states that work was suspended during the week of June 1, 2010 on portions of the project "that clearly required WDOH approval." There is no evidence that any suspension of activities occurred on the project except for a few hours on May 18, 2010. In fact, CHPRC ARRA weekly reports for the weeks of April 14, 2010 to July 21, 2010, clearly detail in both text and photographs that work continued without interruption on the project during that period. Exhibit 21.

The RCA Report further states that the combination of two separate events (one at 200 East Area and one at the100K Area) was determined to be a significant issue because of noncompliance with several WAC Chapter 246-290 and Code of Federal Regulations (CFR) requirements, and CHPRC procedures. The RCA Report did not identify WAC 246-290-120, *Construction Documents,* which is a critical WAC requirement applicable to the 100K IUUP. Furthermore, the Report also does not address CHPRC requirements identified in PRC-PRO-PM-25000 which require completion of a Project Execution Plan prior to start of construction. The RCA Report also does not acknowledge applicability of DOE O 413.3A Chg 1 CRD to the project.

[10] During July, August, and the first half of September 2010 construction continued on the project without receiving the required WDOH approval, and without completion of the RCA Report.

The RCA team identified two root causes for the failure to obtain WDOH approval prior to the start of construction. The Phoenix Analysis process and the "Five Whys" were employed to identify the adverse conditions. With regard to Root Cause #1 the report states, in relevant part:[11]

> Management expectations were not clearly understood concerning unacceptability of proceeding at risk concerning environmental, regulatory approvals . . . , and, Furthermore, the Environmental Activity Screening Form (EASF) checklist did not have the drinking water requirements checked as applicable to the 100K project.

Neither of the conclusions contained in the quote above were correct. CHPRC's official correspondence with the WDOH prior to commencing construction establishes that management understood the applicable requirements. In its letter of January 11, 2010 CHPRC requested a waiver by the WDOH of the pilot study for the Potable Water Treatment Facility and acknowledged in the attachment to that letter that:

> A project report meeting the requirements of WAC 246-290-110, and tailored to fit the Hanford Site context, will be submitted to you as soon as the required information is obtained/developed and in advance of construction of the new 100K Potable Water Facility.

Exhibit 16, p. 8 Attachment to Letter.

In response to the above letter the WDOH Regional Engineer acknowledged this understanding was correct by stating in his letter of February 17, 2010 addressed to the CHPRC's 100K IUUP Potable Water Project Engineer:

> As outlined in your request, a project report, meeting the requirements of WAC 246-290-110, will be submitted in advance of the construction documents and will include the scope, protocols, and sampling/monitoring requirements for the operational testing of the full-time facility. . ."

Exhibit 18.

Thus, as early as January 11, 2010, CHPRC conveyed its understanding that construction could not commence on this Project until it received WDOH's formal written approval. The author of that letter was the 100K IUUP Potable Water Project Engineer, and the D&D Environmental

[11] According to the RCA Report the above statement correlates to the Phoenix Analysis #A4B1C01-Management policy guidance/expectations not well-defined understood or enforced. Exhibit 25, pp. 6-7 of 17, Section 6.3 RC-01.

Manager approved release of the letter prior to its being sent to WDOH. WDOH acknowledged and confirmed that requirement in its response letter dated February 17, 2010.[12] *Id.*

Furthermore, the statement under Root Cause #1 concerning the EASF not addressing the applicability of the drinking water requirements is incorrect. Under the section entitled "Constructing or Modifying Facilities, Equipment, or Processes" subsection 5.7 "Constructing or Modifying Public Water, Raw Water, or Export Water Systems" is clearly marked on the EASF. In checking that box the 100K Area ECO, acknowledged that the WDOH drinking water requirements were applicable. When the ECO sent the EASF to the CHPRC NEPA SME and copied the CHPRC EP Manager, he clearly indicated the project involved the construction of a potable water system. Furthermore, on August 24, 2009, the ECO sent an e-mail message to the CHPRC EP Manager requesting assistance in obtaining the necessary WDOH approval for this new system. Exhibit 8. The Assessment Team, in its interviews with the ECO, asked if he had received any response to his August 24, 2009 e-mail, and he stated he had not.

Root Cause #2 suggests that inexperience of some personnel, and lack of familiarity with regulatory requirements led to a belief that it was acceptable to commence construction without all WDOH approvals. It also discloses that proceeding at risk was necessary to meet project schedule. Root Cause #2 of the RCA Report states:[13]

> Individuals relied on past experience with WDOH regulators and previous drinking water installation projects outside of Hanford and the DOE Complex. Due to this experience individuals believed that:
>
> - WDOH would informally allow the simultaneous preparation and review of the Project Report while construction activities such as excavations and placement of material commenced
> - An environmental "at-risk" position was acceptable to the regulators and CHPRC
> - The "at-risk" position was also considered necessary to meet the fast-track project schedule. WDOH confirmed to CHPRC that they know and may informally allow projects to proceed at-risk even though the regulations do not allow for this interpretation.

Exhibit 25.

However, other information establishes that the project staff were fully informed that proceeding at risk was not an acceptable practice from WDOH's perspective. In order to assess historic

[12] WDOH reconfirmed its position on this issue in its letter addressed to the CHPRC 100K IUUP Potable Water Project Engineer dated July 8, 2010.

[13] The above statement is noted in the RCA Report as correlating to the Phoenix Analysis #A3B3C06-Individuals underestimated the problem using past events as a basis.

WDOH enforcement postures, a former Hanford Site Water Purveyor was interviewed. According to this individual a WDOH Regional Engineer made it clear on many occasions that it was a violation of WDOH regulations to proceed with construction prior to obtaining WDOH approval, that such practice was not endorsed or condoned by WDOH. The former Hanford Site Water Purveyor stated that he had had discussions with the 100K IUUP Potable Water Project Engineer and the Project Manager prior to and during construction, and conveyed to the them that proceeding "at risk" was not endorsed or condoned by WDOH and could result in an enforcement action.

Finally, while CHPRC performed a root cause analysis, it did not do so in a timely fashion. Considering the guidance contained in DOE M 231.1-2, timely or prompt completion of the RCA Report would have been within forty-five days of discovery of the issues on May 18, 2010. Furthermore, the title of the RCA Report, *Root Cause Analysis Report EM-RL-CPRC-GENLAREAS-2010-0013* suggests it was prepared in connection with *Occurrence Report EM-RL-CPRC-GENLAREAS-2010-0013,* in which case it should have been published within forty-five days of the event covered by the occurrence report. *See* DOE M 231.1-2 (Supp Rev 8).

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F04

CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).

Requirement(s):

1. DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

2. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

3. PRC-PRO-PM-24889, *Project Initiation and Execution*

4. PRC-PRO-PM-25000, *Project Execution Plans*

5. PRC-PRO-CN-14990, *Construction Management*

6. PRC-POL-EP-5054, *CH2MHILL Plateau Remediation Company Environmental Policy*

Discussion:

While CHPRC accurately identified environmental regulatory requirements that would need to be met during construction of the 100K IUUP, it did not address those requirements in project execution plans in a manner consistent with applicable CHPRC procedures. While 100K IUUP FES documents included schedules for obtaining approvals for the construction of the drinking water system from the WDOH, the schedules were unrealistically short and hence unachievable.

The 100K Area ECO completed a CHPRC EAS Form in July, 2009, and at that time accurately identified the need to obtain a NEPA determination and that the 100K IUUP involved construction of a drinking water system requiring approvals from WDOH. This early identification of environmental regulatory requirements is both consistent with guidance and procedures, and is expected. Exhibit 7. Unfortunately, neither the draft nor final 100K PEPs contained a strategy for meeting these requirements.

As noted under Finding 13 below, the 100K IUUP didn't adopt a final PEP until July 29, 2010. It operated under a draft PEP from approximately January 2010 until July 2010, during which period there was little or no updating occurring, nor change control exercised. CHPRC procedures preclude start of field work until a PEP has been approved. *See* PRC-PRO-CN-14990, *Construction Management,* Sec. 3.3.3.1 2.

CHPRC procedures require that environmental and other regulatory requirements be identified and PEPs prepared during the conceptual design phase (CD-1) of projects. Relevant procedures direct that during conceptual design:

> [T]he initial environmental documents applicable to the project need to be prepared including National Environmental Policy Act (NEPA) strategies, analysis, and permit applications.
>
> . . . The project manager needs to work in close coordination with the CHPRC environmental management organization to develop these strategies and documents. Failure to adequately recognize these requirements can result in lengthy and costly delays to the project.

See PRC-PRO-PM-24889, *Project Initiation and Execution*, Sec. 6.2.8. Functional design criteria documents should also be developed at this state of the project. *Id.*, Sec. 6.2.3.[14]

Initial PEPs developed at conceptual design are required to include: " . . . a description of the project's tailoring strategy for implementation of CDR O 413.3 documentation for each phase of project execution and the strategy for execution of the project phases and CD decisions by the CHPRC PRB, if applicable. *Id.* at Sec. 6.2.9. To meet these requirements, a PEP must contain an Environmental Regulatory Strategy. The Strategy must:

[14] The functional design criteria document for the 100K IUUP was not adopted and effective until April 19, 2010 at which time construction had already started. *See* PRC-EDC- 10- 45986.

> Provide a reference or identify documents that establish the environmental regulatory strategy for the project. The section should include the following: . . . Description of the governing environmental regulatory requirements for the project (e.g., RCRA, CERCLA) . . . A brief description of environmental regulatory documents and permits required for the project . . . Status and plans for National Environmental Policy Act (NEPA) compliance [sic]

See PRC-PRO-PM-25000, *Project Execution Plan.* Neither the draft nor final PEP adopted by the 100K IUUP meet the requirements specified in the preceding paragraphs. Furthermore, inaccuracies contained in the tables at the end of the 100K IUUP PEP are misleading. The PEP tables indicate no drinking water permits or approvals were needed, which was incorrect. The January 2010 version tables also state that NEPA determination had been obtained, when in fact the determination was not secured until May 26, 2010.

While FES design and construction documentation included a schedule for obtaining WDOH approval of the drinking water system, they made no provisions for obtaining required NEPA determinations.[15] It is unclear when provisions for obtaining WDOH approval were first included in the FES documentation; however it is clear that such provisions were present as of January 7, 2010. The schedule for completing these activities to support a May start of construction, as they appear in the January FES were unreasonably short and unachievable. Given the time allocated to WDOH to perform documentation reviews, address comments exchanged between the State and the permit applicant, and for the State to issue construction approvals, a process that can require at least 60 days or more, the Projects proposed submission of its application on March 9, 2010 and its expectation of obtaining required approvals by April 5, 2010 was unreasonable. It should also be noted that the same January FES scheduling submission of an application for approval to WDOH on March 9, 2010, also schedules start of construction of drinking water system components on January 29, 2010, more than a full month before even making the application for approval.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F05

CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.

[15] While provisions were made to perform work necessary to obtain Cultural Resources Reviews which are a prerequisite to obtaining NEPA determinations, no provision was made for activities necessary to comply with NEPA.

Requirement(s):

1. CRD 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B requires that fire protection for DOE facilities will "meet or exceed applicable building codes for the region and National Fire Protection Association (NFPA) codes and standards." Section D.2 requires contractors to use DOE-STD-1066-99, Fire Protection Design Criteria. Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter.

2. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter - New projects and facility design, construction and modifications involving fire alarm systems, fire suppression, or water supplies shall be designed in accordance with this Handbook. Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation.

3. DOE-STD-1066-99, *Fire Protection Design Criteria* – New project and facility design, construction and modifications shall comply with this Standard. All references to the word "should" in this Standard will be interpreted as a "shall" as required by SCRD 420.1B.

Discussion:

The fire sprinkler system design (drawings and calculations) for the Potable Water Treatment Facility was not approved by a Deputy Fire Marshal (DFM) before the system was installed as required by CRD 420.1B. During construction of the 100K IUUP, K-Basins was assigned a resident DFM who held delegated review and approval authority from the Hanford Fire Marshal's Office (HFMO). However, CHPRC contracted with a private fire protection engineer (FPE) for a review and approval of design drawings. This contract FPE had no delegated approval authority from the HFMO. Drawings were reviewed by the contract engineer and comments returned to ARES Engineering, the company that produced the design. Installation began prior to any approval of the design by either the DFM or HFMO.

During personal interviews, the Assessment Team was told that the 100K IUUP Director was verbally informed by the 100K DFM in April 2010, that the design for the Fire Protection System as developed by ARES Engineering was defective and would not comply with applicable code requirements if constructed as designed. This statement is supported by entries in a Review Comment Record (RCR) generated in October 2009 that documents sixty defects. Exhibit 59. Although the 100K DFM informed 100K IUUP management of the system design defects, and that it was necessary to correct the defects and obtain HFMO approval before commencing construction, construction commenced without that approval.

After participating in an inspection tour, the DFM immediately submitted the following item into the CHPRC Corrective Action System:

> On Tuesday, August 24th, 2010, the 100K Fire Protection Engineer (Deputy Fire Marshal) was notified by facilities operations personnel that the scope of work for the day for the

> 100K new water treatment facility was to include installation of the fire suppression system. The design for this system has significant comments still outstanding from 100K Fire Protection Engineering, and has not been reviewed and approved by the Fire Marshal's Office. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes. HNF-36174, DOE Fire Protection Handbook – Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the Hanford Fire Marshal's Office. The [Engineering Projects and Construction] EPC construction manager was notified that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. The EPC construction manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the Fire Marshal's Office.

Exhibit 60. Work continued at the 100K IUUP without resolution of this Condition Report.

On September 28, 2010, 100K Senior Management issued a Field Stop Work order on the 100K Fire Suppression System Upgrade pending a comprehensive design document review and approval (CR-2010-3049). At that time, CR 2010-2597, written by the DFM, was screened out and rolled over to CR-2010-3049. An Apparent Cause Analysis was performed as a result of the Field Stop Work. Four of the corrective actions identified in the Apparent Cause Analysis were related to the clarification of the authority of the HFMO and interface with CHPRC. The causal analysis did not identify that CHPRC is required by contract to have a Memorandum of Understanding with the HFMO identifying its authority, responsibilities, and duties. See Finding S-11-EMD-PRC-001-F15 for details.

On October 13, 2010, a walk down of the 100-K Potable Water Treatment Facility was performed by the RL FPE to review fire protection and life safety features and was recorded in Operational Awareness (OA) Entry 33896. The following information was documented in the OA:

> Interviews were conducted with Fire Protection Engineers involved with the project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft. Some of the RCR review comments provided by the FPEs have still not been incorporated over one

> year later, yet RCR comments were dispositioned as "Comments Accepted." Portions of the fire alarm system (initiating devices and conduit) were also installed prior to any review of the system design by project fire protection engineering or the Fire Marshal's Office. A final (as-built) design package has not been issued by the Project to date. Therefore, the Project has not received approval for the design as installed. This is also in violation of HNF-36174, DOE Fire Protection Handbook, which requires that as-built drawings be approved by the HFMO prior to acceptance of the system.

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system have been installed on the job without prior approval of the HFMO or an authorized DFM. This is in violation of the CHPRC Fire Protection Program. MSC-RD-9118, Fire Protection Design/Operations Criteria, section 2.1.1 states:

> Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F06

CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

Requirement(s):

1. DOE-0342, Rev 2, *Stop Work*, Effective January 18, 2010

Discussion:

On September 28, 2010, CHPRC senior management issued a Stop Work on the 100K Fire Suppression System Upgrade activities pending a comprehensive design document review and approval. On September 29, 2010, a CHPRC Condition Report, number CR-2010-3049, was issued and screened at an Adverse Significance Level to initiate and document the investigation and corrective actions. This Condition Report replaced a previous Condition Report, CR-2010-2597, which had been "screened out" at the request of the responsible manager as stated in that report:

> Significance Level Justification: Sent back from Assignment by . . . Responsible Manager. Please screen out this CR to CR-2010-3049. Although submitted a month apart both CRs represent the exact same condition and screened at the same level as adverse.
>
> This condition was rescreened from an adverse condition to a screen out at the request of the responsible manager per above Justification. CR-2010-3049 is screened adverse will document the apparent cause analysis and corrective actions to address the condition.

The first Condition Report, CR-2010-2597, was initiated on August 24, 2010 by the CHPRC 100K Area FPE and included and identified four "Requirements Not Met." See Exhibit 60 for details. However, the replacement Condition Report, CR-2010-3049, identified the "Requirements Not Met" as "N/A." No explanation was stated why the requirements identified in the earlier Condition Report, CR-2010-2597, were not included in the replacement Condition Report, CR-2010-3049. Exhibit 61. The replacement Condition Report admits that a design document review should have been done prior to start of construction. Exhibit 61, "Significant Level Justification" section.

When examined on March 11, 2011, CR-2010-3049 contained a list of "Associated Files" including the D&D Project "Apparent Cause Analysis 100K Fire Suppression Stop Work." (File: 100kFireSuppressionStopWorkACA.pdf). The fifth full paragraph of page 2 of that document states: "Closure of the Corrective Actions outlined in CR-2010-3049 is required to lift the Stop Work and resume work on the Fire Suppression System Upgrade Project."

The list of "Recommended Corrective Action Items" is then enumerated. Item 2 states:

> Obtain clarification on the authority of the Deputy Fire Marshal role. MSA currently has draft document in DOE-RL for review and Approval – Mike Koch, 1/31/2010.

The Apparent Cause Analysis is signed and dated by D&D Technical Support and the 100K IUUP Project Manager on November 10, 2010.

On January 31, 2011, D&D Engineering sent an e-mail to CHPRC Corrective Action Management requesting an extension of the due date for Item 2 noted above to April 27, 2011. On February 2, 2011, a D&D Project Senior Operations Specialist then wrote an e-mail on behalf of the 100K IUUP Project Manager to CHPRC Corrective Action Management approving the April 27, 2011 extension date for CR-2010-3049 correction action Item 2. See CA-2-Extension.pdf in CR-2010-3049 Associated Files.[16]

[16] The question of the Fire Marshal's role in approving designs prior to construction is an overarching question that should have been resolved promptly. Construction activities on most of the components of this project resumed without resolving this corrective action.

It is noteworthy that no actual written Stop Work Order is listed among the "Associated Files" in the CR-2010-3049 Condition Report. However, the Apparent Cause Analysis noted above states:

> After additional discussions the 100K Areas Senior Management extended the Stop Work to cover the Fire Suppression System Upgrade project pending a comprehensive Design Document review and approval. The extended Stop Work superseded the earlier Stop Work and was documented in CR-2010-3049.

See 100K FireSuppressionStopWorkACA.pdf second full paragraph of page 2.

The Apparent Cause Analysis contains no section that allows any work to be restarted before the completion of all the corrective action items. This is consistent with DOE-0343 Stop Work which applies to all Hanford contractor and subcontractor employees and can be accessed on the CHPRC Home Page on the Hanford Site Intranet and states, in relevant part:

> Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented* in accordance with Contractor procedures (logbook or other established method of reporting/tracking/communicating safety issues and corrective action management). *NOTE: For resumption of radiological work, consult the Radiological Control Manual for additional approval requirement."

See DOE-0343 Stop Work Revision 2 Effective Date: January 18, 2010 page 3 of 6 third paragraph.

Work was restarted on this Project in October 2010. This restart of work was conducted prior to completion of the CR-2010-3049 D&D Project 100K Fire Suppression Stop Work Apparent Cause Analysis which evidently is the only written documentation of the terms and conditions of the Stop Work Order issued September 28, 2010.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F07

The design review process applied to 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.

Requirement(s):

1. CRD 420.1B (Supplemented Rev. 4), *Facility Safety*, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter.

2. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter requires that drawings for fire alarm systems, fire suppression systems, and water supplies must be approved by the HFMO prior to installation.

3. *100K MinSafe Administrative Procedure*, FP-4-014, Fire Protection Program, Section 1.1 states that: "this procedure applies to 100K Area facilities, including new project design and construction, modification, alteration, and demolition of 100K Area facilities. It also applies to operations performed within the 100K Area by the CHPRC D&D Project and other organizations." Section 3.14 states: "all construction, including modification of existing facilities, shall be in accordance with the requirements of MSC RD 9717, DOE-STD-1066, CRD 420.1B, HNF-36174, and applicable NFPA Codes and Standards."

4. *CH2M Hill Requirements Applicability Matrix* states: ". . . the following Requirements Applicability Matrix Reports (RAM) are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, etc) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The RAM lists MSC-RD-9118, Fire Protection Design/Operations Criteria as satisfying the categories of 29 CFR 1910, *Occupational Safety and Health Standards*, and CRD O 420.1B Supplemented, Rev 4, *Facility Safety*. The RAM lists MSC-RD-10606, *Fire Protection Program Requirements* as satisfying the categories of 29 CFR 1910, *Occupational Safety and Health Standards*, CRD M 231.1-1A, *Environmental, Safety, and Health Reporting Manual*, and DOE O 420.1B Supplemented, Rev 4, *Facility Safety*.

5. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.1 states: "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the HMFO prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits."

6. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.4 states: " . . . [The Hanford Fire Marshal (HFM)], who shall be a member of the . . . [Hanford Fire Department (HFD)], shall have the authority to develop, administer and enforce the Fire Prevention Program for the . . . [Mission Support Contractor (MSC)] as directed by SCRD O 420.1B, Rev. 4, *Facility Safety*, and by RL approval of the HFM's Charter, which establishes the authority, responsibilities and duties of the HFM. The HFM's authority shall extend to all work performed under or on behalf of MSC. RL will support the HFM in enforcement of the codes and standards and execution of the HFM's duties as

described below . . . . Section 2.4.2 states: "To support the development, administration and enforcement of the Fire Prevention Program the duties of the HFM shall include but not be limited to: Review and approval of new fire protection system designs and modifications/ upgrades to existing fire protection systems per MSC-PRO-8635, Review and Approval of Technical Documents."

7. DOE O 414.1C, *Quality Assurance*, Attachment 2 , Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc." Section 3.g. paragraph (1) states: "Procure items and services that meet established requirements and perform as specified."

Discussion:

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system were installed on the job without prior approval of the HFMO or HFMO representative. DOE O 414.1C, *Quality Assurance*, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

On August 24, 2010, the CHPRC 100K FPE was notified by facilities operations personnel that the scope of work for the day for the 100K new Potable Water Treatment Facility was to include installation of the fire suppression system. The design for this system had significant comments still outstanding from 100K Fire Protection Engineering, and had not been reviewed and approved by the HFMO. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes. As a result, Condition Report CR-2010-2597 was generated on August 24, 2010, by the CHPRC 100K FPE.

CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the *DOE Fire Protection Handbook*, Hanford Chapter. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter, requires that drawings for fire alarm systems, fire suppression systems, and water supplies, must be approved by the HFMO prior to installation. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the HFMO.

The 100K IUUP Project Manager was notified on August 24, 2010, by the 100K FPE/DFM (CR-2010-2597), that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. At that time, the 100K IUUP Project Manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the HFMO.

CHPRC also procured fire protection equipment and had it installed prior to completion and approval of the associated design. The RL Electrical SME and the RL Fire Protection SME

obtained a copy of Contract #36534-31 Statement of Work (SOW) for the K-Basin/ARRA Potable Water Treatment Facility project, dated April 7, 2010, and observed within section 3.1.5 paragraph D that the construction Contractor (George A. Grant Inc.) was directed to install "the Buyer (CHPRC) provided diesel power fire pump, jockey pump, fire pump controller, and the fire alarm control panel." This equipment was procured on April 14, 2010 (based upon the vendor's certificate of compliance submittal). However this procurement was completed before the associated design was completed and approved. The fire pump installation drawings were not approved by the HFMO until January 18, 2011 (100K Water Treatment Project Status Report January 25, 2011). If CHPRC ARRA Project management and staff had procured the mentioned equipment after the design was completed and approved, they would not have needed to procure and install the jockey pump. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter, requires that drawings for fire alarm systems, fire suppression systems, and water supplies, must be approved by the HFMO prior to installation.

A tour of the new 100K Potable Water Treatment Facility was conducted on September 1, 2010, by representatives from a DOE GSSC support contractor (PAI Corp.) and CHPRC Fire Protection Engineering (OA 32906). The Potable Water Treatment Facility was designed to provide several fire areas in the building rated at one and two hours, but no fire barrier designs had been submitted by the Project for approval by the HFMO. Not all interior walls extended to the roof level of the building and several rooms had suspended ceilings. At that time work was progressing on installing a two hour fire rated suspended ceiling in the electrical room. The submitted, but not yet approved, sprinkler drawings showed only sprinklers at roof level. Without the approval of the CHPRC FPE, sprinkler installation had started. When this was discovered, the work was halted and the CR was generated. The installation included sprinkler drops into suspended ceiling areas, but these were not in accordance with design drawings.

The building sprinkler riser had been installed on an inside wall in the pump room and was fed directly from the fire pump with no control valve, contrary to NFPA requirements. The CHPRC FPE/DFM required that it be moved to an outside wall and that a wall control valve be installed for isolating the system without turning off the pump or entering the building. The fire pump skid had also been delivered to the pump room, but the design for the fire pump and piping had not been approved by the DFM.

A significant amount of work was proceeding without review and approval of the DFM. Under Requirements Not Met in the CR-2010-2597 it stated:

> CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter. HNF-36174, DOE Fire Protection Handbook – Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the HFMO prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the HFMO.

It is noted that prior to the discovery of these problems on the 100K Potable Water Treatment Facility, RL had released its Assessment of the CHPRC Fire Protection Program, S-10-SED-PRC-023, on 8/19/2010. This assessment included the following concern: "Concern A-1O-SED-PRC-023-CO1 - CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated FPP requirements. CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." It was clear that CHPRC still had not integrated or implemented fire protection requirements.

Questions were raised on September 22, 2010. The fire pump and piping was in the process of being installed, but the fire pump system controller was not, nor had any review data been submitted for approval by the HFMO. The fire pump piping drawings had reportedly been sent by CHPRC back to ARES for revision and had not been approved through the HFMO. Some piping and the fire pump/driver skid had reportedly been installed with "verbal" approval. The fire pump/diesel driver skid had been bolted and concrete filled. It could not be determined at that time if that was done in accordance with the manufacturer's approved/listed requirements and specifications.

At this same time, concerns were raised on the fire wall construction as to what UL listed design was being used, overlap of joints, fastener spacing, a wall ventilation louver that did not have a fire rated damper, etc. Electrical and piping installation and equipment setting were still ongoing in the Potable Water Treatment Facility, with power supply to the building planned for later that week. The Chemical Storage Room was still being worked on to complete fire walls, fire damper replacement, and sample tubes penetrations protection. For the Electrical Room the fire walls still need to be extended to the roof and an approved wall/roof membrane interface detail still needed to be resolved.

The fire alarm system was still in the submittal/review stage. Some conduit and boxes were installed at an earlier date but this work was stopped to get approvals. A fire alarm panel was submitted that did not meet specifications (a FireLite-4 zone was specified), was undersized by the design, and was not a Hanford Site standard panel that maintenance and testing forces are trained on. A new submittal and approval was being processed to increase the size of this panel and resolve this issue. Once again there was no installation permit for the fire alarm system and one had to be created after work had already commenced (HFM Permit Number 2010-860 of December 16, 2010).

Filling and hydro-testing of the new 750,000 gallon water tank was reported to be complete, and final insulation of the tank roof was in progress. Pressure testing of the fire line loop around 105KW was reported to be complete. The fire water distribution piping off the South East corner near Cold Vacuum Drying Facility (CVDF) was in place, but the project changed a section of 12 inch distributions system to 8 inch. This is contrary to the requirements of CRD 420.1B, Supplemented, rev. 4, Section B.7.a, which states, "Distribution mains, either sanitary or raw water, that are being extended to supply water for domestic and/or process water and will provide water for fire suppression systems (sprinklers and/or hydrants), shall be at least 12

inches in diameter." The project did not request relief from this contract requirement until after the piping was installed.

The continuing project goal at that time was to have all review, approval, installation, and acceptance testing for the Project completed by the end of September. Considering the large number of continuing unresolved issues, that did not happen.

On October 13, 2010, another walk down of the 100-K Potable Water Treatment Facility was performed to review fire protection and life safety features. The walk down was attended by several individuals including, the field work supervisor, the K-Basin FPE /DFM, CHPRC Fire Protection Program Manager, contract FPE supporting K-Basin, FPE supporting the HFMO, RL Electrical Subject Matter Expert (SME), and the RL FPE. The 100-K IUUP Project Director joined the tour in progress. At that point, the fire sprinkler system had been installed. Some components of the fire alarm/notification system (back plates for notification appliances and conduit) had also been installed. The fire pump and piping were in place. For the most part the fire pump piping was complete with the exception of a few segments of piping that were missing. Internal fire barriers had also been partially constructed, existing construction of the fire rated walls did not connect with the unrated roof assembly, and barrier penetrations were not properly sealed.

Interviews were conducted with FPEs involved with the Project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft, even though full submittals had been requested of the Project. Some of the RCR review comments provided by the FPEs had still not been incorporated over one year later, yet RCR comments were dispositioned by the Project as "Comments Accepted." Final review packages for the fire alarm and fire sprinkler systems had not been reviewed by the FPEs, yet the systems were installed in the building. A final design package, requesting 100% design review, has never been issued. Therefore, the Project had not received approval for the final design.

The FPEs involved with the 100K IUUP have concluded that the individual(s) designing the Potable Water Treatment Facility fire protection systems working for outside firms, such as ARES Corporation, were not technically qualified in the fire protection field. Although the drawings submitted were stamped by a Washington State Licensed Engineer, the drawings contained a variety of defective specifications that if built would have resulted in code violations.

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system had been installed on the job without prior approval of the HFMO or DFM. This is in violation of the CHPRC Fire Protection Program. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, section 2.1.1 These systems had been installed without the required approvals. When the 100K IUUP Project Director was asked why the systems were installed without approval from the HFMO, he stated that "those procedures don't apply to me, those are MSC procedures." When explained that the MSC Fire Protection Program and Procedures were adopted and endorsed by CHPRC as its Fire Protection Program as identified in CHPRC Requirements Applicability Matrix he stated, "I don't care, they still don't apply to me."

Work on installation of fire protection systems, including fire barriers was then shut down by CHPRC upper management. The Project then hired Hughes and Associates, a fire protection consulting firm, who sent several FPEs to sift through the documentation and look over what had been installed to determine the path forward to obtain code compliance and to assist in completing the design of the Project. A final design had not been completed so that a 100% design review package could be submitted to the AHJ for review and approval.

As of the end of December 2010 the following 100K IUUP items were still open for either issues resolution, design modification, review completion, and/or approvals: fire barriers, fire pump re-design, fire pump room ventilation design, three water distribution system ICRs, water distribution system design modifications, and the water supply cross-over.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F08

Construction permits were not obtained from the Hanford Fire Marshall's Office by the 100K IUUP prior to commencing construction.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev 4), *Facility Safety*, Section D (8) states: "Conditions, operations, or materials hazardous to life or property pursuant to the Uniform Fire Code, Section 1.12, shall be permitted through the Hanford Fire Marshal Permit System."

2. *100K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program*, Section 3.18 states that, "Several actions/activities require the development and approval of a HFM Permit prior to initiation of the action/activity. These actions/activities include:

- facility construction/demolition
- placement of relocatable structures
- transport and use of explosives
- use, handling, or storage of hazardous materials in excess of defined limits
- operation or storage of fossil-fueled vehicles inside any building not designed for such use, except as authorized by the facility FHA
- new or modified facility occupancy
- outdoor burning
- placement and use of electric heaters in excess of 1500 watts
- placement and use of fuel-fired heaters
- placement and use of portable generators
- blockage of roads
- facility egress modification
- utility outages

- fire protection system (including fire hydrant) installation or deactivation

3. *CH2M Hill Requirements Applicability Matrix states:* " . . . the following RAM Reports are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, . . .) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The applicability matrix lists MSC-RD-8589, Hanford Fire Marshal Permits under both 10 CFR 830 Nuclear Safety, and CRD O 420.1B Supplemented, Rev 4, Facility Safety.

4. MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities*, Section 2.1.2 states: "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, *Hanford Fire Marshal Permits*, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD, (initiated through a Hanford Fire Department Contractor Pre-Incident Plan Request Form, (A-6003-387) are submitted to the HFM prior to engaging in activities or processes governed by the forms (Ref: MSC-PRO-24889, Project Initiation and Execution, Appendix A Section 8.2)."

Discussion:

The 100K IUUP did not follow contractual requirements identified in CRD O 420.1B, (Supplement Rev. 4), and CHPRC procedures identified in MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities* and MSC-RD-9118, *Fire Protection Design/Operations Criteria.*

Construction permits allowing the construction of the Potable Water Treatment Facility (HFM Permit No. 2010-852) and the 100K Fire Water and Potable Water Distribution System (HFM Permit No. 2010-853) were not obtained until December 16, 2010 (long after construction was complete). Additionally, the fire sprinkler system construction permit (2010-861) and fire alarm system construction permit (2010-860) were obtained on December 16, 2010, after the systems had been installed.

MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.1 states: "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, *Life Safety Code*, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, *Hanford Fire Marshal Permits.*"

MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities,* section 2.1.2 which states that, "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, *Hanford Fire Marshal Permits*, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD are submitted to the HFM prior to engaging in activities or processes governed by the forms."

Additionally, section 2.1.3 that states that, "The construction manager, as part of the hazards communication effort, shall complete a *HFD Construction/Demolition Fire Safety Inspection Checklist* prior to the commencement of construction or demolition activities with the assistance from the Fire Protection Engineer (FPE) and perform follow-up inspections at a frequency determined by the FPE."

The contractor/project did not obtain a Construction Permit, issued by the HFMO, prior to engaging in activities and processes governed by the permit. Additionally, a HFD Construction/Demolition Fire Safety Inspection Checklist was not completed, to ensure that the requirements of MS-CRD-9717 were being implemented.

RL Lead Assessor Closure Required: YES [x] NO [ ]

Finding: S-11-EMD-PRC-001-F09

The 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B.7.b.3 states: "Underground distribution systems for fire protection water supplies shall be of the looped grid type arranged with two-way flow and sectional valving to provide alternate flow paths from the source to any point in the distribution system for nuclear facilities and buildings or groups of buildings with an MPFL exceeding $15 million. The looped grid shall be provided with a second independent source of water supply for Category 2 Nuclear Facilities or where the MPFL exceeds $50 million. Application of this requirement to existing facilities will be made on a case-by-case basis after consultation with the RL AHJ."

2. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B.7 a states: "Distribution mains, either sanitary or raw water, that are being extended to supply water for domestic and/or process water and will provide water for fire suppression systems (sprinklers and/or hydrants), shall be at least 12 inches in diameter. Sectional valves shall be installed in the following manner for new installations and water distribution main upgrades."

3. DOE O 414.1C, *Quality Assurance*, Attachment 2, Section 3.e (1) states: the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

Discussion:

The 100K IUUP installed water utility piping prior to applying for and receiving approved exemptions and equivalencies from RL. After installation of the water distribution system, CHPRC requested an exemption for the lack of a looped water distribution system for the 105-KE building, and for the substitution of an 8 inch water main in lieu of the required 12 inch water main.

A looped fire water distribution main was required to be installed around the 105KE reactor building in accordance with PRC Section J, Attachment J.2, Contractor Requirements Document Order 420.1B, Facility Safety, Supplemented Revision 4, Section B, Item 7.b.3. which states:

The newly installed 100-K water distribution system did not provide a looped supply main around the 100-K area, nor did it provide a loop around the 105KE reactor building. The 12 inch diameter supply terminates (dead ends) south of the 105KE reactor building. The new 105KE supply provides water to two new fire hydrants south of the 105KE reactor building, and one new fire hydrant east of the 105KE reactor building. An equivalency exemption was requested by the contractor (letter CHPRC-1100455) due to the difficulty of co-coordinating with the extensive soil excavation and remediation commitments in the areas around the 105KE reactor building, and areas further west toward the 105KW building.

Additionally, the original water loop design requirements called for 12 inch fire water mains in the 100K Area new water distribution system. CHPRC made a unilateral decision during installation of the water main piping to change the 12 inch loop around the 105KW to 8 inch pipe. However, the equivalency request for relief from contractual requirements was not submitted to RL until after the piping had been installed. *See* letter CHPRC-1101317.

A 12 inch diameter distribution main is required to be installed in accordance with PRC Section J, Attachment J.2, Contractor Requirements Document Order 420.1B, *Facility Safety*, Supplemented, Rev. 4 (SCRD), Section B.7. The 8 inch fire water distribution lines that were substituted around 105KW supply water to a fire suppression system, fire hydrants, feed the 105KW de-mineralized water system, and provide water to two controlled water fill stations located at the southwest and southeast corners of the 100K Area.

Final connections to the new fire water distribution system were performed at CVDF on February 5, 2011, and 105KW on February 19, 2011, completing the water distribution system installation. The non-looped water distribution exemption request was submitted to RL on February 28, 2011 (letter CHPRC-1100455). The 8 inch to 12 inch equivalency request was submitted on March 10, 2011 (letter CHPRC-1101317). In both cases, the exemption and equivalency requests were sent in by the contractor after the installation of non-compliant components.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F10

CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer/Deputy Fire Marshal.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), Chapter II, Facility Safety, Section 3.a.3 states: "Fire protection for DOE facilities, sites, activities, design, and construction must meet or exceed applicable building codes for the region and NFPA Codes and Standards."

2. CRD O 420.1B (Supplemented Rev. 4), Facility Safety, Section D.5 states: "Fire rated assemblies shall be installed, as required by DOE-STD-1066-99, the fire hazard analysis, NFPA or building code to reduce loss potentials."

3. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11 states: "Documents for new designs and modifications to existing facilities affecting fire protection or fire code compliance must be reviewed and approved by the Hanford Fire Marshal's (HFM) Office in accordance with MSC-PRO-8635, Review and Approval of Technical Documents, or equivalent requirements implemented by other contractors."

Discussion:

The first design submittal received by the 100K IUUP addressing the Potable Water Treatment Facility related to the building structure was submittal 36534-031 Sub 13125-03, sent from WHPacific, Anchorage, AK, on April 21, 2010. The correspondence stated that, "the Architect stamp will be added after initial review and comments have been incorporated." The submittal was reviewed by the 100K IUUP Project Engineer and the Buyers Technical Representative on May 4, 2010. No fire protection review was performed of this submittal.

The second design submittal, 36534-031 Sub 13125-02, was received on September 2, 2010; over four months after Project construction had begun. Exhibit 62. The Project Engineer forwarded the submittal on to the PFP Fire Systems Engineer for review along with the K-Basin DFM. The PFP Fire Systems Engineer responded with his observations of the buildings physical condition based on a walk down of the site, and clearly documented that building construction was well under way prior to seeking DFM approval. At this point in time, neither the PFP Fire Systems Engineer nor K-Basin DFM granted any approvals, but did make comment on several design deficiencies. While the CHPRC Contract requires obtaining HFM or DFM approval of designs prior to commencing construction, written DFM approval of the design was not actually granted until December 2010 at which point construction was nearly complete.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F11

CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.

Requirement(s):

10 CFR 830 requires identification and analysis of USQs prior to construction of new, or modification of new nuclear facilities. More specifically the regulations require:

> The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must establish, implement, and take actions consistent with a USQ process that meets the requirements of this section [and]. . . [t]he contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must implement the DOE approved USQ procedure in situations where there is a: (1) Temporary or permanent change in the facility as described in the existing documented safety analysis;(2) Temporary or permanent change in the procedures as described in the existing documented safety analysis;(3) Test or experiment not described in the existing documented safety analysis; or (4) Potential inadequacy of the documented safety analysis because the analysis potentially may not be bounding or may be otherwise inadequate.

10 CFR 830.203. Furthermore,

> If a contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility discovers or is made aware of a potential inadequacy of the documented safety analysis, it must: Take action, as appropriate, to place or maintain the facility in a safe condition until an evaluation of the safety of the situation is completed;(2) Notify DOE of the situation;(3) Perform a USQ determination and notify DOE promptly of the results . . . .

Id.

Discussion:

The nuclear safety aspects of the replacement water supply and fire suppression water distribution system were reviewed. There is considerable confusion in this area. While CHPRC staff and management are adamant that all revisions were properly reviewed, their responses were sometimes contradictory. Most nuclear safety issues have been resolved, but a few issues

remain. This team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review.

The primary nuclear safety issue is: Can the new system provide excessive water, such that any leaked water could enter K West Basin and cause an overflow? The K Basin FSAR Section 3.4.2.9 "Overflow of Radioactive Water from 105-KW Basin" addresses an accident characterized as an operational spill event with a frequency of "unlikely." A pipe break in a 105-KW Basin building or an operating mistake can cause an overflow of the fuel storage basin water, with possible release of radioactivity to the environment. The maximum size water inlet line in the basin area (8 inch) is assumed to fail. The replacement water supply adds new water supply lines which may create the potential for higher water flow if a line breaks.

These issues should have been addressed through the USQ process. RL staff reviewed the USQ logs and found no evidence that these issues were addressed. Further, CHPRC nuclear safety staff have stated that no USQ screenings or evaluations address these issues. While CHPRC has analyzed the potential rupture of the new 750,000 gallon water tank and concluded that the basin is protected from such occurrence by topography, CHPRC did not address the potential increased flow through new water lines. Since being informed of the potential USQ issue, CHPRC has not entered the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203 (g).

The Assessment Team raised a second USQ question in that it remains unclear whether there was an adequate USQ evaluation covering the design change reducing the system from providing "a twelve inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW" to tying into the existing 8 inch loop around Building 142-K (CVDF), and use of a new 8 inch loop around 105-K West.

RL staff reviewed the USQ logs and found no evidence that the revision was addressed. In the course of this surveillance, CHPRC nuclear safety staff and management were asked "which USQ screening or evaluation is CHPRC relying on to support the change from 12 inch fire supply lines to 8 inch lines?" CHPRC staff responded that they were relying upon USQ-0025-2011. USQ-0025-2011 states that it reviewed DCN-KUP-073, which "modifies the fire line routing on the east side of CVDF and adds a fire hydrant south of 105-KW. The proposed revision does not conflict with the water system upgrade in Section 2.9.1.7 of the FSAR."

However, the proposed revision does conflict with requirements of the FSAR, which states:

> The planned system will provide a new water supply for the 100K Area . . . . The planned fire suppression water distribution system will provide a 12 inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW. Existing piping exterior to Building 105-KW will be replaced with a new loop, providing six new fire hydrants and the water supply to the Building 105-KW administrative area automatic sprinkler system. A single 12 inch fire main will serve facilities in the central corridor (1724-K, MO-

> 500, and hydrants in the central corridor) and on the east side of the 100K Area (MO-293, and hydrants on the east side, including hydrants in the vicinity of Building 105-KE). Normal system pressure will be maintained by new service water pumps, which will be sized and controlled to maintain system pressure at a level comparable to that provided by the existing system (approximately 120 psi)."

Facility Safety Analysis Report, Sec. 2.9.1.7.

USQ-0025-2011 addresses the fire line routing, but does not address the revision from 12 inch fire mains and loops to 12 inch mains and 8 inch loops. Therefore, there does not appear to be a USQ evaluation which covers the reduction from providing a "12 inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW" to tying into the existing 8 inch loop around Building 142-K (CVDF).

DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

CHPRC did calculate that the revision would still provide adequate water supply to CVDF (DD-47929, Revision 0, and dated 12/27/2010). The calculation was USQ screened October 20, 2010. Thus the USQ Screen 0245-2010, which specifies calculation DD-47929, Revision 0, was performed 2 months before the date of the document it screened against. This conflict in dates remains unresolved. Therefore, this team cannot determine what was reviewed in the USQ screening. Exhibit 58.

Both DD-47929 and USQ screen 1245-2010 were performed before the revision was tied in to the existing 8 inch water loop, therefore the USQ process was followed, but the adequacy of this process is in question because USQ Screen 0245-2010 relied upon a calculation which had not been done.[17] Resolution of these issues merits further inquiry, and that inquiry is recommended.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

[17] Work packages examined during the course of this Surveillance establish that CHPRC originally intended to connect the new fire water system components to the old fire suppression system on September 28, 2010. At that point in time no USQ had been performed. The planned connections were not made when CHPRC executive management issued, at the request of a Project Fire Protection Engineer, a Stop Work order to facilitate addressing other problems affecting the reliability of the fire water delivery system. All indications are that absent this unrelated Stop Work order, the new components would have been connected to the old system without first performing a required USQ analysis.

Finding: S-11-EMD-PRC-001-F12

CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Requirements:

1. DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

2. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

3. PRC-PRO-PM-24889, *Project Initiation and Execution*, Section 5.8 and 6.1

4. PRC-PRO-PM-25000, *Project Execution Plans*

5. PRC-PRO-CN-14990 *Construction Management* Section 3.3.3.1 and 3.3.3.2

6. PRC-MP-CN-28049 *Construction Procedure Manual* Section 3.12

7. PRC-GD-WKM-12116 *Work Planning Guide* Figure 1

Discussion:

The 100K IUUP began construction activities without a required PEP. The Project continued on with construction for over three months before a final PEP was released. By that time substantial construction on both the water treatment system and the fire water system had occurred, and design for the fire water system was known to contain defects. The lack of a PEP was documented in an independent assessment conducted by the CHPRC Performance Oversight organization.

On April 14, 2010 the CHPRC Manager of Performance Oversight sent the *Final Report, Independent Assessment Of Engineering, Projects And Construction, CHPRC-PO-IA-10-02* to the CHPRC Vice President of Engineering, Projects, and Construction (EPC). This performance based independent assessment was conducted to evaluate EPC's implementation of programs, procedures, and policies as they relate to conduct of work. The assessment focused on the adequacy, compliance, and in-field execution of work activities and processes. The assessment made a number of findings including:

> 100K Utilities Upgrade Project PEP was in continuous revision without issuance of a controlled document. This practice was out of compliance with PRC-PRO-PM-25000, Project Execution Plans, Rev 1, Chg 0.

Exhibit 51.

The assessment also included a finding regarding another CHPRC project operating with an outdated PEP and stated, "The PEP was to be updated as changes occurred and at a minimum prior to the start of each phase of project execution as required by PRO-PM-24899, Project, Section 5,8 and PRC-PRO-PM-25000, Section 3.2." This finding was also applicable to the 100K IUUP as it continually changed without the benefit of a final PEP, or any updates as the project evolved. *Id.*

As a result of the assessment a CHPRC Condition Report Form was generated. This report assigned a significance level of "Track Until Fixed" to this item. The explanation for this level is stated as:

> This condition is screened as a Track Until Fixed (TUF).
>
> The stated condition documents a non compliance with the requirements of PRC-PRO-PM-24889. The CR does not document where the subject condition has resulted in an adverse effect upon the project. However, actions will need to be taken to correct the documented deficiencies. The screening level as a TUF is assigned to this CR which will require that a cause be identified and documented. This CR will also document the actions taken to address the subject condition.

Exhibit 52.

The condition report written on April 13, 2010 and Action #3 addresses the IUUP PEP. On June 30, 2010 the action item assignee wrote an e-mail message addressed to the CHPRC Corrective Action Management. This e-mail requested an extension for completion of the PEP and states:

> Please extend the above action due date to 7/22/2010 due to competing priorities and resource unavailability. The proper resources have now been applied and the action will be completed by the new due date.

Exhibit 53.

The PEP was finally released on July 29, 2010. The document is signed by the Responsible Manager and the Information Owner/Author Requestor. Under Section 3.4, "Funding Profile" the total project cost is $23,380,700. According to Section 5.8 of PRC-PRO-PM-24889 *Project Initiation and Execution* the CHPRC President's Office or the EPC Vice President is the approval authority for PEP's for projects with a total project cost of $20M to $100M. The PEP does not address whether the CHPRC President or the EPC Vice President formally approved of the final PEP and no evidence of such approval has been found.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F13

CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

Requirements:

1. National Historic Preservation Act (NHPA), 16 USC § 470-1, et seq.
2. Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC § 3001, et seq.
3. 10 CFR 1022, *Compliance with Floodplain and Wetland Environmental Review Requirements*
4. 36 CFR 60, *National Register of Historic Places*
5. 43 CFR 10, *Native American Graves Protection and Repatriation Regulations*
6. DOE M 450.4-1, *Integrated Safety Management System Manual,* and CRD attached thereto.
7. PRC-PRO-EP-15333, *Environmental Protection Processes*
8. PRC-RD-EP-15332, *Environmental Protection Requirements*
9. DOE-0344, *Hanford Site Excavating, Trenching and Shoring*

Discussion:

On March 16, 2010, the 100K Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP. The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." This permit was signed by, among others, the Design Authority/Technical Representative, ECO, Water Utilities Representative and the Facility/System Owner. Exhibit 19. The construction activities covered by this Excavation Permit commenced on April 13, 2010. Exhibit 21.

CHPRC's procedures correctly identify the contractor's Cultural Resources review compliance obligations by stating that a Cultural Resources Compliance review is required:

> . . . when a proposed activity could affect a cultural or historical property or structure, disturb a Native American artifact, or occur

> within one-quarter mile of the Columbia River. A . . . review/report shall be completed before soil disturbance.

PRC-RD-EP-15332, Sec. 2.55.3. The 100K IUUP *Functional Design Criteria* document also recognizes this requirement by stating:

> All aspects of the outdoor design shall compliment the special requirements to protect cultural resources, wildlife activities and habitat, and environment and any special requirements as identified in the Ecological/Cultural Resource Review. This will be implemented through compliance with PRC-PRO-SH-090 [replaced by DOE-0344], Excavating, Trenching, and Shoring, which requires these reviews as part of the excavating permit process.

100K Water, Electrical, and KW Basin HVAC Upgrades Functional Design Criteria, KBC-41961, Sec. 4.2.12.[18] ECOs are prohibited from signing excavation permits until all environmental approvals, include cultural resources reviews have been obtained. *See* DOE-0344, Sec. 5.3 and Appendix E, Block 11 instructions.

A Cultural Resources Review addressing the 100K raw water line was performed by DOE's Richland Operations Office Cultural Resources Program Manager, and a determination was made releasing the 100K IUUP to proceed on April 22, 2010. Exhibit 54. The April 22, 2010 authorization expressly covered the cross site raw water line (i.e., work being performed outside the fenced boundary of the 100K Area) and (inside the fence) construction of "Water filtration . . . units . . . to provide sanitary water supply for . . . trailers, portable restrooms and shower trailers." Construction activities involving disturbance of soil inside the 100K fence actually began on April 13, 2010. The Hanford Site data Cultural Resources Data Base maintained by Mission Support Alliance has been searched, and no approval (No Potential to Cause Effect determination or any other appropriate determination) for work inside the fence on the potable and fire water system has been located.

After reviewing a preliminary draft of this Report, CHPRC informed RL that the Contractor had relied upon a "blanket cultural resources review" titled "*Cultural Resources Review of Ground Disturbing Activities Associated with the Decontamination, Decommissioning and Demolition of Spent Nuclear Fuel Facilities at 100K, Hanford Site, Richland, Washington (HCRC# 2003-100-021)*," issued by PNNL on May 17, 2004 as the basis for issuing its excavation permit on March 18, 2010. The cultural resources review cited by CHPRC covered thirty-four existing buildings in the 100K Area scheduled for removal under various CERCLA remedial actions. It does not discuss any construction of new buildings. CHPRC also provided e-mail documents that establish that the 100K Area ECO verified with PNNL on March 30, 2010 (twelve days after

[18] While both the cited document and CHPRC's environmental procedure PRC-PRO-EP-15333 refer to PRC-PRO-SH-090, it cannot be found in the current lists of CHPRC Procedures. It may have been superseded by DOE-0344, Rev 2, Nov 2010, however confirming this assumption was beyond the scope of this Surveillance. None the less, this error may be an additional indicator of the inadequacy of CHPRC's quality control systems.

signing the excavation permit) that the blanket review document as still valid for its intended purposes.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F14

CHPRC did not meet contractual requirements requiring the maintenance of an active Memorandum of Understanding between CHPRC and the Hanford Fire Marshal's Office.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section E (3) b – "Other contractors (PRC, RCC, OccMed) must institutionalize and recognize the HFM's authority as contained in the Authority, Responsibilities, Duties, and Enforcement section of the DOE approved Hanford Fire Marshal Charter. Prime contractors performing under a different contract from under which the Fire Marshal's Office performs shall form an agreement or memorandum of understanding with the Hanford Fire Marshal to implement this authority."

2. 10 CFR 122, *Quality Assurance Criteria*, Section A.1. – The Quality Assurance Program must address the following management, performance, and assessment criteria: "Establish an organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work."

3. DOE O 414,1C, *Quality Assurance*, Attachment 2, Section 3.a.1 mandates that Management/Programs must "Establish an organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work."

Discussion:

CRD O 420.1B, Facility Safety, Supplemented, rev 4, Section E.3.b, DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.a.1, and 10 CFR 122, Quality Assurance Criteria, Section a.1 requires that an active MOU exist between CHPRC and the HFMO. No active MOU exists.

The RL Supplemental Contractor Requirements Document (SCRD) 0 420.1 B delineates the general functions of the HFMO. The SCRD also references the Fire Marshal roles and responsibilities as contained in the Authority, Responsibilities, and Duties of the Hanford Fire Marshal (a.k.a. Fire Marshal Charter), and requires RL contractors to recognize and institutionalize the HFM's authority. Through the Fire Marshal Charter, issued by the RL and ORP, the HFM has the responsibility to ensure a reasonable level of fire prevention and

protection for contractors and employees on the Hanford Site. This charter states that Hanford contractors and DOE will support the HFM in the enforcement of codes and standards and execution of the HFM duties on the site. The HFM also serves as the first level of Authority Having Jurisdiction (AHJ) on behalf of the DOE.

A MOU titled *Memorandum Of Understanding, Rev. 0, Between The Hanford Fire Marshal's Office And Other Contractors With Fire Protection Engineers Designated As Deputy Fire Marshals* (CHPRC-080081) was issued on July 17, 2009, but as a result of inaction expired one year later. The MOU itemized the functions of the Hanford Fire Protection Program and distributed these functions between the HFM and the FPEs designated as a DFM and assigned to contractors. The blue sheet cover page of the MOU stated that it should be updated and re-issued in one year. The MOU between CHPRC and the HFM expired and was never reinstated.

The 100K IUUP did not recognize the authority of the HFM or CHPRC FPEs designated as a DFM, nor did they understand the different roles and responsibilities of both parties. CHPRC generated several Condition Reports (2010-3049, 2010-3373, 2010-3375, and 2010-3376) which identified the lack of understanding of the roles and responsibilities of the HFM and DFMs, as one of the causes that resulted in construction of defective design and project delays at the 100K IUUP. On April 6, 2011, a *100K Infrastructure Water Project Post-Job Lessons Review Value Management Session* was conducted. One of the path forward actions of the session was to "review/clarify and define fire protection roles and responsibilities." 100K IUUP management did not realize that an expired MOU with the HFM existed, nor did they realize the contract requirements to keep the MOU current and implemented in their company. Had the MOU been in place and implemented, many of the issues identified in this surveillance would not have taken place.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F15

CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate Lockout/Tagout (LOTO) notification and briefings.

Requirement(s):

1. DOE-0336, *Hanford Site Lockout/Tagout* program.

2. DOE M 450.4-1, *Integrated Safety Management System Manual,* and CRD attached thereto.

Discussion:

CHPRC had not ensured that the prime subcontractor safety representative for the 100-K Potable Water Treatment Facility construction site had completed the training requirements of the Hanford Site LOTO program prior to start of work. Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1, paragraph I. states in part, "Prior to start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RL-92-36 Rev. 1, and certification that all training is current." The RL Electrical SME asked the Grant Safety Representative in September 2010 if he was ever trained to DOE-0336, *Hanford Site Lockout/Tagout* program, and he said that he was not. The SME asked the Grant Construction Manager explain how the Safety Representative could provide adequate safety oversight of other Grant construction workers and ensure compliance to DOE-0336 if he was not knowledgeable of the associated requirements. The Manager was unable to provide an explanation.

CHPRC did not ensure that the prime subcontractor LOTO point of contact for the 100-K Potable Water Treatment Facility construction site knew when and where authorized worker tags were applied using the eight criteria per DOE-0336. DOE-0336 Section 5.13, states in part, "Designate a qualified member(s) of the Controlling Organization (CO) to be the lockout/tagout point of contact for the outside contractor for facilities that have a physical interface with an existing facility. Determine which of the following methods of lockout/tagout is to be used: Use of Authorized Worker (AW) locks and tags alone when all of the eight criteria listed below are met." The RL Electrical SME asked the Grant Safety Representative and Construction Manager if the Potable Water Treatment Facility primary disconnect was LOTO, and the SME was informed by both sources that the primary disconnect was not LOTO, but rather individual branch circuits were LOTO. During the walkthrough in September 2010 the SME observed that the primary disconnect was LOTO by two authorized worker tags. It appeared that the Grant Construction Manager (who had primary responsible for LOTO at this site) did not have good configuration control.

Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 4.9, paragraph B. states in part, "The Contractor will develop and maintain a work site Job Safety Analysis in accordance with PRC-PRO-SH-40078." In September 2010, the JSA for this construction site did not identify (LOTO) as a potential hazard. The Treatment Plant had power for over three weeks, and the JSA still had the "no" block re: LOTO as a hazard. When this was brought to the attention of the Grant Safety Representative, he stated that updates to the JSA were in the construction trailer and had not yet been added to the JSA package. It was the SME's understanding that Grant has only one JSA for this construction site, and so the construction workers who had signed this JSA had performed work during the previous three weeks without an adequate JSA advising them of the LOTO hazards.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O01

CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).

Discussion:

On June 18, 2009 the 100K Area ECO sent an e-mail message to the CHPRC NEPA SME asking for help in obtaining a NEPA activity based CX determination. This message was copied to the IUUP Project Manager as well as the CHPRC EP Manager and other relevant individuals. This message also attached an EAS Form which identified construction or modifying a public water, raw water, or export water system as part of the work activities to be completed. Exhibit 7. No response to this e-mail was returned to the 100K Area ECO from either the CHPRC NEPA SME or the CHPRC EP Manager.

On August 24, 2009, the 100K Area ECO sent a second e-mail message to the CHPRC EP Manager which states:

> I have never been involved with installing a potable water treatment system . . . so I am heading into new territory. I checked out 15333, section 5.7 (see below). I also need your help as well. Thanks. If you could get me answers by COB, Wednesday, August 26, 2009. . . .

Exhibit 8.

The ECO told the Assessment Team that he sent two e-mails on this subject to the CHPRC EP Manager, but received no response to either e-mail. Had the CHPRC EP Manager responded in a timely manner to the e-mails, it would have been more probable that all applicable environmental requirements would have been identified and complied with.

RL Lead Assessor Closure Required: YES [x] NO [ ]

Observation: S-11-EMD-PRC-001-O02

Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

Discussion:

During the Assessment Team's interview with the individual occupying the role of IUUP Project Manager from November 2009 to April 2010, he stated that he verbally requested that an independent quality assurance inquiry be done of the project prior to start of construction. A review of the CHPRC Integrated Evaluation Plan (IEP) Assessment Report data base reveals that no such inquiry was ever conducted by any CHPRC QA organization. Had an inquiry been conducted, in all likelihood, it would have revealed the lack of compliance with the applicable environmental requirements. This, in turn, would have resulted in a correction of these deficiencies prior to start of construction. Unfortunately, no such inquiry occurred.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O03

CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

Discussion:

On April 7, 2010 a PRB for the 100K IUUP was conducted for work that included "Inside the Fence" activities. The materials presented to the PRB on April 7 contained no mention of applicable environmental or other regulatory requirements. Exhibit 55. Later that day, the 100K IUUP Construction Manager sent an e-mail message to the 100K IUUP Project Director stating that the PRB had approved construction. Exhibit 56. On April 21, 2010 a second PRB was convened to review 100K IUUP work scope not reviewed by the first PRB on April 7. The additional work scope included an import water line and 100K fire water and potable water supply line. As with the materials presented to the first PRB, the materials presented on April 21 contained no mention of applicable environmental or other regulatory requirements. Exhibit 57. The PRB again approved commencement of construction.

Had a regulatory requirements check list, or some other form of review or evaluation of environmental and fire safety regulatory requirements been included in the PRB review process, compliance failures might have been avoided.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O04

After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorized the event.

Requirement(s):

1. DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information,* and CRD attached thereto.

2. DOE O 226.1A (Supp Rev A), *Implementation of Department of Energy Oversight Policy,* and CRD attached thereto.

3. DOE M 231.1-2 (Supp Rev 8), *Occurrence Reporting and Processing of Operations Information,* and CRD attached thereto.

4. DOE Contract Number DE-AC06-08RL14788, Section H.19, *Environmental Responsibility*, and Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

5. PRC-PRO-EM-060, *Reporting Occurrences and Processing Operations Information*

Discussion:

DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information (*Occurrence Reporting Manual*)*, and PRC-PRO-EM-060, *Reporting Occurrences and Processing Operations Information* specify CHPRC's occurrence reporting requirements and obligations. The requirements of DOE M 231.1-2 are a contractual obligation created by CHPRC's Contract with DOE. *See* DOE Contract Number DE-AC06-08RL14788 generally, and its Table J.2.8 more specifically.

On June 8, 2010, CHPRC filed with DOE Occurrence Report Number EM-RL-CHPRC-GENLAREAS-2010-0013 (Occurrence Report). The Occurrence Report disclosed CHPRC's discovery that it had began construction of 100K IUUP facilities without obtaining a NEPA determination from the Hanford NEPA Compliance Officer, and construction approvals required from the WDOH. Exhibit 49. The Occurrence Report lists the date of discovery of the incidents reported as June 4, 2010, characterizes the incidents as a Management Concern, and assigns a significance level of SC4.

The significance level assigned in the Occurrence Report may not be consistent with the requirements of the Occurrence Reporting Manual. RL acknowledges that when an event is classed as a Management Concern, the assignment of Significance Category level is a somewhat subjective matter that may be subject to judgment errors. The Manual defines five levels of significance to be used in occurrence reporting. More specifically, it defines category 2, 3 and 4 as follows:

> Significance Category 2. Occurrences in this category are those that are not Operational Emergencies and that have a moderate impact on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
>
> Significance Category 3. Occurrences in this category are those that are not Operational Emergencies and that have a minor impact on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
>
> Significance Category 4. Occurrences in this category are those that are not Operational Emergencies and that have some impact on safe facility operations, worker or public safety and health, public/business interests.

DOE M 231.1-2, Sec. 1.2 d., e. and f. Because the incident reported involved at least a minor impact to "regulatory compliance," it may have been appropriate to assign a significance level of at least Category 3.

For either a Significance Category 3, or 4 event, the DOE Manual requires that a written occurrence report be filed with DOE within two working days of discovery of the incident. DOE M 231.1-2, Sec. 1.4.2 (c) and (d). The Occurrence Report lists the date of discovery in the instant matter as June 4, 2010. The DOE Manual defines the date and time of discovery as:

> The discovery date and time is when the facility staff discovered or became aware of the event or condition. The facility staff is those personnel assigned to the facility and cognizant of the area in which the event or condition is identified.

DOE M 231.1-2, Sec. 13.d. CHPRC actually discovered the conditions disclosed by the Occurrence Report on or about May 18, 2010, thirteen business days before CHPRC filed its Occurrence Report. The Occurrence Report section titled "Description of Occurrence" states:

> . . . On May 18, 2010 it was determined that construction had begun prior to approval of the project report by WDOH . . . . In this case, the approval of the National Environmental Policy Act (NEPA) Categorical Exclusion (CX) submittal was determined to have not yet been obtained. . . .

Exhibit 49, p. 2, Section 15. CHPRC's knowledge as of May 18, 2010 of its failure to obtain WDOH approvals prior to commencing construction is also documented in its e-mail traffic. Exhibit 28.

A Significance Category 3 Occurrence Report must assign a cause and identify appropriate corrective action. *See* DOE 231.1-2, CRD Sec. 1.5 b. and DOE M 231.1-2, Sec. 11. Because it

was assigned a Category 4 rating, the Occurrence Report contains no information regarding a determination of cause, nor any corrective action required or taken. Exhibit 49, Items 22 and 25.

The "Description of Occurrence," Sec. 15 contained in the Occurrence Report neither fully, nor accurately discloses all relevant information regarding the incidents. While the language of Sec. 15 accurately discloses that CHPRC learned on May 18, 2010 of its failure to obtain NEPA and WDOH approvals prior to commencing construction of 100K IUUP facilities, it fails to clarify, as differing from the 200 Area project discussed in this same Sec. 15, that applications for the required approvals had also not even been made prior to commencement of construction activities. Sec. 15 also states: "... CX [NEPA] approval was immediately obtained, and the Project Report submitted to WDOH for approval." In fact, the Project's NEPA CX determination was not issued until May 26, 2010, and the Project Report was not submitted to WDOH until June 1, 2010. Exhibits 48 and 50 respectively.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Contractor Self-Assessment: CHPRC did not perform a formal self-assessment of the issues at the 100K IUUP that eventually resulted in CHPRC Senior Management issuing a Stop Work. The Assessment team concluded that the Contractor's self-assessment activities at the 100K IUUP were generally ineffective.

Contractor Self-Assessment Adequate: **YES [ ]** **NO [x]**

Contractor Management To Be Briefed:

CHPRC President
CHPRC Vice-President, Environmental Protection and Strategic Planning
CHPRC Vice-President, Safety

S-11-EMD-PRC-001

INDEX OF EXHIBITS

Exhibit-1	*Letter*, W.A. Rutherford, Director, Site Infrastructure Division, Department of Energy, Richland Operations Office, to President Westinghouse Hanford Company, HANFORD DRINKING WATER SYSTEMS, April 11, 1995	Page 62
Exhibit-2	*E-mail*, Douglas E. (Doug) Wertz, to Colburn E. Kennedy, cc: Bruce R. Johns, Walter J. (John) Geuther, Douglas C. (Doug) Bragg, VE SESSIONS – 100K AREA UTILITIES, April 13, 2009	Page 63
Exhibit-3	*E-mail*, Colburn E. Kennedy, to Douglas E. (Doug) Wertz, cc: Richard A. Harrington, RE: VE SESSIONS – 100K AREA UTILITIES, April 16, 2009 @ 9:47 AM	Page 63
Exhibit-4	*E-mail*, Douglas E. (Doug) Wertz, to Colburn E. Kennedy, RE: VE SESSIONS – 100K AREA UTILITIES, April 16, 2009 @ 10:03 AM	Page 63
Exhibit-5	*E-mail*, Christine E. Sumner, to Richard A. Harrington, Colburn E. Kennedy, Scott W. Story, Christopher Lucas, Michael R. Koch, Steven Moore, Scott (EU) Baker, Susan K. Omberg Carro, Jay R. Mills, John R. Parker, Timothy J. Davison, Steven N. Balone, Randall N Krekel, Mike Swartz, Douglas E. (Doug) Wertz, Steven P. Burke, Mark A. Wright, David B. Anderson, Floyd M. Maiden, Alastair J. MacDonald, colburn.kennedy@ch2m.com, 100K Infrastructure Project Charter Workshop, Undated	Page 64
Exhibit-6	*Project Scope Statement Sheet – 100K Infrastructure Project Charter Workshop*, May 5-6, 2009	Page 67

Exhibit-7	*E-mail with EAS form Attachment*, Brett M. Barnes, to Michael T. Jansky, cc: Darrell J. Riffe, Colburn E. Kennedy, Scott W. Story, David J. (Dave) Watson, Richard H. Engelmann, ACTIVITY – SPECIFIC CX FOR THE REROUTING OF 100K BASIN UTILITIES AND HVAC, June 18, 2009	Page 68
Exhibit-8	*E-mail*, Brett M. Barnes, to Richard H. Engelmann, FW: 100K Follow Up, August 24, 2009	Page 73
Exhibit-9	*Meeting Notes*, Sam E. Wajeeh, to Steve Moore (CHPRC), Sam Wajeeh (CHPRC), Tom Ashley (ARES), Elizabeth Bowers (DOE), Brett Barnes (CHPRC), Mike Wilson (DOH), New Water Treatment System for the 100K Basin, October 6, 2009	Page 75
Exhibit-10	*E-mail*, Elizabeth M. (Liz) Bowers, to Steven N. Balone, cc: Michael R. Koch, Dickie J. Ortiz, Thomas K. Teynor, Usama E. Wajeeh, Colburn E. Kennedy, RE: Meeting with Department of Health on Proposed Water Plant, October 7, 2009	Page 77
Exhibit-11	*PRC-PRO-AC-123, Requesting Materials and Services, Attachment 5, Functional & Project Concurrence Checklist*, See Exhibit 12 for date	Page 78
Exhibit-12	*E-mail*, Laurie L. Lafferty, to Scott W. Story, cc: David E. Fink, RE: Attachment 5 APPROVALS, December 21, 2009 @ 1:06 PM	Page 94
Exhibit-13	*E-mail, Scott W. Story, to Laurie L. Lafferty,* RE: Attachment 5 APPROVALS, December 21, 2009 @ 1:55 PM	Page 94

Exhibit-14	*E-mail*, Usama E. Wajeeh, to Brett M. Barnes, cc: Scott W. Story, David E. Fink, Colburn E. Kennedy, 100K Water Infrastructure Project-Potential Project Risk, December 16, 2009 @ 1:50 PM	Page 95
Exhibit-15	*E-mail*, Brett M. Barnes, to Dottie L. Norman, cc: Scott W. Story, David E. Fink, Colburn E. Kennedy, Usama E. Wajeeh, Jennie R. Seaver, RE: 100K Water Infrastructure Project-Potential Project Risk, December 16, 2009 @ 2:20 PM	Page 95
Exhibit-16	*Letter with Attachment*, John G. Lehew, President and Chief Executive Officer CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, REQUEST FOR WAIVER OF PILOT STUDY FOR NEW 100K POTABLE WATER FACILITY, January 11, 2010	Page 97
Exhibit-17	*Letter*, John D. Phillips, Contract Specialist CH2MHILL Plateau Remediation Company, to Watts, Construction, Inc., CONTRACT NUMBER 36538 100-K RIVER WATER ISOLATION PROJECT IMPORT WATER LINE NOTICE TO PROCEED, January 28, 2010	Page 108
Exhibit-18	*Letter*, Michael D. Wilson, PE Regional Engineer Washington State Department of Health, to Usama E. Wajeeh, CH2M Hill Plateau Remediation Company, Subject: Energy, Dept of/100K; PWS ID # 00177J; Benton County Justification to Avoid Pilot Study for New 100K Potable Water Facility DOH Project #10-0207A, February 17, 2010	Page 109
Exhibit-19	*CHPRC HANFORD SITE EXCAVATION PERMIT*, Brett M. Barnes et al, March 18, 2010	Page 111

Exhibit-20	*Letter, Noreen A. Clifford, Contracting Officer CH2MHILL Plateau Remediation Company, to George A. Grant, Inc.,* CONTRACT NUMBER 36534-31 ARRA – POTABLE WATER TREATMENT FACILITY CONTRACT AWARD DOCUMENTS TRANSMITTAL, April 7, 2010	Page 112
Exhibit-21	*CHRPC-CONSTRUCTION DAILY ACTIVITY REPORT,* Klint Johnson, Import waterline and 100K FW&PW lines, April 13, 2010	Page 121
Exhibit-22	*CHPRC-CONSTRUCTION DAILY ACTIVITY REPORT,* Klint Johnson, Import RAW waterline, April 28, 2010	Page 124
Exhibit-23	*EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS Compiled from IDMS, April 5, 2011*, Week Ending February 12, 2010 to Week Ending March 25, 2011	Page 127
Exhibit-24	*Meeting Summary*, Brian Dixon, Meeting with Washington State Department of Health Office of Drinking Water, Spokane Washington May 18, 2010, May 18, 2010	Page 148
Exhibit-25	*Root Cause Analysis Report*, EN Dodd III, PW Martin, DP Kimball, VM Pizzuto, Root Cause Analysis Report Potential Adverse Trend-Environmental Regulatory Requirements for Construction Projects Not Met EM-RL-CPRC-GENLAREAS-2010-0013, October 19, 2010	Page 150
Exhibit-26	*E-mail*, Max L. Edington, to Kurtis L. Kehler, cc: Colburn E. Kennedy, Dottie L. Norman, Usama E. Wajeeh, 100 K Water System Replacement Project, May 18, 2010 @ 3:33 PM	Page 167
Exhibit-27	*Letter*, John G. Lehew III President and Chief Executive Officer CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, SUBMITTAL OF PROJECT REPORT FOR 100K	Page 168

POTABLE WATER FACILITY, June 1, 2010

Exhibit-28	*E-mail*, Moses Jaraysi, to John G. Lehew, Kurtis L. Kehler, Colburn E. Kennedy, cc: Allan E. Cawrse, FW: Fire System Applicability, June 2, 2010	Page 169
Exhibit-29	*E-mail*, Usama E. Wajeeh, to Colburn E. Kennedy, cc: Allan E. Cawrse, Kurtis L. Kehler, Dottie L. Norman, Max L. Edington, FW: Discussion with Mike Wilson (WDOH) Regarding 100K Project Report Submittal, June 7, 2010	Page 172
Exhibit-30	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh PE CH2MHILL, Energy, Dept Of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System Project Report ; DOH Project # 10-0207B, June 16, 2010	Page 173
Exhibit-31	*Letter*, Max L. Edington, Project Manager 100K D&D CH2MHILL Plateau Remediation Company, to M.D. Wilson Regional Engineer, Washington State Department of Health, SUBMITTAL OF CONSTRUCTION DOCUMENTS FOR 100K POTABLE WATER FACILITY, June 23, 2010	Page 174
Exhibit-32	*Letter*, Michael D. Wilson, Regional Engineer Washington State Department of Health, to Usama E. Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System Project Report; DOH Project #10-0207B, July 8, 2010	Page 175
Exhibit-33	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy,Dept Of/100K; PWS ID #00177J; Benton County Construction Documents For 100K Potable Water Facility; DOH Project #	Page 177

10-0207C, July 22, 2010

Exhibit-34	*Letter*, Max L. Edington, Project Manager 100K D&D CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, SUBMITTAL OF WDOH PROJECT REPORT COMMENT RESPONSE FOR 100K POTABLE WATER FACILITY, July 22, 2010	Page 178
Exhibit-35	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Potable Water Facility Construction Documents DOH Project #10-0207C, August 3, 2010	Page 180
Exhibit-36	*Letter,* Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System; DOH Project #10-0207B; APPROVAL, August 5, 2010	Page 183
Exhibit-37	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K Potable Water Facility; DOH Project #10-0207C APPROVAL, September 15, 2010	Page 184
Exhibit-38	*Letter*, Max L. Edington, Area Manager 100K D4 CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, Department of Energy 100K Water Treatment Facility PWS ID# 00177J; Benton County; Operational Performance Testing Report; DOH Project #10-0207D,	Page 185

January 27, 2011

Exhibit-39	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept Of/100K; PWS ID #00177J; Benton County OTP Report; DOH Project # 10-0207E, February 1, 2011	Page 186
Exhibit-40	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID # 00177J; Benton County Operational Performance Testing Report; DOH Project #s 10-0207D-10-0207E APPROVAL, February 18, 2011	Page 187
Exhibit-41	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept Of/100K; PWS ID #00177J; Benton County Operational And Maintenance Manual; DOH Project # 11-0313, March 10, 2011	Page 188
Exhibit-42	*E-mail,*, Michael Wilson / EH (DOH), to Max L. Edington, Steven Moore, FW: Energy, Dept of/100K; PWS ID #00177, Benton County: Membrane WTP Start-Up Approval, March 16, 2011	Page 189
Exhibit-43	*E-mail*, Dottie L. Norman, to Brett M. Barnes, Scott W. Story, FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018, April 23, 2010 @ 12:17 PM	Page 191
Exhibit-44	*E-mail*, Brett M. Barnes, to Michael T. Jansky, FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC #2009-600-018, April	Page 191

26, 2010 @ 7:25 AM

Exhibit-45	*E-mail*, Michael T. Jansky, to Brett M. Barnes, Dottie L. Norman, RE: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRD#2009-600-018, April 26, 2010 @ 7:45 AM	Page 191
Exhibit-46	*E-mail*, Michael T. Jansky, to Michael T. Jansky, Woody Russell, RE: CX FOR K AREA Utilities Reroute, May 24, 2010 @ 6:39 AM, and *e-mail*, Michael T. Jansky, to Woody Russell, CX FOR K AREA Utilities Reroute, April 28, 2010 @ 12:27 PM	Page 192
Exhibit-47	*E-mail*, Michael T. Jansky, to Woody Russell, RE: CX FOR K AREA Utilities Reroute, May 25, 2010 @ 6:15 AM	Page 192
Exhibit-48	*Categorical Exclusion for 100 K Area Utilities Reroute Hanford Site, Richland, Washington (an attachment to Exhibit 46)*, April 28, 2010	Page 194
Exhibit-49	*Occurrence Report EM-RL-CPRC-GENLAREAS-2010-0013*, June 8, 2010	Page 202
Exhibit-50	*EPC-40524, Rev. 1 100K Infrastructure Project Execution Plan*, July 29, 2010	Page 206
Exhibit-51	*INTEROFFICE MEMORANDUM with Attachment FINAL REPORT, INDEPENDENT ASSESSMENT OF ENGINEERING, PROJECTS AND CONSTRUCTION, CHPRC-PO-IA-10-02*, S.J. Turner, Manager of Performance Oversight CH2MHILL Plateau Remediation Company, to K.A. Dorr, EPC CH2MHILL Plateau Remediation Company, April 14, 2010	Page 254

Exhibit-52	*CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-1080*, Bonnie S. Harder Initiator, Deficiencies were identified in the implementation of the Project Execution Plan (PEP) process as required by PRC-PRO-PM-24889, Project Initiation and Execution, April 13, 2010	Page 290
Exhibit-53	*E-mail*, Daniel P. Kimball, to ^CHPRC Corrective Action Management, CR-2010-1080 Corrective action # 3, June 30, 2010	Page 293
Exhibit-54	*E-mail*, Annabelle L. Rodriquez, to Scott W. Story, Colburn E. Kennedy, cc: Steven N. Balone, Thomas K Teynor, Annabelle L. Rodriquez, Ellen L. Prendergast-Kennedy, April 22, 2010	Page 191
Exhibit-55	*Presentation*, Dave Fink, to 100-K Utility Upgrades Project PRB for: Inside the Fence Water Lines task 1, 105 KW Fire Water Supply Line, A9 Switch Yard Preparation, April 7, 2010	Page 294
Exhibit-56	*E-mail*, David E. Fink, to Kurtis L. Kehler, Colburn E. Kennedy, cc: Kent A. Dorr, Stephen R. Douglass, Good News the PRB Approved the following for Construction with Attachment image001.png, April 7, 2010 @ 3:20 PM	Page 316
Exhibit-57	*Presentation*, Dave Fink, to 100-K Utility Upgrades Project, April 21, 2010	Page 317
Exhibit-58	*E-mail*, Gregory Morgan, to Gail A. Chaffee, cc: Thomas Teynor, Alan L. Ramble, Calvin E. Morgan, Roger Quintero, Mark W. Jackson, Burton E. Hill, Dale C. West, Michael R. Koch, Dennis A. Clapp, FW: USQ in Support of New Water System, April 14, 2011 @ 3:27 PM, and *e-mail*, Gail A. Chaffee, to Gregory Morgan, cc: Thomas Teynor, Alan l. Ramble, Calvin E. Morgan, Roger Quintero, Mark Jackson,	Page 352

Burton Hill, Dale West Michael R. Koch, Dennis (CONTR), Richard E. Raymond, RE: USQ in Support of New Water System, April 14, 2011 @ 4:04 PM

Exhibit-59 *CRPRC-REVIEW COMMENT RECORD (RCR)*, Reviewers Susan Omberg Carro, Sam Wajeeh, Adam Moldovan, Richard Larson, 90% Design Review 100K Project, October 23, 2009 Page 357

Exhibit-60 *CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-2597*, Susan Omberg Carro Initiator, Installation of Fire Suppression System Without Required Design Approval, August 24, 2010 Page 372

Exhibit-61 *CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-3049*, Don Eide Initiator, 100K- Fire Suppression System Field Work Stop Work (ARRA): SAC-2010-1169, September 29, 2010 Page 374

Exhibit-62 *CHPRC CONTRACTOR DOCUMENT SUBMITTAL FORM*, Lisa Smyser CHPRC Project Records Specialist, 100K Potable Water Treatment Facility Contract No. 36534 Release No. 031, Submittal Register No. 13125-02, Version 03, August 31, 2010 Page 380

Jackson, Dale E

From: Evans, David
Sent: Thursday, January 06, 2011 3:59 PM
To: West, Dale
Cc: Evans, David; Ashley, Clifford; Jackson, Dale; Hill, Burton
Subject: 100K Water Treatment Plant Surveillance draft 1/6/11
Attachments: S-11-SED-PRC-WTP.DTE & CAA Input Included.doc

Dale,
Attached is the latest (1/6/11) draft for your info, and review and comment when you start feeling better.
This incorporates your input, mine, and cliff Ashley. The first Finding Discussion is huge, but I wanted to get as much into the draft at this time as I could while I could still keep some chronological order on everything that happened (or did not happen but was required) on this complex issue. (b)(5)

(b)(5)

Dale Jackson indicated that he will be providing input in the near future.
I have no input from Jack Poe as he was not at the 100K Surveillance Planning meeting this week. I will follow up with him next week as tomorrow is a Hanford AWS Friday Off.
Hope things are going well for you.
Dave Evans
PAIC

Department of Energy
Richland Operations Office
Surveillance Report

Division: Safety and Engineering Division (SED)

Surveillant: **Dale West, RL Fire Protection Engineer**
Dale Jackson,
Cliff Ashley,
Jack Poe,
Dave Evans, PAI Corp, Team Member [dte rough draft 1/6/11]

(b)(5) **Surveillance Number: S-11-SED-PRC-** [redacted] ← SUBSEQUENTLY RENUMBERED TO: S-11-EMD-PRC-001

Date Completed: (b)(5) [redacted]

DEJ 3-15-12

Contractor: CH2M HILL PLATEAU REMEDIATION COMPANY (CHPRC)

Facility: 100K Water Treatment Plant Project

Title: Review of 100K Water Treatment Plant Project

Guide: FPS12.2

Surveillance Scope:

The objective of this surveillance was to evaluate the contractor's performance in complying with contractual requirements, state WAC requirements, DOE requirements, applicable codes and standards. and their own policies and procedures.

Surveillance Summary:

This surveillance reveals that (b)(5) [redacted]
Multiple examples (b)(5) [redacted]

The surveillance activities resulted in the identification of (b)(5) [redacted] findings and (b)([redacted] observations.

- **S-11-SED-PRC-XXX-F01** (b)(5) [redacted]
  (b)(5) [redacted]

BEST AVAILABLE COPY

- **S-11-SED-PRC-XXX-F02** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F03** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F04** (b)(5)
- **S-11-SED-PRC-XXX-F05** CHPRC (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F06** CHPRC (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F07** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F08** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F09** CHPRC (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-O01** CHPRC (b)(5) (b)(5)

Surveillance Results:

Finding: S-11-SED-PRC-XXX -F01

(b)(5)

Requirement(s):

1. 100 K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program, Section 1.1 states that, "this procedure applies to 100K Area facilities, including new

project design and construction, modification, alteration, and demolition of 100K Area facilities. It also applies to operations performed within the 100K Area by the CHPRC D&D Project and other organizations."
Section 3.14 states, "all construction, including modification of existing facilities, shall be in accordance with the requirements of MSC RD 9717, DOE-STD-1066, CRD 420.1B, HNF-36174, and applicable NFPA Codes and Standards."

2. CH2M Hill Requirements Applicability Matrix states, "the following Requirements Applicability Matrix Reports (RAM) are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, etc) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The RAM lists MSC-RD-9118, Fire Protection Design/Operations Criteria as satisfying the categories of 29 CFR 1910, Occupational Safety and Health Standards, and CRD O 420.1B Supplemented, rev 4, Facility Safety. The RAM lists MSC-RD-10606, Fire Protection Program Requirements as satisfying the categories of 29 CFR 1910, Occupational Safety and Health Standards, CRD M 231.1-1A, Environmental, Safety, and Health Reporting Manual, and CRD O 420.1B Supplemented, rev 4, Facility Safety.

3. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.1 states, "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits."

4. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.4 states, "Hanford Fire Marshal (HFM) – The HFM, who shall be a member of the HFD, shall have the authority to develop, administer and enforce the Fire Prevention Program for the MSC as directed by SCRD O 420.1B, Rev. 4, Facility Safety, and by RL approval of the HFM's Charter, which establishes the authority, responsibilities and duties of the HFM. The HFM's authority shall extend to all work performed under or on behalf of MSC. RL will support the HFM in enforcement of the codes and standards and execution of the HFM's duties as described below. NOTE: Whenever the title Fire Marshal is used, it is also intended to mean the Fire Chief or a representative designated as a Deputy Fire Marshal."
Section 2.4.2 states, "To support the development, administration and enforcement of the Fire Prevention Program the duties of the HFM shall include but not be limited to: Review and approval of new fire protection system designs and modifications/ upgrades to existing fire protection systems per MSC-PRO-8635, Review and Approval of Technical Documents."

5. DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

Discussion:

(b)(5)

(b)(5)

(b)(5)

(b)(5)

>>>>>>>>>>>>>>>>>>>>>>

(b)(5)

(b)(5)

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F02

(b)(5)

Requirement(s):

1. 100 K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program, Section 3.18 states that, "Several actions/activities require the development and approval of a HFM Permit prior to initiation of the action/activity. These actions/activities include:
   - facility construction/demolition
   - placement of relocatable structures
   - transport and use of explosives
   - use, handling, or storage of hazardous materials in excess of defined limits
   - operation or storage of fossil-fueled vehicles inside any building not designed for such use, except as authorized by the facility FHA
   - new or modified facility occupancy
   - outdoor burning
   - placement and use of electric heaters in excess of 1500 watts
   - placement and use of fuel-fired heaters
   - placement and use of portable generators
   - blockage of roads
   - facility egress modification
   - utility outages
   - fire protection system (including fire hydrant) installation or deactivation'

2. CH2M Hill Requirements Applicability Matrix states, "the following RAM Reports are compiled in accordance with PRC-PRO-MS-40117, Requirements Management Process, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives,...) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The applicability matrix lists MSC-RD-8589, Hanford Fire Marshal Permits under both 10 CFR 830 Nuclear Safety, and CRD O 420.1B Supplemented, rev 4, Facility Safety.

3. MSC-RD-9717, Fire Prevention for Construction/Occupancy/Demolition Activities, Section 2.1.2 states, "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, Hanford Fire Marshal Permits, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD, (initiated through a Hanford Fire Department Contractor Pre-Incident Plan Request Form, (A-6003-387) are submitted to the HFM prior to engaging in activities or processes governed by the forms (Ref: MSC-PRO-24889, Project Initiation and Execution, Appendix A Section 8.2)."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX-F03

(b)(5)

Requirement(s):

1. 100 K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program, Section 1.1 states that, "this procedure applies to 100K Area facilities, including new project design and construction, modification, alteration, and demolition of 100K

Area facilities. It also applies to operations performed within the 100K Area by the CHPRC D&D Project and other organizations." Section 3.6 states, "if warranted with sufficient technical justification, then apply for and process an exemption, deviation, or equivalency to fire protection requirements in accordance with MSC-RD-9118. (This step also applies to modification and cancellation of existing exemptions, deviations, and equivalencies, when needed.)"

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F04 [TBD}

.

Requirement(s):

1. Same Requirements References listed under F01.

2. MSC-RD-8589
3. MSC-RD-9717
4. MSC-RD-8589

Discussion: [TBD]

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F05

CHPRC

Requirement:

DOE O 414.1C Quality Assurance, Section 3.g. paragraph (1) states, "Procure items and services that meet established requirements and perform as specified."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F06

CHPRC (b)(5)

(b)(5)

Requirement(s):

Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 4.9, paragraph B. states in part, "The Contractor will develop and maintain a work site Job Safety Analysis in accordance with PRC-PRO-SH-40078."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F07

CHPRC (b)(5)

(b)(5)

Requirement(s):

DOE 0336 Hanford Site Lockout/Tagout, Section 5.13, states in part, "Designate a qualified member(s) of the Controlling Organization (CO) to be the lockout/tagout point of contact for the outside contractor for facilities that have a physical interface with an existing facility. 2. Determine which of the following methods of lockout/tagout is to be used: Use of Authorized Worker (AW) locks and tags alone when all of the eight criteria listed below are met."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F08

(b)(5)

Requirement(s):

Contract #36534-31 ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 6.2, paragraph 5. states in part, "Contractor shall maintain an up to date set of as-built design drawings and specifications at the jobsite."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F09

(b)(5)

Requirement(s):

Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1, paragraph I. states in part, "Prior to start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RL-92-36 Rev. 1, and certification that all training is current."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-SED-PRC-XXX -O01

(b)(5)

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Contractor Self-Assessment: The CHPRC did not perform a formal self-assessment of the issues at the 100K Water Treatment Plant Project that eventually resulted in the CHPRC Senior Management issuing a Stop Work. (b)(5)

(b)(5)

Contractor Self-Assessment Adequate: **YES [ ]** **NO [x]**

Management Debriefed:

CHPRC, (b)(5)
CHPRC (b)(5)

Jackson, Dale E

From:	Jackson, Dale E
Sent:	Wednesday, February 08, 2012 3:43 PM
To:	Corey, Ray J; Frey, Jeffrey A
Cc:	Weil, Stephen R; Garcia, Pete J Jr; Rankin, Kyle M
Subject:	Meeting with HQ HSS Enforcement Team
Importance:	High

Tracking:

Recipient	Read
Corey, Ray J	
Frey, Jeffrey A	Read: 2/9/2012 7:57 AM
Weil, Stephen R	Read: 2/8/2012 6:20 PM
Garcia, Pete J Jr	Read: 2/9/2012 10:26 AM
Rankin, Kyle M	
Morgan, Gregory Z	Read: 2/9/2012 11:19 AM
West, Dale C	Read: 2/8/2012 3:43 PM

Gentlemen:

I am writing to brief you on a rather impromptu meeting that occurred with HQ representatives this afternoon. At 1:15 pm today, the members of the 100K IUUP Surveillance team were invited by Kyle Rankin (DOE-RL SED) to meet with representatives of DOE's Headquarters HSS Enforcement Branch. We were informed that the members of the HQ team are making a routine visit to RL, and requested the meeting to clarify or expand upon some of the content of the 100K IUUP Surveillance (S-11-EMD-PRC-001).

At the meeting, the members of the HQ team introduced themselves and began by asking for a summary of why, and how the 100K IUUP Surveillance occurred. The HQ team members had previously obtained and read a copy of the Surveillance Report, and seemed familiar with its content.

The requested summary was provided, and included an explanation of why the multi-disciplinary surveillance team was formed (i.e., the team members realized they were performing independent surveillances that all examined the same Project, and it appeared efficiency benefits would result from combining efforts). The HQ team was informed that the surveillance had been performed over a period of several months (due in large part to its scope and complexity). It was noted that after producing a draft document, CHPRC was given an opportunity to, and provided a factual accuracy analysis. It was explained that after giving consideration to CHPRC's factual accuracy analysis RL formally issued the Surveillance report to the Contractor on December 12, 2011, along with direction to prepare and submit a corrective action plan.

The HQ team asked for a verbal summary of the Surveillance findings, and the status of the effort. It was explained that the Surveillance generally concluded (b)(5) (b)(5) (b)(5) Some details of environmental permitting, fire protection system and nuclear safety examples were discussed. It was also explained that CHPRC has provided a root cause analysis and proposed corrective actions that are currently being reviewed by the Surveillance team. It was also reported that the Surveillance team's preliminary conclusion is that (b)(5) (b)(5)

The HQ team asked if RL expects (b)(5) (b)(5) (b)(5) The HQ team asked (b)(5) anticipated, (b)(5) They were informed (b)(5) (b)(5)

There were some general discussions of how (b)(5) (b)(5) The HQ team was informed that the opinion of the Surveillance team members, supported by the facts in the Surveillance record (b)(5) (b)(5) It appears to have (b)(5) (b)(5) The approach appears to have (b)(5) (b)(5)

The HQ team specifically inquired regarding (b)(5) (b)(5)

At the close of the meeting, the HQ team asked for, and was provided a copy of CHPRC's factual accuracy analysis document, including the RL response comments. The HQ team also asked to be provided a copy of RL's analysis and comments on CHPRC's Root Cause Analysis Report when that review is completed. The discussion closed and the meeting ended at about 2:15 pm.

If you have any questions, please give myself, or any member of the Surveillance team a call.

Respectfully,
Dale Jackson
RL-EMD
376-8086

Jackson, Dale E

From: Connerly, Jenise C
Sent: Monday, February 27, 2012 9:51 AM
To: Jackson, Dale E
Subject: FW: Rejection Letter for !00K IUUP CAP
Attachments: (b)(5) Letter.doc

Importance: High

Dale,

Sorry I didn't see your message more promptly. Have you shared your draft with Ray yet? We talked briefly on Friday, and he knew of your concerns. (b)(5)
(b)(5)

I've made only minor changes to the attached (b)(5)

Jenise

From: Jackson, Dale E
Sent: Monday, February 27, 2012 9:47 AM
To: Connerly, Jenise C
Subject: FW: (b)(5)
Importance: High

Jenise:

I really need your help on this. We only have until this Friday to deliver a letter to CHPRC. I'm not sure where Ray wants to go on this either. PLEASE let me have your thoughts ASAP.

Regards,
Dale Jackson

From: Jackson, Dale E
Sent: Wednesday, February 22, 2012 3:50 PM
To: Connerly, Jenise C
Subject: (b)(5)
Importance: High

Jenise:

Please take a look at the enclosed letter and let me have any comments you might have ASAP. We have a March 2nd deadline to respond to CHPRC.

Many thanks,
Dale Jackson
376-8086 or 948-5540

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

12-EMD-0XXX

Mr. J. G. Lehew III, President
and Chief Executive Officer
CH2M HILL Plateau Remediation Company
Richland, Washington 99352

Dear Mr. Lehew:

CONTRACT NO. DE-AC06-08RL14788 – (b)(5)

(b)(5)

(b)(5)

If you have any questions, please contact us, or your staff may contact Ray J. Corey, Assistant Manager for Safety and Environment, on (509) 376-0108.

Doug S. Shoop
Deputy Manager

Jenise C. Connerly
Contracting Officer

EMD:DEJ

cc:
M. V. Bang, CHPRC
V. M. Bogenberger, CHPRC
J. A. Ciucci, CHPRC
R. M. Millikin, CHPRC
T. L. Vaughn, CHPRC
DNFSB

Jackson, Dale E

From: Jackson, Dale E
Sent: Thursday, March 01, 2012 12:17 PM
To: Morgan, Gregory Z
Subject: (b)(5)
Attachments:

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

12-EMD-0040

Mr. J. G. Lehew III, President
and Chief Executive Officer
CH2M HILL Plateau Remediation Company
Richland, Washington 99352

Dear Mr. Lehew:

CONTRACT NO. DE-AC06-08RL14788 – (b)(5)

(b)(5)

(b)(5)

If you have any questions, please contact us, or your staff may contact Ray J. Corey, Assistant Manager for Safety and Environment, on (509) 376-0108.

Doug S. Shoop
Deputy Manager

Jenise C. Connerly
Contracting Officer

EMD:DEJ

cc: M. V. Bang, CHPRC
V. M. Bogenberger, CHPRC
J. A. Ciucci, CHPRC
R. M. Millikin, CHPRC
T. L. Vaughn, CHPRC
DNFSB

Jackson, Dale E

From: Jackson, Dale E
Sent: Monday, March 05, 2012 9:41 AM
To: Meeker, James
Cc: West, Dale C; Morgan, Gregory Z; Brown, Walter R
Subject: RE: Corrective Action Plan CHPRC-1200377

Jim:

Thanks for your prompt response. I completely agree that (b)(5) Other e-mail traffic I have read this morning suggests that (b)(5) (b)(5) I'll look forward to hearing from you.

Regards,
Dale Jackson

From: Meeker, James
Sent: Saturday, March 03, 2012 7:28 AM
To: Jackson, Dale E
Subject: RE: Corrective Action Plan CHPRC-1200377

Mr. Jackson,

I have forwarded your email to CHPRC and D&D Project management. I will work with you to satisfactorily resolve the concerns expressed in your email. I will propose (b)(5) We need to get specific. 30 days is a very short period of time to address the broad set of concerns you have expressed. I must get out of the gate with a clear picture of what needs to be done during that period.

Processing the 15 findings was my sole purpose for coming to work today.

Jim

From: Jackson, Dale E
Sent: Friday, March 02, 2012 4:04 PM
To: Meeker, James
Cc: Corey, Ray J; Frey, Jeffrey A; Teynor, Thomas K; Splett, Dale H; Whitney, Robin G
Subject: Corrective Action Plan CHPRC-1200377

Dear Mr. Meeker:

Pursuant to RL RIMS procedures, the purpose of this e-mail is to informally notify you that RL has received and reviewed CHPRC's CAP (CHPRC-1200377) submitted in response to the 100K IUUP Surveillance (Surveillance), S-11-EMD-PRC-001. Based on that review, a preliminary determination has been made that the CAP, as submitted, (b)(5) RL has concluded that (b)(5) (b)(5)

1. (b)(5)

2. (b)(5)
3.
4.

5.

I anticipate that within the next few days, (b)(5)
(b)(5)
(b)(5) If requested, the members of the Surveillance Team are available to meet with you to more fully discuss the (b)(5)

If you have any questions, please contact me on (509) 376-8086, or you may respond to this e-mail.

Sincerely,
Dale E. Jackson
Surveillance Team Lead
RL-EMD

Jackson, Dale E

From: Morgan, Gregory
Sent: Friday, September 16, 2011 2:41 PM
To: Brown, Walter R; Jackson, Dale E; West, Dale C
Subject: FW: 100K Surveillance Finalization
Attachments: 100K Surveillance Report Appendix A.docx; USQD 0225-2011

Importance: High
Sensitivity: Confidential

Walter:

The draft response to the Factual Accuracy Review says regarding Finding 12 to "See/Add Greg Morgan response". Attached is an update of my response on Finding 12. I have also copied it below in red:

(b)(5)

(b)(5)

Regards,

Greg Morgan

From: Morgan, Gregory
Sent: Wednesday, September 07, 2011 3:48 PM
To: Jackson, Dale
Cc: West, Dale; Brown, Walter (CONTR)
Subject: FW: 100K Surveillance Finalization
Importance: High
Sensitivity: Confidential

Dale,

Attached is my response to CHPRC's second accuracy review. I have responded to finding 12. Please review my comments and edit as needed.

Additional comments on the Factual Accuracy Review follow:

(b)(5)

(b)(5)

Regards,

Greg

From: Jackson, Dale
Sent: Tuesday, September 06, 2011 4:54 PM
To: West, Dale; Morgan, Gregory; Brown, Walter (CONTR)
Subject: 100K Surveillance Finalization
Importance: High
Sensitivity: Confidential

Gentlemen:

Here are the 100K Surveillance documents I promised to send. I propose we try to get together for an hour sometime Thursday or late tomorrow afternoon to make sure we all agree on how to proceed. Let me know your availability.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

2011 Integrated Safety Management Workshop

September 12-15, 2011 Kennewick, WA
Learn more about it at: http://www.ism2011.com/

APPENDIX A, RICHLAND OPERATION OFFICE SURVEILLANCE REPORT S-11-SED-PRC-006
SUMMARY OF CONTRACTOR'S FACTUAL ACCURACY ANALYSIS AND RL RESPONSE
[DATE]

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-C01: In order to meet project schedules, CHPRC engaged in a pattern of conduct that failed to recognize, or otherwise failed to implement contractual requirements, failed to follow established procedures, and failed to meet statutory obligations.	CHPRC agrees that it did not plan and execute the 100K Water Treatment Facility and the Fire and Potable Water Distribution System project in full compliance with contractual, procedural, and environmental/ regulatory requirements. CHPRC disagrees that there is or was a pattern of conduct or intentional or knowing disregard for compliance with contractual, procedural and environmental requirements. CHPRC disagrees that the project design failed to meet contractual or other obligations. CHPRC disagrees that it made unilateral decisions to proceed at risk. CHPRC disagrees that its corrective action system failed to recognize and address the key planning and execution deficiencies associated with the project. CHPRC states that in many instances it agrees with the facts stated in the report, but that there are two kinds of omissions in the draft report. First, many relevant and important facts are missing and leave the incorrect and unwarranted impression that CHPRC took actions without the awareness of either the Department of Energy project managers and the Washington Department of Health. Second, the Concern set forth in the report ignores the proper assessment of facts in light of CERCLA requirements. A complete evaluation of the facts leads to the conclusion that no environmental laws or regulations were violated. Rather, the more appropriate conclusion is that CHPRC only failed to recognize and plan the project in light of CERCLA requirements. CHPRC states that: " . . . [T]here is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes in order to trigger the regulatory preemption authority of CERCLA Section 121(c)(1). CHPRC asserts that this "surveillance report" departs from traditional standards for conducting audits and assessments that normally focus on evaluating compliance with standards and requirements, while they avoid personalization, innuendo and implication. We believe this Report fails	CHPRC's request to modify Finding C01 is denied. DOE acknowledge in footnote 1 of Surveillance Report S-11-SED-PRC-006 (Surveillance Report) that this project might have been entitled to the regulatory permitting exemptions of CERCLA § 121(e)(1), but that apparently the steps necessary to secure such entitlement were not all taken. CHPRC's asserts that: " . . . there is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes . . . . " However, the very OSWER Directive #9355.3-22 cited by CHPRC in it comments contradicts that assertion. More specifically, the OSWER Directive states: "The decision to provide an alternative water supply need to be documented in the appropriate decision document, such as a Record of Decision (ROD) or Explanation of Significant Differences (ESD) for remedial projects or an Action Memorandum for removal projects." Other facts confirm that CHPRC was not seeking the exemptions offered by CERCLA § 121. CHPRC's EASF checklist states this Project is not a CERCLA project and requires NEPA documentation. The Project's conduct of ultimately applying for multiple approvals from WDOH does not suggest it was proceeding pursuant to CERCLA. The Project produced no evidence that it evaluated any ARARs that would be applicable and documented findings in a CERCAL decision document. DOE acknowledges that CHPRC is entitled to its opinion regarding the methods and practices employed in conducting the Surveillance, but respectfully disagrees with CHPRC's conclusions. With regard to CHPRC's comments on pattern of conduct, failure recognize of extent of condition, and failure to comply with contractual obligations, DOE believes the multiple and varied failures to meet regulator or contractual conditions documented in the Surveillance Report are accurate and speak for themselves. DOE points out however that the terms "intentional," "reckless" and "knowing disregard" as used by CHPRC in its Factual Accuracy Analysis are terms invented by CHPRC

	that general standard. CHPRC points out that the potable water system project received eventual approval by WDOH that no corrective reconstruction was necessary, and the system was not used to deliver water until final WDOH approval was received. Consistent with its statements to CHPRC, WDOH has not ordered any corrective actions, nor has it taken any enforcement action against DOE or CHPRC. Proceeding with construction of the fire protection system before permits were obtained from the WDOH did not violate any environmental laws or regulations.	as they do not appear in the Draft or Final Surveillance Report.

APPENDIX A, RICHLAND OPERATION OFFICE SURVEILLANCE REPORT S-11-SED-PRC-006
SUMMARY OF CONTRACTOR'S FACTUAL ACCURACY ANALYSIS AND RL RESPONSE
[DATE]

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F01: CHPRC failed to apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.	CHPRC claims the Finding is only partially accurate. CHPRC admits that it is factually accurate that it did not receive "final approvals" from WDOH prior to commencing construction activities on the potable water system. CHPRC states: " . . . CRD M 231.1-1A, Chg 2 (Supp Rev 1) has no requirements directly pertaining to Safe Drinking Water Act (WDOH) approval requirements for public water systems." CHPRC asserts that is should be excused from complying with WDOH permitting regulation found at WAC Chapter 246-290 and its contractual obligation to the federal government because it disclosed to WDOH and DOE project management that it was proceeding in such a fashion and had permission of those parties to do so. CHPRC asserts that it self-identified, reported and corrected any violations of State regulations that occurred. In apparent support of this proposition, CHPRC offers that it ultimately obtained all required approvals and permits for the new drinking water system from WDOH. CHPRC asserts that it self-discovered that it had initiated construction without first obtaining all required approvals from WDOH, and that upon said discovery, it stopped all work on the potable water system components on May 18, 2010, and did not resume work until obtaining all required permits and approvals. CHPRC asks that Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness be combined.	CHPRC's request to modify Finding F01 is denied. While CHPRC has as part of its corrective action process formally repudiated the practice of "proceeding at risk," that is, initiating construction activities without first obtaining all permits required by State and federal law, it now raises this very practice as a defense in the instant matter. CHPRC apparently ignores the fact that neither the WDOH, nor the federal project staff has authority to grant immunity from complying with applicable law. Furthermore, even if compliance with applicable law could be excused, CHPRC was expressly bound by its obligations in its contract with the federal government to comply with the requirements of WAC Chapter 246-290. DOE acknowledges, and it is memorialized in the Surveillance Report that CHPRC self-identified and reported its failure to submit a project report to WDOH and obtain that agency's approval prior to commencing construction of the potable water system. However, CHPRC assertion that it self-discovered and reported all violations suggest that it still fails to acknowledge that it failed to obtain the required construction permit from WDOH until well after it had resumed construction activities. This is a separate and distinct violation from that of having failed to obtain project report approval. CHPRC's assertion that it stopped all construction activities on the potable water system on May 18, 2010 and did not resume those activities until it obtained all required approvals and permits is completely inaccurate. Central to this assertion appears to be the notion that the cross-site raw water delivery line and 750,000 gallon water storage tank constructed by the 100K IUUP Project were not part of the potable water system. This is a notion that has been rejected by the State and CHPRC's own legal counsel (see Surveillance Report Exhibit 28, and 2006 letter from WDOH to DOE River Corridor Project). The fact that off-site construction activities were continuing on the skid mounted water treatment system, and on-site construction activities were continuing on the raw water delivery system and tank are clearly documented in the Surveillance Report and its Exhibits. *See* Exhibit 23, et al.

		CHPRC's request to consolidate Findings 1, 2, 3, 4, 5, 9, 10, and 13 is rejected. Each of the Findings document separate and distinct violations of contractual or other obligations. Combining the Findings could lead to a failure to adequately evaluate and address each deficiency during the corrective action process.

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F02: CHPRC failed to apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F03: Upon discovery of its failure to meet environmental regulatory		

requirements, CHPRC failed to recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F04: After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and did not accurately categorize the event.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F05:		

CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it failed to include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F06: CHPRC proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment Facility, as designed, did not comply with applicable contract standards, and was otherwise defective.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-F07: The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F08: The CHPRC 100K IUUP did not follow DOE, CHPRC and 100-K procedures during the design review process.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F09: The CHPRC 100K IUUP did not follow DOE and CHPRC procedures during the		

permitting process.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F10: The CHPRC 100K IUUP installed water distribution system piping that did not meet contractual requirements previous to applying for and receiving approved exemptions and equivalencies from RL.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F11: The CHPRC proceeded in the construction of the Potable Water Treatment Facility structure prior to the review and approval of the design by a qualified FPE /DFM.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F12: CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.	**CHPRC disagrees that construction proceeded without identifying and resolving all appropriate USQs.** Basis (Page 45): Issue 1: "This Team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review." CHPRC asserts that all work was appropriately evaluated under the USQ process.	CHPRC's request to delete Finding F-12 is denied. CHPRC was unable to provide the USQ review which was required. On September 13, 2011, CHPRC declared positive USQ 0225-2011 for this issue. Therefore Issues # 1, 2, and 3 remain valid, as noted below.
	Issue 2: "Can the new system provide excessive water, such that any leaked water could enter the K West Basin and cause an overflow?" CHPRC asserts that changes associated with the fire water system flow capability cannot create the postulated event.	CHPRC has re-analyzed the water leakage rate in report DD-50551, which concludes that maximum credible water flow is 6,693 gallons per minute – an increase of 446 percent. This is a discernable increase and should have received a USQ Evaluation.
	Issue 3: "Further, the CHPRC nuclear safety staff stated that no USQ screenings or evaluations address these issues." CHPRC agrees that USQ determinations or screenings were not performed for the Issues identified in Issue 2, but asserts that no such USQ screening or determination was required because the scenario postulated by RL was not judged to be possible because of the topography.	While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation.
	Issue 4: "Since being informed of the issue, CHPRC has not provided evidence of entering the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203(g)." CHPRC agrees that the potential inadequacy of safety analysis (PISA) process was not entered, but CHPRC asserts that entry into the PISA process was not required, in this case, as allowed for by the RL-approved PRC-PRO-NS-062, Unreviewed Safety Question Process, since the scenario was not judged to be possible because of the topography.	While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner and near the west wall of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation. Further, this judgment was not developed until after RL issued the draft Surveillance. On September 13, 2011, CHPRC declared positive USQ 0225-2011 for this issue. CHPRC did not enter this into the PISA process until after they received this draft Surveillance for factual accuracy review.
	Basis (Page 46): The USQ (0025-2011, Rev. 0) was completed for several DCN's that had been issued during installation of the water system. Consistent with PRC-PRO-NS-062, initially these changes were exempt from the USQ process. Upon completion of the installation a document review of all the DCNs was performed and captured in DD-48931. As stated above both the document and USQ was provided to RL. RL stated	The issue regarding adequacy of USQ review is one of timing – USQ-0025-2011 was done against Revision 0 of DD-47929 was approved on 12/27/2010. Yet, the USQ screen which relied on this calculation was completed on 10/20/2010. Further, DD-47929 Revision 0 actually has four dates: Originated 12/27/2010, Checked 10/13/2010, Approved 12/27/2010, and the last page has a notation for Revision 0 of 12/28/2010.

	they were not sure that the USQ really specifically addressed the change; subsequently the USQ was revised to Revision 1 and provides further clarification of the review. Basis (page 47): The actual calculation in question DD-47929 was approved on 10/11/2010. The USQ screen on this calculation was completed on 10/20/2010. The ECR for the calculation was not issued until two months later on 12/28/2010. The USQ screener reviewed the calculation on the release date and signed the form as required by the process. In addition, there is no basis for the footnote discussion. **PROPOSED FINDING** None. Delete this finding.	This discrepancy in dating means that RL cannot determine what issues actually received the USQ Evaluation. The footnote discussion is based on the timeline of the project, the Stop Work order and its results, and the date of USQ 0025-2011. The footnote discussion is factual and valid. Based upon the above, this request is denied.

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F13: CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F14: CHPRC issued excavation permits for		

100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to completion of cultural resources reviews.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F15: The CHPRC does not have an active Memorandum of Understanding (MOU) with the HFMO which has resulted in confusion of the authority, responsibilities, and duties of the HFM.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F16: CHPRC had not ensured a complete Lockout/Tagout		

(LOTO) program for the 100-K Potable Water Treatment Facility construction site. CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate briefings.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-O01: CHPRC's central environmental management organization failed to respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-O02: Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-O03: CHPRC's Project Review Board process failed to evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-Contractor Self-Assessment.		

Jackson, Dale E

From:	Jackson, Dale
Sent:	Thursday, October 27, 2011 4:47 PM
To:	West, Dale C; Brown, Walter R; Morgan, Gregory Z
Cc:	Weil, Stephen R
Subject:	100 K IUUP Surveillance Report Final Version Enclosed
Attachments:	S-11-EMD-PRC-001 10272011.doc
Importance:	High
Sensitivity:	Confidential

Tracking:

Recipient	Delivery	Read
West, Dale C	Delivered: 10/27/2011 4:47 PM	Read: 10/31/2011 7:43 AM
Brown, Walter R	Delivered: 10/27/2011 4:47 PM	Read: 10/28/2011 11:02 AM
Morgan, Gregory Z	Delivered: 10/27/2011 4:47 PM	Read: 10/31/2011 8:16 AM
Weil, Stephen R	Delivered: 10/27/2011 4:47 PM	Read: 10/28/2011 3:37 PM

Gents:

Please do one last review on the enclosure. I think it is now ready to be briefed to Mr. Corey as it incorporates all edits that we believe are appropriate in light of CHPRC's Factual Accuracy Analysis and ODD's suggestions on format and content. Let me know what you think.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

Jackson, Dale E

From: Brown, Walter (CONTR)
Sent: Monday, October 31, 2011 9:07 AM
To: Jackson, Dale
Cc: Brown, Walter (CONTR)
Subject: PDF files: Exhibit 58; Exhibits 59-62
Attachments: EXHIBIT 58.pdf; EXHIBITS 59-62.pdf

Please see attached.

EXHIBIT 58

From: Chaffee, Gail A
Sent: Thursday, April 14, 2011 4:04 PM
To: Morgan, Gregory
Cc: Teynor, Thomas; Ramble, Alan L; Morgan, Calvin E; Quintero, Roger; Jackson, Mark; Hill, Burton; West, Dale; Koch, Michael R; Clapp, Dennis (CONTR); Raymond, Richard E
Subject: RE: USQ in Support of New Water System

Greg,

I have attached the engineered analysis for the change to the 8" line from the 12" line. Also attached is the USQ for that document. I agree that 0025-2011 should have some text that recognizes the change in the FSAR, we are revising the text in the USQ description and the answers to the USQ will not change. Additionally, we have been going through Chapter 2 of the FSAR which includes the description of equipment and processes and we are updating as appropriate Section 2.9.1.7. Although we have a draft chapter it has not been reviewed or subjected to the USQ process yet.

The Engineering Analysis for the water line change should ease your concern about maintaining Nuclear Safety. As you know, we do not have any accidents that rely upon the fire suppression system in either the CVDF or the 105-KW Basin FSAR. The water tank does maintain water that we could use to supply make-up water and is identified as DID, however, our TSR does allow us to get water from several different sources and does not rely on any one system.

Also, as we discussed, the location of the water tank did consider the placement and the potential for flooding. I will verify the final location is as designed.

Gail Chaffee

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Thursday, April 14, 2011 3:27 PM
To: Chaffee, Gail A
Cc: Teynor, Thomas; Ramble, Alan L; Morgan, Calvin E; Quintero, Roger; Jackson, Mark W.; Hill, Burton E.; West, Dale C.; Koch, Michael R; Clapp, Dennis A.
Subject: FW: USQ in Support of New Water System
Importance: High

Gail:

In our discussions (today at 2:05, and over the last two months or more), it was stated that the design change from 12 inch to 8 inch was screened out from the USQ process because the change would be USQ reviewed prior to implementation at the facility (Appendix B, bullet 7, bolded below). DCN-KUP-073 is marked in that manner. That then requires a USQ

Determination before implementation at the facility. USQ 0025 2011 has DCN-KUP-073 as one of the DCNs covered:

DCN-KUP-073, *Release of Construction Drawings for 100I* drawing H-1-91185 Sheet 4 and Sheet 14. The DCN modi adds a fire hydrant south of 105-KW. The proposed revisic system upgrade in Section 2.9.1.7 of the FSAR.

However, the proposed revision **does conflict** with Section 2.9.1.7 of the FSAR, which says: The planned system will provide a new water supply for the 100 K Area, via a 12-inch pipeline from the existing export water line. The planned tie-in point is at Helen's Junction, southwest of the 100 K Area. The new water supply will provide raw water to the 100 K Area, at a nominal delivery rate in excess of 1500 gal/min. The raw water feed will be to a 750,000 gallon tank, located in the southwest corner of the 100 K Area. This tank is sized to provide water for fire suppression (360,000 gallons), emergency basin make-up (180,000 gallons), and up to 24 hours of potable water demand at a nominal rate of 50 gal/min.

The planned fire suppression water distribution system will provide a 12-inch fire main throughout the 100 K Area, with a looped and gridded system on the west side of the 100 K Area, supplying Buildings 142-K and 105-KW. Existing piping exterior to Building 105-KW will be replaced with a new loop, providing six new fire hydrants and the water supply to the Building 105-KW administrative area automatic sprinkler system. A single 12-inch fire main will serve facilities in the central corridor (1724-K, MO-500, and hydrants in the central corridor) and on the east side of the 100K Area (MO-293, and hydrants on the east side, including hydrants in the vicinity of Building 105-KE). Normal system pressure will be maintained by new service water pumps, which will be sized and controlled to maintain system pressure at a level comparable to that provided by the existing system (approximately 120 psi).

Therefore, there does not appear to be a USQ evaluation which covers the reduction from providing "a 12-inch fire main throughout the 100 K Area, with a looped and gridded system on the west side of the 100 K Area, supplying Buildings 142-K and 105-KW" to tying into the existing 8-inch loop around Building 142-K (CVDF).

This leaves the question in place: Given that the replacement fire suppression system has been tied in and is started up, and your statement below that the "DCN for changing the 12 inch line supply line the existing 8 inch loop around 142K was identified during our review as still needing a USQ", please explain how CHPRC is currently ensuring compliance with 10 CFR 830, Section 203?

Please explain.

Greg Morgan

Appendix B

Exceptions to the USQ Process

NOTE: *Any document or procedure that is listed in a facility or project-specific safety basis compliance matrix may not be excluded from the USQ process using this Appendix as a basis.*

This procedure does *not* apply to:

- Safety Basis Activities in a less than hazard category 3 facility.
- Administrative non-technical basis documents controlled by PRC-PRO-IRM-9679, *Control of Administrative Plans, Reports, Studies, and Description Documents.*
- Work hazards analyses performed pursuant to PRC-PRO-WKM -079, *Job Hazard Analyses.*
- Radiological work planning and as low as reasonably achievable (ALARA) documents, Radiological Work Permits (RWPs), survey plans, procedures for operating radiation measurement devices, procedures for monitoring radiological status during work activities.
- Environmental permits, reviews or environmental planning documents.
- Administrative and financial portions of work planning documentation such as additional forms, permits and administrative fields of work management generated forms that are not part of the **work instructions**.
- Design Change Notices (DCN) and Facility Modification Packages (FMP) that will be either 1) **USQ reviewed prior to implementation at the facility,** or 2) incorporated into a facility modification or new facility design that will be authorized by RL in a SER so long as the DCN or FMP do not modify an existing hazard category 1, 2, or 3 nuclear facility prior to RL issuance of the SER. Changes to the facility or partial installations made prior to the receipt of the SER are subject to the USQ process.
- Changes to the CHPRC functional organization chart shown in Chapter 17 of PRC-NS-11724, CH2M HILL Plateau Remediation Company *Safety Management Programs.*

Several CHPRC documents and their corresponding project-specific implementing documents listed by topical area or individually in the following sections are not subject to the USQ process. To exclude a project-specific implementing document from USQ review, ensure 1) the scope of the implementing document falls within the scope of the topical areas listed below, and 2) the implementing document is not contained in the facility, project, or TS Safety Basis Compliance Matrix.

From: Chaffee, Gail A
Sent: Thursday, April 14, 2011 1:56 PM
To: Morgan, Gregory
Subject: RE: USQ in Support of New Water System
Importance: High

I am so sorry for all this confusion however, I think I finally got it...I know you have been asking for the USQ on the 12-8 inch line change. The DCN initially was screened out of the USQ process according to PRC-NS-PRO-062, Appendix B Exclusions. This exclusion does require us to do an overall USQ on those DCNs initially excluded. For some reason, I thought that USQ was still in draft while we were waiting for some final DCNs. I was wrong. The first overall USQ was completed before the project went on line. Attached is that USQ (0025-2011). I have also attached DCN-073 that includes the change from the 12 inch line to the 8 inch line for fire suppression.

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Thursday, April 14, 2011 1:09 PM
To: Chaffee, Gail A
Cc: Teynor, Thomas; Quintero, Roger; Jackson, Mark W.; Hill, Burton E.; West, Dale C.; Koch, Michael R; Clapp, Dennis A.
Subject: RE: USQ in Support of New Water System

Gail:

I still do not understand.

I have been asking which USQ screening/evaluation CHPRC has relied upon to ensure nuclear safety and compliance, for this change from 12 inch lines to 8 inch lines for fire suppression. The response has not identified the actual USQ being relied upon.

I understand that you will be doing an overall USQ, based on PRC-PRO-NS-062

Unreviewed Safety Question Process, Section 4.1.10, "

10. Implement the proposed activity. If the proposed activity is a physical modification, provide verification that the installed modification is in agreement with the safety basis and USQ documentation prior to start of operations to assure that any new hazards have been identified and incorporated into the hazards analyses and accurately reflected in the USQ review. Incorporate changes in the facility safety basis or transportation safety basis at the next annual update as appropriate.

NOTE: *This verification of the modification is accomplished by PRC-PRO-EN-2001, Facility Modification Design Process, under "Verify Work."*

"

The questions remain: What USQ screening/evaluation is being relied upon for nuclear safety, and for compliance with 10 CFR 830 Section 203?

Thank you.

Greg Morgan

From: Chaffee, Gail A
Sent: Thursday, April 14, 2011 12:09 PM
To: Morgan, Gregory
Cc: Teynor, Thomas; Quintero, Roger; Jackson, Mark; Hill, Burton; West, Dale; Koch, Michael R
Subject: RE: USQ in Support of New Water System

I think my wording may have lead to a misinterpretation; the DCN was properly reviewed (including the deputy fire marshal) and subjected to the USQ process, however, consistent with our procedure (PRC-PRO-NS-062) we are doing a more comprehensive USQ on several of the DCNs. That is the purpose of the DRAFT report I provided to you yesterday.

Please let me know if you have other questions or concerns.

Gail Chaffee

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Thursday, April 14, 2011 11:11 AM
To: Chaffee, Gail A
Cc: Teynor, Thomas; Quintero, Roger; Jackson, Mark W.; Hill, Burton E.; West, Dale C.
Subject: RE: USQ in Support of New Water System

Gail:

Given that the replacement fire suppression system has been tied in and is started up, and your statement below that the "DCN for changing the 12 inch line supply line the existing 8 inch loop around 142K was identified during our review as still needing a USQ", please explain how CHPRC is currently ensuring compliance with 10 CFR 830, Section 203?

Regards

Greg Morgan

830.203 Unreviewed safety question process.

(d) The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must implement the DOE approved USQ procedure in situations where there is a:
(1) Temporary or permanent change in the facility as described in the existing documented safety analysis;
(2) Temporary or permanent change in the procedures as described in the existing documented safety analysis;

From: Chaffee, Gail A
Sent: Tuesday, April 12, 2011 1:36 PM
To: Morgan, Gregory
Subject: RE: USQ in Support of New Water System

Greg,

Attached are the USQs you requested. The DCN for changing the 12 inch line supply line the existing 8 inch loop around 142K was identified during our review as still needing a USQ. This USQ Determination is currently a draft; we are awaiting one more DCN to finish and signoff the USQ then we will also issue our final report (DD-48931). I expect that to be done by the end of this week /first of next week.

Please let me know if you need anything else.

On another note; do you have anything specific you would like on our agenda tomorrow afternoon? I see I have comments from Dennis on the annual but I haven't had a chance to go over them yet. I think the KOP Pretreatment is complete. We could discuss the CVDF USQ closure package that I will be sending over later next week for your review and approval.

Gail

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Tuesday, April 12, 2011 12:24 PM
To: Chaffee, Gail A
Subject: RE: USQ in Support of New Water System

Thanks, Gail.

Can you provide copies of USQS-0226-2010, 0028-2011, and 0037-2011?

Also, which USQ screening or evaluation is CHPRC relying on for the change from 12 inch fire supply lines to 8 inch lines?

Regards

Greg Morgan

From: Chaffee, Gail A
Sent: Monday, March 28, 2011 3:51 PM
To: Morgan, Gregory
Cc: Koch, Michael R
Subject: USQ in Support of New Water System

Greg,

As we discussed this morning, we are doing a review of all the DCNs, FMPs, and ECR documentation on the new water system to ensure that the appropriate reviews were completed before we actually switch over to the new system. We will document this review in a supporting document. The specific one you had mentioned is related to the change to the existing 8" line versus the 12" line in the original design.

Attached is the USQ that I had sent to you initially, however, at the time we were in the process of reviewing and finalizing the USQ and it did not have the second signature.

Please let me know if you need further information or have any other questions.

Gail Chaffee

CRPRC - REVIEW COMMENT RECORD (RCR)

Date	2. Review No.
10/23/2009	
3. Project No.	Page 1 of 12

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
90% Design Review	100K Project	Susan Omberg Carro; Sam Wajeeh; Adam Moldovan; Richard Larson		376-3202; 373-1830; 373-1757; 373-1834

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date / Organization Manager (optional) (print and sign)	Reviewer/Point of Contact (print and sign) / Date / Author/Originator (print and sign)	Reviewer/Point of Contact (print and sign) / Date / Author/Originator (print and sign)

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
Fire System Design Comments						
1	KBC-42041; Section 2.3.A: Last line should read: "and include an automatic shutdown function as defined...".	Automatic shutdown is allowed by the AHJ if designed in compliance with the code.	Revise to allow automatic shutdown logic in the controller.	Y	Accept. (Pierce)	
2	KBC-42041, Section 2.3.A: Pump controller may monitor damper position and provide the signal for operation, but may not provide electrical power for operation.	NFPA 20 does not allow the fire pump controller to be used to supply power to other equipment.	Revise per comment.	Y	Reject. Per NFPA 20, diesel engine fire pump controllers are permitted to supply power to operate pump room dampers. This is standard industry practice based on discussion with a fire pump system supplier. The procurement specification will be revised to clarify that the dampers involved are for supply of combustion air. (Hagensen)	
3	General: Preferred FACP is: Firelite model MS series.	Fire Systems Maintenance personnel are currently trained on specific FACPs.	Specify preferred FACP in the procurement specification and/or other applicable documentation.	N	Accept. (Golberg)	
4	Calculation 0846401.30-M-002: Analysis demonstrates that minimum fill rate can be achieved. This does not demonstrate	Need to determine the operational capacity of the	Please also calculate maximum and nominal fill ra[illegible]r day shift, weekday oper[illegible] If fill rate is	Y	Accept. Analysis will be rerun to determine if service water demands can be meet. (Hagensen)	

A-6004-835 (REV 0)

EXHIBIT 59

CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 2 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	operational capacity of the service water system.	system.	significantly affected by PRV-101, provide an assessment of the fill rate that could be achieved by relocating PRV or adjusting setpoint. Please include information (as available) on fluctuation of fill rate throughout the working day based on export water line flow.			
5	Current design does not provide detailed hydraulic analysis inside the fence.	Need to determine operational capacity of the system, and need to sequence operational start-up.	Based on the attached drawing markup (Attachment 1), which provides usage points and flowrates, please provide analysis to demonstrate that service water pump system VFDs/controllers will respond adequately to prevent fire pump actuation during maximum operational demand.	Y	Accept. (Hagensen)	
6	H-1-91185, Sheets 1 through 4: Please revise hydrant locations as shown on the attached drawing markup (Attachment 1).	Drawing markup shows hydrant locations as required by HFD and 100K.	Revise hydrant locations as shown. Please note that locations shown are approximate and are not based on survey information.	Y	Accept. (Conselman)	
7	H-1-91185, Sheet 4: This drawing still shows FW connection to Building 183KE.	This connection is not required for the new system.	Remove connection; show system cap point.	Y	Accept. (Conselman)	
8	H-1-91185, Sheet 9: PIV detail has been provided; PIV locations are not specified.		Provide PIV locations on system layout drawing and/or sections.	Y	Accept. (Conselman)	
9	H-1-91511, Sheet X: 1) Drawing does not call out fire resistance rating of interior wall. 2) Layout requires modification to accommodate service water pumps. 3) If exterior fire pump room double doors are replaced with a roll-up door, an additional man door will be needed.		Please revise drawing as appropriate.	Y	Accept. (Hagensen)	
10	H-1-91512, Sheet 2: Use of emergency		Relocation of PRV-101, or	Y	Accept. A pressure control valve and pressure relief valve will also be	

CRPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
10/23/2009	
3. Project No.	Page 3 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	fire pump bypass will subject downstream systems (potable and fire water) to pressures significantly in excess of design pressure.		provision of additional PRVs, is required for protection of downstream systems during use of bypass.		installed in the potable water bypass line to limit potable water line pressure (Hagensen).	
11	H-1-91512, Sheet 2: Supply to fire equipment room riser should remain at a minimum of 6 inches. Should further reduction be required, this can be specified by the sprinkler design contractor.	Good engineering practice.	Revise to show reduction as 8x6 rather than 8x2.	Y	Accept. (Hagensen)	
12	H-1-91512, Sheet 2: Fire pump test configuration currently shows test loop and header discharging to the environment. Discharge of water to the environment at 100K requires permitting and therefore can be difficult.	Good engineering practice.	Please provide piping for return of test header to TK-1.	Y	Accept. (Hagensen)	
13	H-1-91512, Sheet 2: Level alarms for overflow protection should be interlocked to fill valve. It is unclear to me from the P&ID whether this is the case.	Good engineering practice.	Please revise or clarify drawing as necessary, or provide instrumentation logic diagram.	Y	Agree, there is an interlock between the LSHH and the overfill valve. The interlock will be described to clarify its function (Garcia).	
14	H-1-91512, Sheet 2: Separate sensing lines and controllers are required for the fire pump and jockey pump. It is unclear to me from the P&ID whether this is the case.	NFPA 20	Please revise or clarify drawing as necessary, and provide detail drawing for fire pump room piping/layout.	Y	Accept. (Hagensen)	
15	H-1-91512, Sheet 2: It is unclear from the existing P&ID whether the fire equipment room riser is supplied from the site main.	Supply should be from the site main.	Please revise or clarify drawing as necessary.	Y	Accept. (Hagensen)	
16	H-1-91512, Sheet 2: Please provide flow meters for the tank supply line (from export water) and the service water discharge (in-line before fire pump). Flow meters should report in some manner that allows comparison of relative flow rates.	Some means of comparing water supply rate to water use rate must be provided in order to ensure water supply.	Some discussion of this issue may be necessary.	Y	Accept. (Garcia)	
17	H-1-91512, Sheet 2: Truck fill stations will require tanks. Site can provide 12,000 gallon elevated tanks for use in this capacity. Attached drawing markup		Please provide revised design for truck fill stations to include use of an elevated tank.	Y	Accept. (Conselman)	

CRPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
10/23/2009	
3. Project No.	Page 4 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	(Attachment 1) shows desired (revised) location of two fill stations. In addition, truck fill stations will require flow into the tanks to be metered in order to ensure that truck filling operations do not disrupt other system demands.					
18	General: Design for fire equipment room sprinkler system/riser and FACP is not included in drawings, or addressed in procurement specifications.		Please address how this design will be provided.	Y	Accept. Will add new section to construction specification that addresses sprinkler system (Pierce).	
19	H-1-91513: Please note that diesel day tank size is dependent upon fire pump horsepower, which has not yet been provided.	NFPA 20	Drawing cannot be approved until maximum fire pump horsepower is confirmed.	Y	Tank is provided by pump supplier per the procurement specification. This allows the supplier to match the tank size to the horsepower of the diesel engine (Pierce).	
20	H-1-91513: Drawing references a detailed piping plan for the fire equipment room, which is not provided in the design package.		Please provide detailed piping plan H-1-X000X when available.	Y	Accept. (Hagensen)	
Microfiltration System/Layout						
21	H-1-91512, Sheet 2; The microfiltratrion plant must have two air compressors for redundancy or 1 receiver with two compressors in case one air compressor needs to be inactivated for maintenance.	Current design shows one air compressor.	Please revise drawing to show two air compressors.	Y	Accept. The subject drawing and KBC-42002 will be revised to incorporate an additional compressor system. The additional compressor system will be an exact duplicate to ensure benefits of standardization. The additional compressor will be an installed spare. (Ashley)	
22	H-1-91512, Sheets 4 & 6; This drawing needs to show a 2-inch bypass line connected to another static mixer for redundancy.	Current design shows only one static mixer.	Please revise drawing with requested addition.	Y	Accept. Parallel static mixers with manual valving will be shown on the subject drawing sheets (2 locations). (Ashley)	
23	H-1-91512, Sheets 4; This drawing needs to show a check valve upstream of the duplex filter, prior to sodium hypochlorite injection	Current design does not show a check valve to prevent potential backflow	Please revise drawing with requested addition.	Y	Accepted with Comment. Check valves which protect the water supply are already provided. Please see H-1-91512, Sheets 2 and 3.	

CRPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
10/23/2009	
3. Project No.	Page 5 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
		into the duplex filter.			However, it is considered probable that the duplex filter elements will be constructed of stainless steel mesh. A check valve will be added in the recommended location to preclude exposure of the filter elements to chlorides. (Ashley)	
24	H-1-91512, Sheets 5; This drawing needs to show flow totalizer on the 4-inch line to the 2,500 gallon waste water cistern.	Current design does not show a flow meter.	Please revise drawing with requested addition.	Y	Accept. A flow indicating totalizer will be installed on the discharge piping from the CIP neutralization skid to the drain. (Ashley)	
25	H-1-91512, Sheet 6; Need to show proper PLC connections to controllers for the 12,000 gallon storage tank (TK-CW-1).	Current design does not show proper PLC connection.	Please revise drawing with requested addition.	Y	Accept (Garcia).	
26	H-1-91512, Sheet 6; Please indicate (via note or separate drawing) access (manway) on poly tanks (pre/post settling tanks and storage tank).	Current design does not indicate connection.	Please revise drawing with requested addition.	Y	Accept. The pre/post tanks are equipped with a 16 inch manway on the top; the storage tank is equipped with a 24 inch manway on the top. Furthermore the tanks will be equipped with drains on the bottom to facilitate removal of settled solids, if any. Discussion with cognizant CHPRC personnel indicate that these attributes are sufficient for the tank maintenance anticipated. Appropriate notes will be added to the drawing. (Ashley)	
27	H-1-91513, Sheet 1; This drawing does not show eyewash stations with tempered water, chemical storage area with separate storage sumps, lab work area, and reagent storage for daily testing.	Current design does not show aforementioned areas.	Please revise drawing with requested additions.	Y	Accept. The drawing will be revised to show safety shower/eyewash station(s), using tempered water, 2 work stations with water and sinks, and "floor level" reagent storage area(s) with appropriate sumps. (Ashley)	
28	H-1-91513, Sheet 1; This drawing needs to show that penetrations into the tank are accessible for maintenance purposes.	It is not clear if current design allows for easy access for tank	Please revise drawing with requested addition.	Y	Accept. The tank penetrations will be specified in the Construction Specification, and shown on applicable mechanical drawings.	

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
		maintenance.			Please note that the level instrumentation on the poly tanks will be located on "flats" at the outboard edge of the tank top. (Ashley)	
29	H-1-91513, Sheet 1; This drawing needs to show sinks at locations where water quality testing will take place.	Current design does not show sinks.	Please revise drawing with requested addition.	Y	Accept. See Response to Comment 27. (Ashley)	
30	H-1-91513, Sheet 1; The detail drawings for the fire pump room piping plan, contact pipe assembly and pipe assembly for potable water connection was not provided.	Current plan set provided for 90% review did not include the aforementioned drawings.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
31	H-1-91513, Sheet 1; Please indicate a roll-up door at the exterior wall of the fire pump room to allow for maintenance and pump removal.	Current design does not show roll-up door at aforementioned location.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
32	H-1-91513, Sheet 1; Please add service water pumps (rated at 1500 GPM) to fire pump room.	Current design does not show service water pumps.	Please revise drawing with requested additions.	Y	Accept. (Hagensen)	
33	H-1-91513, Sheet 1; This drawing needs to show water spigots (3/4 –inch) for water quality testing, make-up water for chemical dilutions, and a 11/2 inch camlock used to fill 500 gallon water trailer.	It is not clear if current design includes aforementioned items.	Please revise drawing with requested addition.	Y	Accept. Specified water spigots will be shown on subject drawing. (Ashley)	
34	H-1-91513, Sheet 1; A ventilation system (1 cfm per 1 sf of area) must be added to the chemical storage area (area used to store the acid, caustic, chlorine solution and coagulant).	Current design does not show service a ventilation system nor does it show a chemical storage area.	Please revise drawing with requested addition.	Y	Accept. Per discussion with cognizant CHPRC personnel, the facility "ventilation system" will consist of 3-4 unit heaters, and exhaust fans. Air cooling, or other conditioning is not required. Building is to be insulated with typical "standard" insulation. (Ashley)	

CRPRC - REVIEW COMMENT RECORD (RCR)

.. Date	2. Review No.
10/23/2009	
3. Project No.	Page 7 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
35	H-1-91513, Sheet 1; For all areas with roll-up doors proposed, please ensure that opening is appropriately sized for the placement and removal of the large pieces of equipment needed.	Current design does not show dimensions of roll-up doors at aforementioned location.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
36	H-1-91512; Sheet 7; This drawing indicates that the solution used for pH testing will be discharged to the 2,500 gallon waste water cistern. The solution after pH testing can be discharged into the drain trench for the recycle sump.	The P&ID should replace the pH with Chlorine.	Please revise drawing.	Y	Accept. Drawing will be revised accordingly. (Ashley)	
37	H-1-91186, Sheet 2; This drawing needs to show that the effluent tank has a high low level alarm and high high level alarm to indicate when contents need to be pumped out. Also, need to have an adequately sized sump pump to discharge into vacuum truck.	Current design does not show any indicators to the effluent tank nor does it show a sump pump.	Please revise drawing with requested addition.	Y	Accept with Comment. Subject alarms are shown on Sheet 7. A sump pump will be added (local control). (Ashley)	
38	H-1-91513, Sheet 1; In the fire pump room, this drawing needs to show a berm around the inside day tank and the outside main fuel tank.	It is not clear if current design includes aforementioned.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
39	H-1-91506, Sheet 1; Please revise drawing to allow for a spigot to be in close proximity of the 500 gallon water trailer for better accessibility when filling is required.	It is not clear if current design includes aforementioned.	Please revise drawing with requested addition.	Y	Accept. Two (2) 1 ½ inch camlock water spigots will be located in the corner of the building near the water trailer – one internal to the building, one external. (Ashley)	

General Comments – Civil Site Plan/Layout and Design

CRPRC - REVIEW COMMENT RECORD (RCR)

1. Date: 10/23/2009
2. Review No.:
3. Project No.:

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
40	H-1-91183, Sheet 1; Please revise import water line routing per our discussions (it was agreed that a portion of the proposed 8-inch line would pass through a small portion of old growth sage brush on the east side of our tie-in point to reduce pipe length).	90% design does not currently reflect the change in routing.	Please revise drawing addressing the comment.	Y	CHIP	
41	H-1-91506, Sheet 1; This drawing needs to be modified to clearly show that sufficient lighting is provided for all areas, including work areas and safety showers located within the pre-engineered building structure. Need to also show exterior lighting for entryways.	It is not clear if current design includes aforementioned	Please revise drawing with requested addition.	Y	Accept. (Ashley)	
42	H-1-91506, Sheet 1; This drawing needs to show heaters spaced around the inside of the building to keep equipment at required temperature during periods of freezing temperatures.	Current design does not show any heaters within the building.	Please revise drawing with requested addition.	Y	Accept. 3-4 unit heaters will be added/shown. From an equipment perspective building temperature must be maintained between 35 and 98 °F. (Ashley)	
43	Site plans need to show layout of building and walkways to office trailers.	The plans provided do not show walkways.	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
44	H-1-91184, Sheet 1; Per our earlier discussions, a new gate valve located downstream of the existing 8-inch gate valve (STA 80+98) was to be installed. The detail provided on H-14-91185-5 does not reflect installation of the new valve	Current design does not show new valves being installed on the 8-inch export line to 100K Area.	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
45	H-1-91513, Sheet 1; This drawing needs to show exhaust ventilation & exhaust outlet for the chemical storage room and fire pump room.	Current design does not show venting or exhaust location needed to make sure workers are protected.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	

CRPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
10/23/2009	
3. Project No.	Page 9 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
46	H-1-91513, Sheet 1; This drawing needs to show separate storage sumps (50-100 gallon) for each chemical to be used onsite in case the 55 gallon drums containing the chemical leaks. The sump should be able to be vacuumed out when needed. This should apply to the chemical storage area as well as the chemical feed tank area.	Current design does not show individual containment areas in case of chemical leakage.	Please revise drawing with requested addition.	Y	Accept. Sumps will be shown for reagent storage and feed tank areas. (Ashley)	
47	Need to have emergency lighting in case power goes out.	It is not clear if current design includes aforementioned	Please revise drawing with requested addition.	Y	Accept. Refer to H-1-91506. (Golberg)	
48	Exterior site grading and concrete pad slope not shown on the drawings.	Current design does not show site grading and concrete pad slope.	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
49	Need storm gutters to direct water away from entryways.	It is not clear if current design includes aforementioned	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
Construction Specification For 100-K Water Line And Filtration						
50	Section 02220, Part 1, 1.1C.; Reference is made to Fluor Hanford document HNF-23100, "Occupational Safety, and Health (OS&H) Program Manual"	The document referenced is outdated and should be reflective of new CHPRC contract.	Please replace reference with PRC-PRO-SH-32219," 10 CFR 851 CHPRC Worker Safety and Health Program Description", PRC-PRO-SH-40078, "Contractor Safety Processes", and Special Provisions SP-5	Y	Accept. (Conselman)	
51	Section 02235, Part 1, 1.1C.; Reference is made to Fluor Hanford document HNF-23100, "Occupational Safety, and Health (OS&H) Program Manual"	The document referenced is outdated and should be reflective of new CHPRC contract.	Please replace reference with PRC-PRO-SH-32219," 10 CFR 851 CHPRC Worker Safety and Health Program Description", PRC-PRO-SH-40078, "Contractor Safety Processes", and Special Provisions SP-5.	Y	Accept. (Conselman)	

CRPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
10/23/2009	
3. Project No.	Page 10 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
52	Section 09900, Part 1, 1.1A.; Reference is made to Fluor Hanford document HNF-23100, "Occupational Safety, and Health (OS&H) Program Manual"	The document referenced is outdated and should be reflective of new CHPRC contract.	Please replace reference with PRC-PRO-SH-32219," 10 CFR 851 CHPRC Worker Safety and Health Program Description", PRC-PRO-SH-40078, "Contractor Safety Processes", and Special Provisions SP-5.	Y	Accept. (Conselman)	
53	Section 13125, Part 1, 1.2A.1.; The building dimensions along with eave height will need to be modified ("Nominal 60-ft long by 40-ft wide by 20-ft eave height").	The dimensions for the pre-engineered metal building housing the microfiltration plant, fire pump and other ancillary pieces of equipment needs to reflect the design drawings.	Please replace requirement with: "Nominal 100-ft long by 50-ft wide by 20-ft eave height"	Y	Accept. (Conselman)	
54	Section 13125, Part 1, 1.6.B, Table 1-1 Design Criteria. The seismic design parameters are not correct (Sds = 0.588, Sd1= 0.192, I=1.5).	The seismic criteria verified by CHPRC subject matter experts require less stringent values.	Please replace the seismic design parameters with the following: S = 0.370, Sd1= 0.163, I=1.1	Y	Partially Accept. Values currently in specification are standard and bounding. (Conselman)	
55	Section 13125, Part 2, 2.8.B.1, "Provide one (1) 16-ft wide by 14-ft high roll up coiling door in the water treatment building. Locate the approach pads as shown in the sketches. Top of ....."	CHPRC will need three roll-up doors for the fire pump room, main area for tank maintenance, and a roll-up door for the chemical storage area. Height of roll-up door mentioned should be at minimum 20 ft and width of 15 ft.	Please revise the sentence to state the following: "Provide one (1) 20-ft wide by 15-ft high roll up coiling door, one (1) 20-ft wide by 10-ft high roll up coiling door, and one (1) 15-ft wide by 10-ft high roll up coiling door in the water treatment building....."	Y	Accept. (Conselman)	
56	Section 15130, Attachment 1 Data Sheets; The following pumps do not have any design data associated with them (labeled	Need information to finalize design.	Please revise specification to include pump design data.	Y	Accept. (Pierce)	

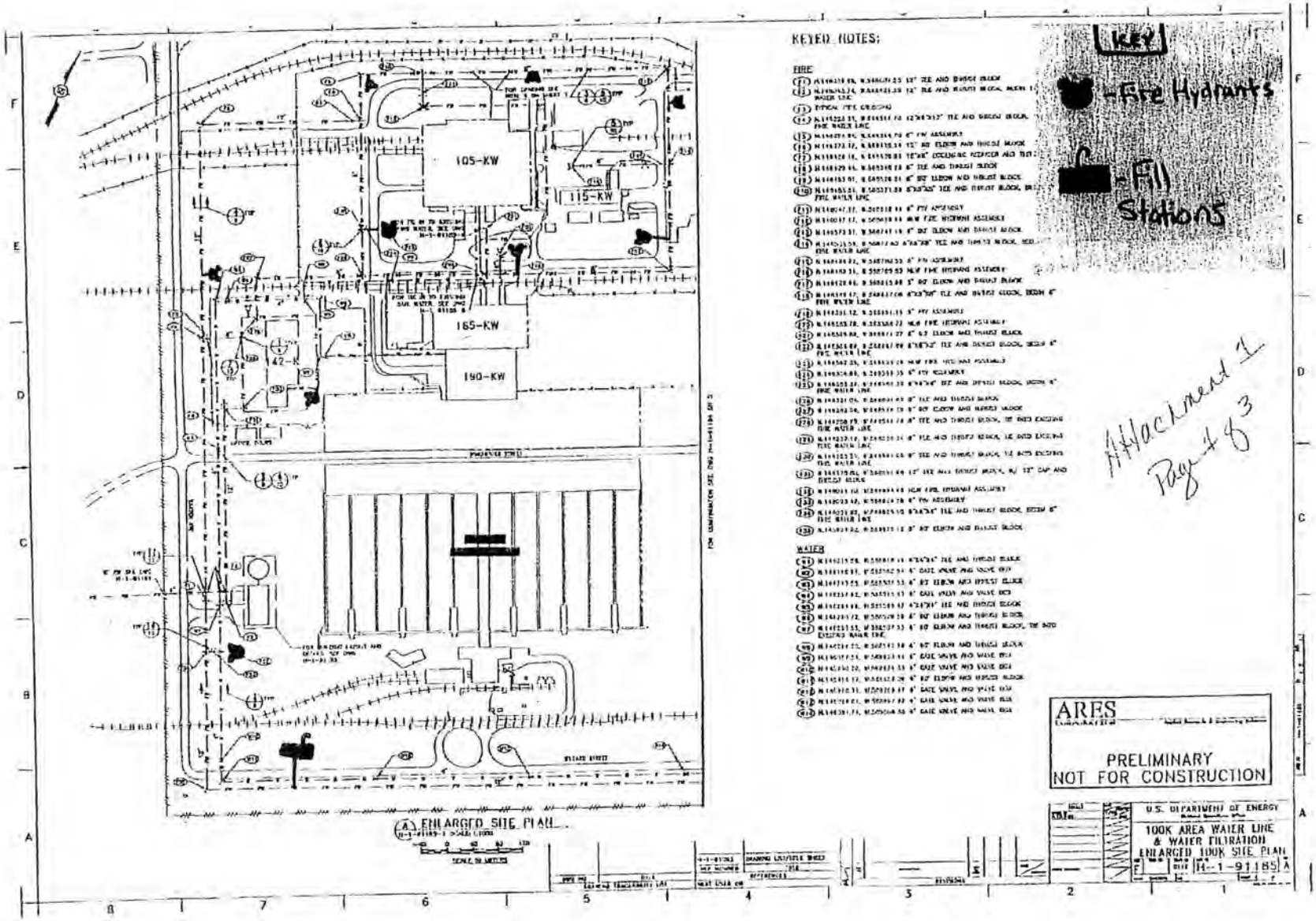
CRPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
10/23/2009	
3. Project No.	Page 11 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	"TBD"): Circulation pump, P-CO-1, P-CO-2, P-PC-1, P-REC-1 (only design capacity provided), and P-REC-2 (only design capacity provided).					
57	Construction Specification, Section 02650: Fire protection equipment should be required to be UL listed for fire protection service where applicable.		Revise as necessary.	Y	Accept. (Conselman)	
58	Construction Specification, Section 02650: For installation of fire protection equipment, please add a section comparable to 13125-3 §1.5 to specify required qualification and experience.			Y	Accept. (Conselman)	
59	Construction Specification, Section 13125: Revise building dimensions as necessary to accommodate service water pumps.		Revise as necessary. Building plan drawings should also be revised for consistency.	Y	Accept. (Hagensen)	
60	Construction Specification, Section 02650: 1. Please add AWWA C605, "Underground Installation of PVC Pressure Pipe and Fittings for Water" to §1.1.C and §3.1.C. 2. Please add to §3.1.M: "Pumper connection centered 1 ft 6 inches to 1 ft 10 inches above finished grade."		Revise as requested.	Y	Accept. (Conselman)	
Procurement Specification for Water Storage Tank						
61	Page 1, 1.1A; "The specification establishes the requirements for the contractor's design, fabrication and installation of a 650,000 gallon, 50-foot minimum diameter water storage tank....."	Incorrect volume indicated on specification	It is agreed that the intent is to provide specification for the design, fabrication and installation of a 750,000 gallon water storage tank. Please revise the description in the procurement specification.	Y	Partially accepted. The specification will be reworded to clarify that 650,000 gallons is the working capacity (per the Functional Design Criteria), but the overall volume including head space is to be determined by the vendor. (Pierce)	
Procurement Specifications for Fire Pumps						

CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 12 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
62	Page 1, Part 1, 1.1B.; Reference is made to "nickel-metal hydried" batteries for engine start..	Typographical error	Please replace nickel-metal hydried with nickel-metal hydride.	Y	Accept (Golberg).	



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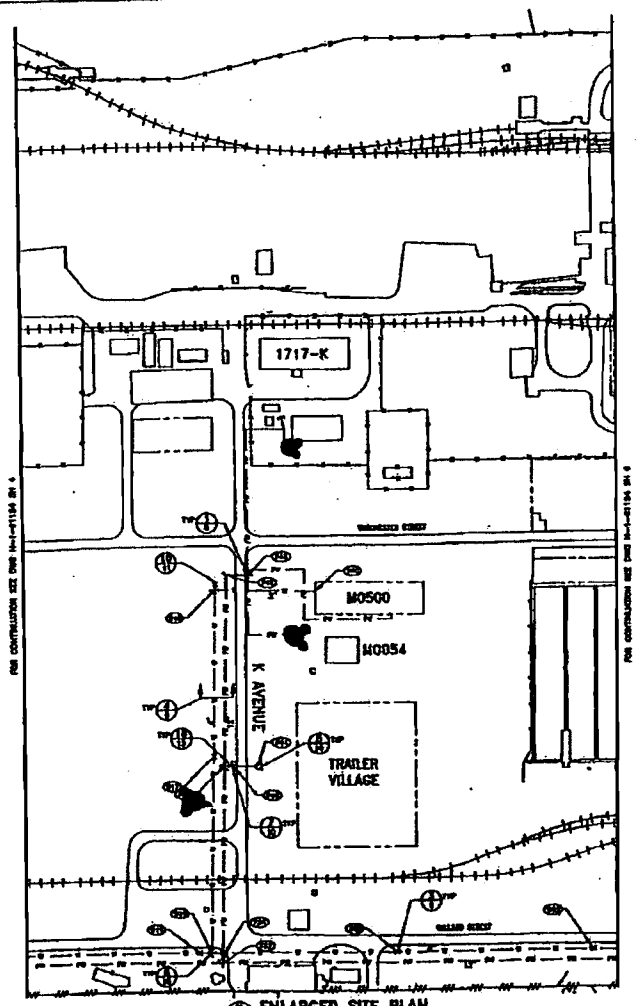

ENLARGED SITE PLAN

SCALE: 1" = 100'-0"

KEYED NOTES:

FIRE

- [illegible] 12" TEE AND THRUST BLOCK BEGIN 6" FIRE WATER LINE
- [illegible] 12" FIRE HYDRANT ASSEMBLY
- [illegible] REDUCING TEE AND THRUST BLOCK BEGIN 6" FIRE WATER LINE
- [illegible] 6" FIRE HYDRANT ASSEMBLY
- [illegible] HOT FIRE HYDRANT ASSEMBLY
- [illegible] 12" 90° ELBOW AND THRUST BLOCK
- [illegible] TEE AND THRUST BLOCK TIE IN

WATER

- [illegible] 6" GATE VALVE AND VALVE BOX
- [illegible] 6" TEE AND THRUST BLOCK
- [illegible] 6" GATE VALVE AND VALVE BOX
- [illegible] TEE AND THRUST BLOCK
- [illegible] HOT TAPS
- [illegible] CONNECTION TO EXISTING TANKER
- [illegible] 6" GATE VALVE AND VALVE BOX
- [illegible] 6" GATE VALVE AND VALVE BOX

Attachment 1
Page 2 of 3

ARES CORPORATION

PRELIMINARY
NOT FOR CONSTRUCTION

U.S. DEPARTMENT OF ENERGY

100K AREA WATER LINE & WATER FILTRATION ENLARGED 100K SITE PLAN

H-1-91185 A

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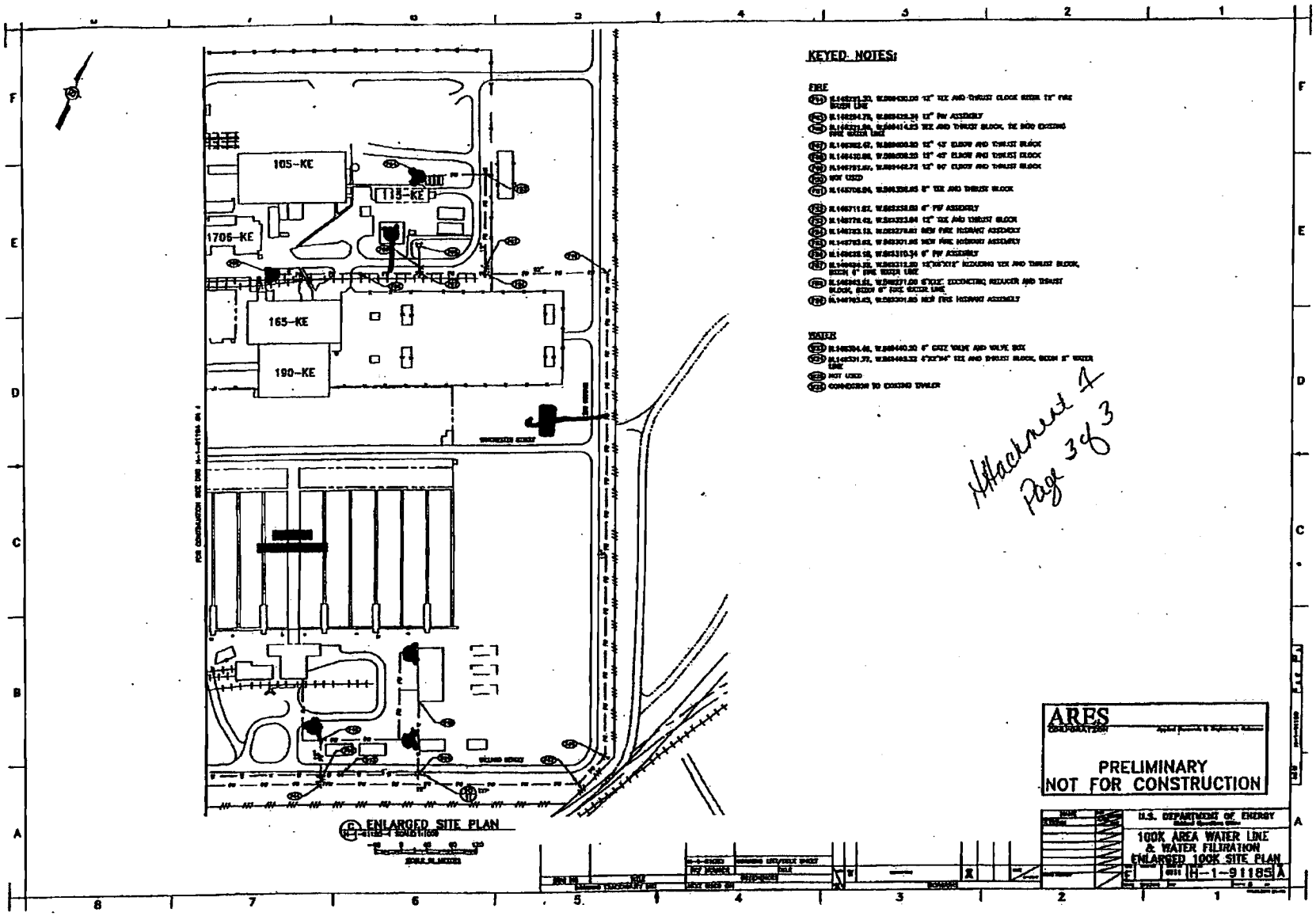

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EXHIBIT 60

CHPRC CONDITION REPORT FORM

Status: Closed CR NUMBER: CR-2010-2597

Issue Identification and Processing

Initiator:	Initiating Document:	Date Identified:
Omberg Carro, Susan K		8/24/2010

Title of Issue:
Installation of Fire Suppression System Without Required Design Approval

Description of Issue:
On Tuesday, August 24th, 2010, the 100K Fire Protection Engineer was notified by facilities operations personnel that the scope of work for the day for the 100K new water treatment facility was to include installation of the fire suppression system. The design for this system has significant comments still outstanding from 100K Fire Protection Engineering, and has not been reviewed and approved by the Fire Marshal's Office. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes.

Requirements Not Met: (Orders, Requirements, Procedures)
CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter. Section E.1.d.2 provides the Hanford Fire Marshal the authority to review and approve site construction documents and shop drawings for new construction. HNF-36174, DOE Fire Protection Handbook - Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the Hanford Fire Marshal's Office.

Responsible Project/Program:
D & D

Date Submitted:
8/24/2010

Other Related Documents:
HNF-36174, DOE Fire Protection Handbook; MSC-RD-9118, Fire Protection Design/Operations Criteria

Immediate Action(s) Taken:
The EPC construction manager was notified that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. The EPC construction manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the Fire Marshal's Office.

Recommended Corrective Actions:
Project shall obtain a revised design from the subcontractor, and submit such design for review and approval as required. Work shall not recommence until after approval of the revised design. The prime contractor shall submit a formal corrective action plan that states how they intend to prevent similar violations in the future.

Initiator Comments:
Stephen R. Douglass

Associated Files
Approval-to-screen-out.htm

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure

Significance Level:	Date Submitted to Responsible Manager:	Date CAP was approved by Responsible Manager/Delegate:
Screened-Out	10/28/2010 - Edington, Max L	

☐ ORPS ☑ Compliance Determination ☐ NTS

PAAA Compliance Determination Number:
CHPRC-PAAA-2010-0741

Significant Level Justification:

Sent back from Assignment by Edington, Max L. Responsible manager. Please screen out this CR to CR-2010-3049. Although submitted a month apart both CRs represent the exact same condition and screened at the same level as adverse.

This condition was rescreened from an adverse condition to a screen out at the request of the responsible manager per above justification. CR-2010-3049 is screened as adverse will document the apparent cause analysis and correct actions to address this condition.

PLH

Assigned To: Olsen, Rae Ann	**Date Assigned:** 9/14/2010
Extent of Conditions:	
Causal Analysis Method Used:	**Analysis Completion Date:**
Analysis Results:	
Trend Codes:	
Cause Codes:	
PAAA/851 Citations: 830.122(e)(1)	
ISMS:	

Record Authentication

Authenticated By: Kelley, Judy H	**Date Authenticated:** 11/3/2010

EXHIBIT 61

CHPRC CONDITION REPORT FORM

Status: Closed CR NUMBER: CR-2010-3049

Issue Identification and Processing

Initiator:	Initiating Document:	Date Identified:
Eide, Don	SAC-2010-1169	9/29/2010

Title of Issue:
100K - Fire Suppression System Field Work Stop Work (ARRA): SAC- 2010-1169

Description of Issue:
100K Senior Mgmt issued a Field Work Stop Work on the 100K Fire Suppression System Upgrade pending a comprehensive Design Document review and approval.

Requirements Not Met: (Orders, Requirements, Procedures)	Responsible Project/Program:
N/A	D & D
Date Submitted: 9/29/2010	**Other Related Documents:**

Immediate Action(s) Taken:
Stop Work initiated

Recommended Corrective Actions:

Initiator Comments:
Responsible Manager is Max Edington
Suggested screening is TUF

Associated Files
Files are available through IDMS

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure

Significance Level:	Date Submitted to Responsible Manager:	Date CAP was approved by Responsible Manager/Delegate:
Adverse	9/29/2010 - Edington, Max L	11/10/2010 - Eide, Don

☐ ORPS ☐ Compliance Determination ☐ NTS

Significant Level Justification:
Screened As Adverse.

The CR documents the implementation of a Stop Work of field work on the upgrades to the 100K Fire Suppression System upgrade pending a design document review that it would seem should have been done prior to starting the work. This is considered an adverse impact to the operation of the project, and further analysis is warranted.

This will necessitate an apparent cause at a minimum, and the completion of an extent of condition review in accordance with appendix B of PRC-PRO-QA-052.

DBW

Assigned To:	Date Assigned:
Alaconis, Walter	10/28/2010

Extent of Conditions:
This condition was caused by an oversight in the BTR procedure PRC-PRO-AC-186. The oversight deals with the interface with the Hanford Fire Marshal and design reviews. Other portions of the D&D Project are not affected by this oversight but other CHPRC projects could be. Corrective Action #3 will address this oversight.

Causal Analysis Method Used:	Analysis Completion Date:
Apparent	11/10/2010

Analysis Results:
Review the attached file, 110k Fire Suppression Stop Work ACA, for the details of this analysis. Beginning the week of October 18, 2010 an Apparent Cause Analysis was conducted over several days involving the Project Manager (CHPRC D&D), Construction Manager (CHPRC EPC), Project Design Authority Engineer (CHPRC D&D), 100 K Area Deputy Fire Marshal (FFS) and D&D Technical Support (CHPRC D&D). Interviews were

concluded on November 5, 2010 and the attached file was written to document the results.

Trend Codes:
OP08 - Chapter 8, Control of Equipment and System Status
EN04 - Design Documentation/Specification
MS10 - ISM –Management Review

Cause Codes:
A1B3C01 - Design / documentation not complete
A5B2C08 - Incomplete / situation not covered

PAAA/851 Citations:

ISMS:
CF-D - Perform Work within Controls
CF-E - Provide Feedback and Continuous Improvement

Corrective Action Items

Action #:	Actionee:
1	Deleyos, Bing

Action Statement:
Identify which Fire Marshal approval is required and transmit information to Construction Manager.

Due Date: 12/31/2010

Closure Requirements:
Closure statement indicating action taken and date completed. Attach a copy of the correspondence that notified the Construction Manager.

Action Taken:
DRAFT document from the Hanford Fire Marshal, indicating approvals required, was transmitted by FPE to CM via e-mail on 12/21/10.

E-mail of correspondence and the file attached to e-mail were uploaded to this CRRS item.

Completed Date: 12/21/2010

Action Approved By: Alaconis, Walter

Action Approval Date: 12/27/2010

Action #:	Actionee:
2	Koch, Michael R

Action Statement:
Obtain clarification on the authority of the Deputy Fire Marshal role. Note: MSA currently has draft document in DOE-RL for review and approval.

Due Date: 4/27/2011

Closure Requirements:
Closure statement indicating actions taken and date completed. Attach a copy of the final documentation that clarifies the Deputy Fire Marshal's role.

Action Taken:
The CR-2010-3049 CA#2 was to obtain clarification on the authority of the Deputy Fire Marshal role, this action is being closed with the submittal of a draft copy of DOE O 420.1B SCRD, Rev 4 required by CR-2010-3375 CR#2. Information regarding Deputy Fire Marshal duties is contained in the draft.

CR-2010-3375 CR#2 which needs "Update the status of revised Fire Protection Program procedures for inclusion of roles and responsibilities of the Site Fire Marshal, the Fire Marshal's Office, Deputy Fire Marshals and Fire Protection Engineers to reflect changes to the DOE O 420.1B SCRD, Rev 4 (new Rev 5)" satisfies the intent of CR-2010-3049 CA#2.

CR-2010-3375 CR#2 is scheduled to be completed by 9/30/2011.

Summary:
CR-2010-3049 CA#2 is being closed because it is the identical action as CR-2010-3375 CR#2 being performed by the DFM office.

Completed Date: 4/27/2011

Action Approved By:	Action Approval Date:
Eide, Don	4/27/2011

Action #:	Actionee:
3	Taylor, Michael L

Action Statement:	Due Date:
Reconcile the MSA and CHPRC procedures so the approval requirements are clearly identified in the PRC-PRO-AC-186 Procedure	1/31/2011

Closure Requirements:

Closure statement indicating actions taken and date completed. Attach a copy of the revised approved procedure to this Condition Report.

Action Taken:

PRC-PRO-AC-123 governs the preparation of requisitions by the requesting organization.
PRO-123 includes numerous references for requestors to include supporting organizations in the preparation and approval of procurement-related documents. Section 2.2.3 for example describing BTR responsibilities:

Obtain and incorporate all project and functional support organization assistance, input and approvals in order to ensure that complete and adequate acquisition documentation is provided to the procurement organization and the contractor.

PRO-123 also requires the use of ATTACHMENT 5 Functional & Procurement Concurrence Checklist to for BTRs to determine when supporting organizations –including Fire Protection should be involved with the preparation and approval of SOWs. Included is a reference to the CHPRC Fire Protection Engineer. Instruction 4 for example and one of the many references to Fire Protection are copied below

4. When any of the questions/topics in the checklist are marked as "YES" applicable –then insert the name of the SME who provided feedback for the applicable sections and obtain concurrence/authorization to proceed on the SOW or applicable documents.
Does this affect the following? Safety, environmental, and quality requirements or established envelopes Emergency response procedures Emergency equipment Safety or Fire Protection equipment -

PRC-PRO-AC-186 Statements of Work, describes the process and includes templates for the preparation of Statements of work. PRO-186 and the referenced templates include numerous references to identification of hazards and inclusion of supporting organizations in making sure SOWs and the resulting contract completely address hazards. Section 3.3.6 specifically addresses fire protection engineering:

When procuring services that involve any activity listed in Sections 2.2 and 2.3 of HNF-PRO-8589, Hanford Fire Marshal Permits, contact the Fire Prevention organization to determine whether a Hanford Fire Marshal Permit is required. Document as applicable in the SOW. Similarly, if any Fire Protection design features, egress, combustibles, protection systems will be potentially impacted by Contractor activities, coordinate requirements with the Project Fire Protection Engineer

Section 4.8 of the Hazardous SOW template modified to include the following language.
A. When the contract includes significant design or construction activities or any items that require a fire protection/code interpretation the Deputy Fire Marshal for the facility shall be contacted for interpretation and required permits in accordance with MSC-RD-8589, Hanford Fire Permits.

Procurement procedures and guidance clearly direct requestors and BTRs to the cognizant CHPRC subject matter expert or point of contact. The

Completed Date: 12/17/2010

CHPRC SME is the responsible representation for the CHPRC to external organizations and outside agencies.	
Action Approved By: Eide, Don	Action Approval Date: 1/31/2011

Action #: 4	Actionee: Douglass, Stephen
Action Statement: Per the requirements of MSC-RD-9118, Section 2.1.1, obtain the approval and permit of the Hanford Fire Marshal's Office (reference OA33896 Finding #1).	Due Date: 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of permit issued by the Fire Marshal's office.	
Action Taken: Per the requirements of MSC-RD-9118 Section 2.1.1 requested and obtained the required Fire Marshal Permits (9 Total). See attached file titled FireMarshalPermits	Completed Date: 12/16/2010
Action Approved By: Alaconis, Walter	Action Approval Date: 12/16/2010

Action #: 5	Actionee: Douglass, Stephen
Action Statement: Per the requirements of MSC-RD-9717 Section 2.1.2 complete a Hanford Fire Department Construction/Demolition Fire Safety Inspection Checklist, Siteform A-6002-692, (reference OA33896 Finding #2).	Due Date: 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach a completed copy of the approved checklist.	
Action Taken: Per the requirements of MSC-RD-9717 Section 2.1.2 a Contractor Fire Plan Request was prepared and submitted to the Hanford Fire Department. See attached file named "Contractor pre-fire plan request" Per the requirements of MSC-RD-9717 Section 2.1.3 a Construction/Demolition Fire Safety Inspection Checklist was prepared and submitted to the Hanford Fire Department. See attached file named "Construction/Demolition Fire Safety Inspection Checklist"	Completed Date: 12/16/2010
Action Approved By: Alaconis, Walter	Action Approval Date: 12/16/2010

Action #: 6	Actionee: Edington, Max L
Action Statement: Complete review of actions taken and lift Stop Work on the Supply portion after Fire Marshal approval has been obtained	Due Date: 2/7/2011
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of the signed DCN.	
Action Taken: Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the supply portion for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached file DCN-KUP-163)	Completed Date: 2/8/2011

Action Approved By:	Action Approval Date:
Eide, Don	2/9/2011

Action #:	Actionee:
7	Edington, Max L
Action Statement: Complete review of actions taken and lift Stop Work on the Sprinkler portion after Fire Marshal approval has been obtained.	**Due Date:** 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of signed DCN.	
Action Taken: Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the sprinkler system for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached file WTFSprinklerSubmittal.pdf).	**Completed Date:** 12/16/2010
Action Approved By: Eide, Don	**Action Approval Date:** 12/16/2010

Action #:	Actionee:
8	Edington, Max L
Action Statement: Complete review of actions taken and lift Stop Work on the Detection/Alarm portion after Fire Marshal approval has been obtained.	**Due Date:** 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of signed DCN.	
Action Taken: In coordination with consultant fire protection engineer, design-build contractor, and the Deputy Fire Marshal, the 100K Infrastructure project has re-designed the fire alarm system for the new 100K water treatment facility. The attached DCN (WTFFireAlarmDCN.pdf) has been approved by the Deputy Fire Marshal.	**Completed Date:** 12/16/2010
Action Approved By: Edington, Max L	**Action Approval Date:** 12/16/2010

Action #:	Actionee:
9	Edington, Max L
Action Statement: Complete review of actions taken and lift Stop Work on the Distribution portion after Fire Marshal approval has been obtained.	**Due Date:** 2/7/2011
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of signed DCN.	
Action Taken: Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the distribution system for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached files DCN-KUP-153.pdf and DCN-KUP-091.pdf	**Completed Date:** 2/8/2011
Action Approved By: Edington, Max L	**Action Approval Date:** 2/8/2011

Action #:	Actionee:
10	Edington, Max L
Action Statement:	**Due Date:**

Complete review of actions taken and lift Stop Work on the Fire Pump portion after Fire Marshal approval has been obtained.	2/7/2011
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of signed DCN.	
Action Taken: Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the fire pump portion for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached file SUB15300-01V10.pdf)	**Completed Date:** 2/8/2011
Action Approved By: Eide, Don	**Action Approval Date:** 2/9/2011

Action #: 11	**Actionee:** Edington, Max L
Action Statement: Complete review of actions taken and lift Stop Work on the Fire Wall portion after Fire Marshal approval has been obtained.	**Due Date:** 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of signed DCN.	
Action Taken: In coordination with the consultant fire protection engineer, the Deputy fire Marshal, and the design-build contractor, the 100K Infrastructure project has re-designed the fire walls for the new 100K water treatment facility. The attached contractor submittal (WTFFireWallSubmittal.pdf) has been approved by the Deputy Fire Marshal.	**Completed Date:** 12/16/2010
Action Approved By: Edington, Max L	**Action Approval Date:** 12/16/2010

Record Authentication

Authenticated By: Mitcheltree, Brian	**Date Authenticated:** 4/28/2011

CHPRC CONTRACTOR DOCUMENT SUBMITTAL FORM

ORIGINAL

(1) PROJECT NO.	(2) CONTRACT NO./RELEASE NO.	(3) SUBMITTAL REGISTER NO.	(4) VERSION	(5) DATE PREPARED
100K Potable Water Treatment Facility	Contract No. 36534 / Release No. 031	13125-02	03	8-30-2010

(6) CONTRACTOR: George A. Grant, Inc.
1333 Gillespie, Richland, WA 99352

SIGNATURE Tim Doyca DATE: 8-30-2010

(7) TO: PROJECT RECORDS SPECIALIST MSIN: E6-16 Phone: 509- 376-6290

RECEIVED BY E mail: FAX: 509- -

PROJECT RECORDS SPECIALIST: LISA SMYSER DATE: 08/31/2010

(8) QTY/E	(9) DOCUMENT NUMBER	(10) REV	(11) No. of pgs	(12) FORMAT (DWG, MFC, P3, GEN, PDF)	(13) TITLE / DESCRIPTION	(14) APPROVAL TYPE (AP, APW)	(15) ASSOCIATED SPEC OR SOW REF. NO.	(16) CHPRC REVIEW STATUS A	B - NO	B - YES	C
1	13125-02 Ver. 3	0	8	DWG	Stamped Structural & Architectural Drawings, Plans & Details	APW	SOW 1.4(B)				X

(17) SUBCONTRACTOR REMARKS (If this is a re-submittal to a previously approved submittal then explain why it is being re-submitted here.)

(18) REVIEWER DISTRIBUTION (HARD OR ELECTRONIC)

NAME	NAME	NAME

(19) CHPRC DOCUMENT APPROVER(S)	(20) DUE DATE BACK TO APPROVER(S)	(21) DUE DATE TO CONTRACTOR
SAM WAJEEH per email 9/7/10	09/06/2010	09/07/2010

(22) SUMMARY OF COMMENTS (IF ANY) SEE ATTACHED COMMENTS...

(23) BTR CONCURRENCE/APPROVAL: (NAME / SIGNATURE / DATE)
STEVE DOUGLASS per email 9/22/10

(24) PROJECT RECORDS SPECIALIST: [ ] Submittal Version Complete
[ ] Partial Complete

PROJECT RECORDS SPECIALIST LISA SMYSER DATE: 09/24/2010

(25) SUBMITTAL FORMAT: (USED IN BLOCK 12)
DWG = AutoCad
GEN = Contractor's Format
MFC = Microsoft Format Compatible
P3 = Primavera Schedule
PDF = Adobe Acrobat (Portable Document Format)
HC = Hard Copy

(26) SUBMITTAL APPROVAL TYPE: (USED IN BLOCK 14)
APW = Approval Required Prior to Work
AP = Approval Required

(27) SUBMITTAL REVIEW STATUS: (USED IN BLOCK 16)
A Conforms to the Contract Requirements
B NO-No resubmit. Minor Comments. Approved with exceptions as corrected.
B YES-Resubmit. Minor Comments. Approved to proceed; however resubmittal is required.
C Revise and Resubmit

A-6004-757 (REV 2)

EXHIBIT 62

From: Wajeeh, Usama E
To: Smyser, Lisa A
Subject: C - Revise and Resubmit: Contract No. 36534-031, SUB 13125-02 V3, STAMPED STRUCTURAL & ARCHITECTURAL DWGS, Status: **Out For Review**
Date: Tuesday, September 07, 2010 2:45:42 PM

Please see attached comments from Fire Protection below. Sam

I reviewed these drawings and have a few comments additionally:

1 – Rooms 102-105 show 10 ft high ceilings but there is no detail which shows a fire rating, the wall type 2 detail on sheet 2 looks like it may have been intended to meet a UL - p516 or the 2 hour version of it but this should be clarified.
2 – The 1 and 2 hour wall assembly listing UL - U465 and U412 show the walls going all the way to the roof. According to the drawing these walls surround rooms 102-105 therefore all these walls should already go to the ceiling. I'm not sure this is what I saw on the walkdown (they may not have been completed yet). This would also imply that given this and the 10' ceiling the unheated space above the ceiling issue needs to be addressed. You could potentially make the case that the walls should only go to the lower ceiling eliminated the unheated inaccessible space above the rooms but this needs to be addressed in the plan.
3 – The exterior walls are not shown as being a fire assembly. This is in conflict as the exterior doors are shown as requiring a fire rating. At a minimum the exterior structural elements require protection within the fire compartment. A case could probably be made to not require rated walls for non structural exterior elements but the easy path would be to provide rated construction.

Thanks

-Jason

PROCUREMENT / CONTRACT SUBMITTAL
APW ☐X AP ☐
A ☐ Conforms to the Contract Requirements
B ☐ Minor Comments - Approved With Exceptions as Corrected
☐Re-submittal required ☐Re-submittal not required
C ☐X Not Approved - Revise and Resubmit
Sign: STEVE DOUGLASS Date: 09/22/2010
~~per email~~

From: Omberg Carro, Susan K
Sent: Thursday, September 02, 2010 2:27 PM
To: Wajeeh, Usama E
Cc: Kemp, Jason B; Edington, Max L
Subject: RE: Interior Wall Sched

Sam,

In short, I agree. These drawings appear to provide details for the wall construction, with the UL design numbers. The suspended ceilings appear to be shown, with no UL design number provided. Penetrations are not addressed, including an item of particular concern, the structural steel penetration through the suspended ceiling.

Downloading the assembly details from the UL website shows that there are multiple important assembly details for the walls that do not appear to be addressed by these drawings. The UL design provides a maximum stud spacing, information on floor and ceiling runners, and staggering of

gypsum board for multi-layer assemblies, acceptable methods of attachment, and acceptable backing for horizontal joints that are not addressed by the details provided in the drawing. Some of this may be difficult to verify by inspection at this point in time, as both sides of the wall have been finished. That makes it even more important to receive a detailed description of the construction as performed. If necessary we can cut into the wall to verify conformance.

Thanks,

Susan

From: Wajeeh, Usama E
Sent: Thursday, September 02, 2010 8:48 AM
To: Omberg Carro, Susan K
Cc: Kemp, Jason B
Subject: Interior Wall Sched

These are the drawings we received from Grant regarding their wall details (H-1-91XXX SH1 is the only location showing a 1 hr/2 hr assembly). No details indicating recessed fixtures, wall corners or the boxing of the beams. These are insufficient and will reply back to the submittal as such. Please let me know if you have any specific comments.

Sam

Brown, Walter R

From:	Morgan, Gregory
Sent:	Monday, October 31, 2011 10:02 AM
To:	Jackson, Dale E; West, Dale C; Brown, Walter R
Cc:	Weil, Stephen R
Subject:	RE: 100 K IUUP Surveillance Report Final Version Enclosed
Sensitivity:	Confidential

Dale:

This looks good. Do we need a new "date report completed", on the first page?

Respectfully,

Greg Morgan

From: Jackson, Dale
Sent: Thursday, October 27, 2011 4:47 PM
To: West, Dale; Brown, Walter (CONTR); Morgan, Gregory
Cc: Weil, Stephen
Subject: 100 K IUUP Surveillance Report Final Version Enclosed
Importance: High
Sensitivity: Confidential

Gents:

Please do one last review on the enclosure. I think it is now ready to be briefed to Mr. Corey as it incorporates all edits that we believe are appropriate in light of CHPRC's Factual Accuracy Analysis and ODD's suggestions on format and content. Let me know what you think.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

Jackson, Dale E

From: Jackson, Dale
Sent: Monday, November 07, 2011 5:08 PM
To: Brown, Walter R
Subject: 100 K Memo
Attachments: Shoop Memo re S-11-EMD-PRC-001.doc

Russ:

Does the enclosure capture your suggested changes?

DEJ

Weil, Stephen R

From: Jackson, Dale E
Sent: Thursday, March 08, 2012 3:06 PM
To: Weil, Stephen R
Subject: (b)(5)

Steve:

I got and understand your message regarding Jeff's information on (b)(5) I asked Marcy this morning to set an appointment with Ray for early next week to discuss any changes we need to make to the Surveillance Team comments on the CAP. That should prepare us to meet with CHPRC mid to late next week and give them guidance (again) on how we think they need to proceed. Thanks for the info.

DEJ

Weil, Stephen R

From: Jackson, Dale E
Sent: Thursday, March 08, 2012 12:23 PM
To: George, Marcy
Cc: Corey, Ray J; Frey, Jeffrey A; Weil, Stephen R; West, Dale C; Morgan, Gregory Z; Brown, Walter R
Subject: Request Meeting With Mr. Corey

Marcy:

During a discussion with Ray last Tuesday afternoon, he informed me that he would like to make some changes in the comments the 100K IUUP Surveillance Team developed in response to CHPRC's Corrective Action Plan. He and I agreed that the Team members should meet with him early next week to go over the comments on the CAP. I am open any time Monday or Tuesday, and I believe the other Team members can make themselves available also. I think the proposed meeting shouldn't require no more than one hour.

Will you take a look at Ray's calendar and suggest a meeting date, time and place?

Thanks,
Dale Jackson

Weil, Stephen R

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 4:01 PM
To: Corey, Ray J
Cc: Frey, Jeffrey A; Weil, Stephen R
Subject: FW: (b)(5) Now In ESTARS

Importance: High

Ray:

I responded to Jenise's information on the contract obligation language and thanked her. I also pointed out that while a (b)(5) (b)(5) I recommend (b)(5) (b)(5)

Respectfully,
Dale Jackson

From: Connerly, Jenise C
Sent: Wednesday, February 29, 2012 3:13 PM
To: Jackson, Dale E
Cc: Weil, Stephen R; Frey, Jeffrey A; Corey, Ray J; Sieracki, Sally A
Subject: RE: Letter (b)(5) Now In ESTARS

Dale,

While Friday is the due date established by correspondence control, it has no contractual significance. There is no deliverable time in Section C for DOE's response to corrective action plans.

I'm out for the remainder of the week, but if you decide you do need to get a letter out, Sally is available to sign, and I can be reached on my cell phone, 430-0923.

Jenise

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 2:06 PM
To: Connerly, Jenise C
Cc: Weil, Stephen R; Frey, Jeffrey A
Subject: Letter (b)(5) Now In ESTARS
Importance: High

Jenise:

With Mr. Corey's permission, EMD's letter (b)(5) **is now in ESTARS** (copy enclosed FYI). It is a slightly different version (b)(5) than you have previously seen, but covers the comments you have previously offered re. (b)(5) (b)(5) Keep an eye open for this one, and any help you can provide in expediting the concurrence process will be greatly appreciated. **We must deliver this letter to CHPRC by COB this Friday**. I will hand deliver it to the CHPRC President's Office on Friday if needed, and provided I have Mr. Shoop's and your signatures in time.

Thanks,
Dale Jackson

Weil, Stephen R

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 3:49 PM
To: Weil, Stephen R
Subject: (b)(5)

Steve:

Any idea on when you may get to reading and concurring on the (b)(5)

Respectfully,
Dale

Weil, Stephen R

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 2:19 PM
To: Fritz, Lori L; Kruger, Paul W; Wilson, Michael B; Wilson, Michael B
Cc: Weil, Stephen R
Subject: Draft Surveillance Report For Factual Accuracy Review
Attachments: S-12-EMD-MSC-001 v022412.docx

Colleagues:

During the last quarter of calendar year 2011, RL EMD performed a surveillance focusing on operation of the 200 Area public drinking water system and compliance with applicable State and federal regulations. The preliminary surveillance report, "Review of Mission Support Contract (MSC) Water Utilities Cross-Connection Control Program and Practices" (S-12-EMD-MSC-001) is now complete. A copy of the draft report is enclosed to enable MSA to perform of a factual accuracy review, and offer comments to RL. While the operation of the drinking water system primarily falls under MSA's Site Infrastructure & Logistics organization, I am also copying Safety, Health & Quality, and Energy & Environmental Services due to the cross cutting nature of RL's inquiry and the breadth of the preliminary findings contained in the Surveillance Report.

Please review the content of the enclosure transmitted with the e-mail, and provide me any comments you may have regarding factual accuracy no later than 30 days from today's date. I am available to meet with each of you, either individually or collectively to try to answer any questions you may have. If you would like to meet, please respond to this e-mail, or you may telephone me on 376-8086 or 948-5540 and we can make arrangements.

Sincerely,
Dale Jackson
Surveillance Team Lead
RL-EMD

Weil, Stephen R

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 2:06 PM
To: Connerly, Jenise C
Cc: Weil, Stephen R; Frey, Jeffrey A
Subject: Letter (b)(5) Now In ESTARS
Attachments: (b)(5)

Importance: High

Jenise:

With Mr. Corey's permission, EMD's letter (b)(5) **is now in ESTARS** (copy enclosed FYI). It is a slightly different version (b)(5) than you have previously seen, but covers the comments you have previously offered re (b)(5) (b)(5) Keep an eye open for this one, and any help you can provide in expediting the concurrence process will be greatly appreciated. **We must deliver this letter to CHPRC by COB this Friday**. I will hand deliver it to the CHPRC President's Office on Friday if needed, and provided I have Mr. Shoop's and your signatures in time.

Thanks,
Dale Jackson

Weil, Stephen R

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 11:31 AM
To: Teynor, Thomas K
Cc: Corey, Ray J; Weil, Stephen R
Subject: Rejection of CHPRC's 100K Surveillance Corrective Action Plan
Attachments: (b)(5)

Tom:

The 100K IUUP Surveillance Team has reviewed a Corrective Action Plan (CAP) submitted by CHPRC in response to the 100K IUUP Surveillance (S-121-EMD-PRC-001). As explained in the enclosed letter that will enter ESTARS concurrence today, the (b)(5) We made substantial comments (for RL use only) (b)(5) and I am available to brief you on those details as well as the enclosure in general if you so desire. Give me a phone call, or you may respond to this e-mail if you like.

Regards,
Dale Jackson
RL-EMD
376-8086
948-5540

Weil, Stephen R

From: Jackson, Dale E
Sent: Tuesday, February 28, 2012 10:55 AM
To: Frey, Jeffrey A
Cc: Weil, Stephen R
Subject: Action on the 100K IUUP Proposed CAP (CHPRC-1200377

Importance: High

Jeff:

I just discovered today that CHPRC's proposed CAP (CHPRC-1200377) in response to the 100K IUUP Surveillance was assigned to you in ESTARS on Feb. 2, 2012 with a due date of: NO ACTION.
We need to respond to the CAP by this Friday or it will be deemed approved as submitted. As you are aware, I briefed Ray last Thursday afternoon and made a recommendation (b)(5) Ray wanted to read all of our comments on the proposed CAP before making a decision. Thus far, I haven't heard anything further from him. Do you want to reassign the action in ESTARS to EMD at this point? Have you gotten any guidance from Ray on how would should proceed? Any guidance you can provide will be helpful.

Respectfully,
Dale Jackson
376.8086

Weil, Stephen R

From: Jackson, Dale E
Sent: Wednesday, February 22, 2012 3:52 PM
To: West, Dale C; Morgan, Gregory Z; Brown, Walter R
Cc: Weil, Stephen R
Subject: Draft (b)(5)
Attachments: (b)(5)

Importance: High

Gents:

The enclosure is what I am proposing to send to CHPRC re. the 100K IUUP CAP. Let me have any suggested corrections, or thoughts you may have.

Thanks,
DEJ

Weil, Stephen R

From: Jackson, Dale E
Sent: Monday, February 13, 2012 5:42 PM
To: Morgan, Gregory Z; West, Dale C; Brown, Walter R
Cc: Weil, Stephen R
Subject: Consolidated Comments on 100K CAP Enclosed
Attachments: Review of CHPRC-1200377 attachment 2 021412.docx

Gents:

The enclosure contains all of our individual comments on CHPRC's 100K Corrective Action Plan. Russ has scheduled Rm 554 for us tomorrow morning at 10:00 am, and our objective will be to consolidate our comments into Team comments and generally reduce the total number. See you then.

DEJ

Jackson, Dale E

From: Jackson, Dale E
Sent: Friday, December 02, 2011 10:12 AM
To: Morgan, Gregory Z
Subject: RE: 100K IUUP Surveillance

Thanks!

From: Morgan, Gregory Z
Sent: Friday, December 02, 2011 10:04 AM
To: West, Dale C; Jackson, Dale E; Brown, Walter R
Cc: Evans, David T
Subject: RE: 100K IUUP Surveillance

Jeff Frey has concurred on the hard copy of the Surveillance.

Ray Corey has it now.

Regards

Greg

From: Morgan, Gregory Z
Sent: Friday, November 25, 2011 10:45 AM
To: West, Dale C; Jackson, Dale E; Brown, Walter R
Cc: Evans, David T
Subject: RE: 100K IUUP Surveillance

On Friday, the legal offices at RL are dark – I suspect they are enjoying the Thanksgiving day weekend.

From: Morgan, Gregory Z
Sent: Wednesday, November 23, 2011 2:01 PM
To: West, Dale C; Jackson, Dale E; Brown, Walter R
Cc: Evans, David T
Subject: RE: 100K IUUP Surveillance

Marla Marvin just concurred and put it on Bob Carosino's desk.

She has minor comments; mainly typo's and formatting. Apparently, it will be up to Bob Carosino whether we need to address them before approval.

It is moving along.

Greg

From: West, Dale C
Sent: Tuesday, November 22, 2011 1:52 PM
To: Morgan, Gregory Z; Jackson, Dale E; Brown, Walter R
Cc: Evans, David T
Subject: 100K IUUP Surveillance

Greg checked it out and found out that Marla has the action. Apparently she is reviewing the report and hopes to be complete before we leave for Thanksgiving.

Dale

Jackson, Dale E

From: Jackson, Dale E
Sent: Tuesday, December 06, 2011 12:13 PM
To: Marvin, Marla K
Subject: (b)(5)

Sensitivity: Confidential

Tracking:

Recipient	Read
Marvin, Marla K	Read: 12/6/2011 12:36 PM

PRIVILEGED AND CONFIDENTIAL

ATTORNEY-CLIENT COMMUNICATION

ATTORNEY-CLIENT PRIVILEGE CLAIMED

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Marla:

(b)(5)

Thanks,
DEJ

Jackson, Dale E

From: Jackson, Dale E
Sent: Thursday, December 08, 2011 4:27 PM
To: Brown, Walter R; Morgan, Gregory Z; West, Dale C
Subject: 100K Surveillance Report

Tracking:

Recipient	Read
Brown, Walter R	Read: 12/9/2011 12:38 PM
Morgan, Gregory Z	Read: 12/9/2011 7:43 AM
West, Dale C	Read: 12/12/2011 7:08 AM

Gents:

Mr. Shoop signed the 100K Surveillance transmittal package this afternoon, and Amy delivered it to correspondence control for mailing. It should go out this afternoon or tomorrow morning (but don't know since it is a contractor's day off). Thanks for everyone's efforts, and now the real work will begin re. corrective action.

Regards,
Dale Jackson

Jackson, Dale E

From: Jackson, Dale E
Sent: Friday, December 09, 2011 8:12 AM
To: Weil, Stephen R
Subject: 100K Briefing for WDOH

Tracking:

Recipient	Read
Weil, Stephen R	Read: 12/9/2011 8:24 AM

Steve:

Now that the Report has actually issued, it seems we should make another inquiry regarding (b)(5) (b)(5) Have you heard anything from him? So far, I haven't gotten anything back on OCC's position.

DEJ

Jackson, Dale E

From: Jackson, Dale E
Sent: Wednesday, February 15, 2012 8:59 AM
To: Morgan, Gregory Z
Subject: RE: 100K IUUP Surveillance RCA Report Review

Everything went well. We are meeting to continue work today at 10:30 am in 555. I'll put you on calendar.

Regards,
DEJ

-----Original Appointment-----
From: Morgan, Gregory Z
Sent: Wednesday, February 15, 2012 7:56 AM
To: Jackson, Dale E
Subject: Declined: 100K IUUP Surveillance RCA Report Review
When: Tuesday, February 14, 2012 10:00 AM-1:00 PM (GMT-08:00) Pacific Time (US & Canada).
Where: Fed. Bldg., Rm 554

Sorry – I was in Olympia.

How did the meeting go?

Greg

Jackson, Dale E

From: Teynor, Thomas K
Sent: Wednesday, February 29, 2012 12:43 PM
To: Jackson, Dale E
Cc: Corey, Ray J; Dowell, Jonathan A; Weil, Stephen R; Bryson, Dana C
Subject: RE: (b)(5)

Thank you Dale for the heads up. I will read through the attachment provided and email my comments to you should I have any. Thank you for the opportunity to review.

R/Tom

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 11:31 AM
To: Teynor, Thomas K
Cc: Corey, Ray J; Weil, Stephen R
Subject: (b)(5)

Tom:

The 100K IUUP Surveillance Team has reviewed a Corrective Action Plan (CAP) submitted by CHPRC in response to the 100K IUUP Surveillance (S-121-EMD-PRC-001). As explained in the enclosed letter that will enter ESTARS concurrence today, the (b)(5) We made substantial comments (for RL use only) (b)(5) and I am available to brief you on those details as well as the enclosure in general if you so desire. Give me a phone call, or you may respond to this e-mail if you like.

Regards,
Dale Jackson
RL-EMD
376-8086
948-5540

Jackson, Dale E

From: Jackson, Dale E
Sent: Monday, January 09, 2012 10:38 AM
To: Connerly, Jenise C
Cc: Weil, Stephen R
Subject: Surveillance S-11-EMD-PRC-001, 100K IUUP

Jenise:

Has there been any response to our December 9, 2011 letter transmitting the above reference Surveillance Report and directing development of a corrective action plan? CHPRC apparently received the letter on December 12, which by my calculations would require the CAP to be submitted on or before (b)(5)
(b)(5)

So far, I have heard absolutely nothing from the Contractor. CHPRC has entered each of the Report's Findings and Observations into its CRRS system, but the deadlines for management action contained in the CR items in the system are February 10, 2012 (obviously beyond the 45 day period specified). It's also interesting that all of the Findings and Observations were assigned a CRRS system significance level of "Track Until Fixed." CHPRC's own CRRS system guidance document states that the "Track Until Fixed" significance level should be assigned to incidents that, while the occurrence is undesirable, a reoccurrence is acceptable. [Emphasis added]

CHPRC also entered the overarching Concern documented in the Report into their CRRS system, and assigned it a significance level of "Significant" (the systems highest rating, and one that requires performance of a root cause analysis). All of this seems to suggest that (b)(5)
(b)(5)

Drop by or give me a phone call when you get a chance so we can discuss the matter further. In any event, I'd like to know what the date is that DOE expects arrival of their CAP.

Regards,
Dale Jackson

Jackson, Dale E

From: Jackson, Dale E
Sent: Tuesday, March 06, 2012 2:23 PM
To: Nelson, Amy C
Cc: Morgan, Gregory Z; West, Dale C
Subject: (b)(5) Status

Amy:

Do you know if the (b)(5) letter has been signed by Mr. Shoop and if it has been transmitted to the Contractor?

Thanks,
Dale

Jackson, Dale E

From: Jackson, Dale E
Sent: Thursday, March 08, 2012 3:06 PM
To: Weil, Stephen R
Subject: Status of (b)(5)

Steve:

I got and understand your message regarding Jeff's information on (b)(5) I asked Marcy this morning to set an appointment with Ray for early next week to discuss any changes we need to make to the Surveillance Team comments (b)(5) That should prepare us to meet with CHPRC mid to late next week and give them guidance (again) on how we think they need to proceed. Thanks for the info.

DEJ

Jackson, Dale E

From: Jackson, Dale E
Sent: Thursday, March 08, 2012 3:08 PM
To: George, Marcy
Subject: RE: Request Meeting With Mr. Corey

Marcy:

Let's go ahead and put it on Ray's calendar. I'll try to coordinate with the other Team members, but would you add them (Dale West, Greg Morgan, Walter Brown, Steve Weil) when you calendar the item?

Thanks,
Dale

From: George, Marcy
Sent: Thursday, March 08, 2012 1:19 PM
To: Jackson, Dale E
Subject: RE: Request Meeting With Mr. Corey

2:30-3:30, 3/14. Will that work?

Thank you,

Marcy R. George
YAHSGS LLC Administrative Assistant supporting
DOE RL/Assistant Manager for Safety and Environment
509-376-6278 (Ofc) 509-376-6621 (Fax)
marcy.george@rl.doe.gov

From: Jackson, Dale E
Sent: Thursday, March 08, 2012 12:23 PM
To: George, Marcy
Cc: Corey, Ray J; Frey, Jeffrey A; Weil, Stephen R; West, Dale C; Morgan, Gregory Z; Brown, Walter R
Subject: Request Meeting With Mr. Corey

Marcy:

During a discussion with Ray last Tuesday afternoon, he informed me that he would like to make some changes in the comments the (b)(5) He and I agreed that the Team members should meet with him early next week to go over the comments (b)(5) I am open any

Jackson, Dale E

From: Marvin, Marla
Sent: Thursday, November 03, 2011 11:53 AM
To: Jackson, Dale E
Subject: surviellance response

Dale -- I keep forgetting to ask: can I get a copy of CHPRC's response to your report -- and our response back to their response? Thanks!

Marla Marvin, Attorney, Office of Chief Counsel U.S. Department of Energy, Richland Operations Office
509-376-1975

Do not forward this message without my permission; it is intended for the use of those to whom it was addressed. This email may contain privileged or confidential information and may not be subject to discovery or release under FOIA. If you have received this in error, please notify me. Thank you.

Jackson, Dale E

From: Shoop, Doug
Sent: Tuesday, November 08, 2011 3:15 PM
To: Jackson, Dale E
Cc: McCormick, Matthew S; Corey, Ray J; Frey, Jeffrey A; Weil, Stephen R; Gordon, Roger M; Garcia, Pete J Jr
Subject: 100K Infrastructure Utilties Upgrade Project Surveillance (S-11-EMD-PRC-001)

Dale,

Matt and I have reviewed the subject surveillance report to familiarize ourselves with the concerns, findings and observations contained in the report. We would like to thank you and the members of the surveillance team for the thorough review and write-up. Obviously, it is essential that CHPRC develop effective corrective actions that prevent recurrence. Thank you and the team for a job well done.

Doug and Matt

Crider, Tara L

From: Jackson, Dale E
Sent: Thursday, June 23, 2011 11:56 AM
To: Teynor, Thomas K
Subject: 100 K Surveillance Report

Importance: High

Tom:

We talked about meeting tomorrow to further discuss the 100 K Report. Do you still want to meet? If so, I'd like to do so before noon if possible.

From my perspective, (b)(5) I understand you have the input you need from the CO and legal, so I took no further action in that arena (OCC did do a review of the document, and I have incorporated the comments provided – mostly typographical). I have offered a briefing to Ms. Connerly, but she has not responded. I am meeting with our Cultural Resources Program Manager this afternoon to resolve our last outstanding question regarding CR Review.

Looks like at this point, (b)(5)
(b)(5)

In any event, let me know if you want to meet tomorrow, and if so, at what time.

Regards,

Dale Jackson
RL EMD
(509) 376.8086

Crider, Tara L

From: Jackson, Dale E
Sent: Monday, April 04, 2011 5:33 PM
To: Teynor, Thomas K
Subject: RE: Emailing: KBC Water Plt Replacement DOH Meeting Summary_100609

Tom:

Yes I have this one. Thanks for sending it along anyway.

Regards,
DEJ

-----Original Message-----
From: Teynor, Thomas
Sent: Monday, April 04, 2011 5:31 PM
To: Jackson, Dale
Subject: Emailing: KBC Water Plt Replacement DOH Meeting Summary_100609

Dale, Not sure if you have this document.

R/Tom

The message is ready to be sent with the following file or link attachments:

KBC Water Plt Replacement DOH Meeting Summary_100609

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Crider, Tara L

From: Jackson, Dale E
Sent: Thursday, June 23, 2011 12:01 PM
To: Teynor, Thomas K
Subject: RE: 100 K Surveillance Report

Thanks Tom, and have a good weekend.

From: Teynor, Thomas
Sent: Thursday, June 23, 2011 12:00 PM
To: Jackson, Dale
Subject: RE: 100 K Surveillance Report

Dale,

I agree we do not need to meet again on this matter and I concur with your intended path forward. Thank you .

Regards, Tom Teynor
Federal Project Director
Ph: 509-376-6363

From: Jackson, Dale
Sent: Thursday, June 23, 2011 11:56 AM
To: Teynor, Thomas
Subject: 100 K Surveillance Report
Importance: High

Tom:

We talked about meeting tomorrow to further discuss the 100 K Report. Do you still want to meet? If so, I'd like to do so before noon if possible.

From my perspective, (b)(5) I understand you have the input you need from the CO and legal, so I took no further action in that arena (OCC did do a review of the document, and I have incorporated the comments provided – mostly typographical). I have offered a briefing to Ms. Connerly, but she has not responded. I am meeting with our Cultural Resources Program Manager this afternoon to resolve our last outstanding question regarding CR Review.

Looks like at this point, (b)(5)
(b)(5)

In any event, let me know if you want to meet tomorrow, and if so, at what time.

Regards,

Dale Jackson
RL EMD

(509) 376.8086

Brown, Walter R

From: Jackson, Dale
Sent: Thursday, July 14, 2011 4:19 PM
To: Brown, Walter R
Subject: FW: 100K IUUP Surveillance Report

Russ:

I bcc ed this to your old e-mail and it bounced back. Hopefully you'll get it this time.

From: Jackson, Dale
Sent: Thursday, July 14, 2011 3:58 PM
To: Connerly, Jenise
Cc: Weil, Stephen
Subject: RE: 100K IUUP Surveillance Report

Jenise:

Thanks for getting back to me again. Hot or cold, I can take extreme temperature variations for short periods, and believe me this briefing won't take long. They will have already read the report, so going over the concern and findings in any detail is rather pointless now. I will cover the need to immediately address some outstanding issues (in particular, unresolved safety questions, and fire marshal authority), and explain the remaining procedural steps again. That's about it.

I think your recommendation to get Holly involved at this stage has tremendous merit. I'll work with Marla to see how we can make that happen.

Most of the snippets of information that have been trickling in today seem to suggest that CHPRC's initial response is to circle the wagons and attack the factual accuracy of the report. Interestingly enough, their attacks on accuracy reveal collateral information that opens new lines of inquiry if we should want to pursue them. For example, I saw reference today to PRB Meeting Minutes that we previously were told didn't exist. Go figure!

Regards,
Dale Jackson

From: Connerly, Jenise
Sent: Thursday, July 14, 2011 1:43 PM
To: Jackson, Dale
Cc: Marvin, Marla
Subject: RE: 100K IUUP Surveillance Report

Dale,

Thank you for the reassurance. I'm still concerned about (b)(5)

I'm concerned about the (b)(5) If it is acceptable, I would also like to include Holly Botes in the review, but I'll leave that to Marla and OCC to decide. Normally, Holly would review the surveillance and letter from a contractual standpoint when it goes into concurrence, but if Stan is looking at it, it might help to have her look at it now.

Jenise

From: Jackson, Dale
Sent: Thursday, July 14, 2011 11:53 AM
To: Connerly, Jenise
Cc: Marvin, Marla
Subject: RE: 100K IUUP Surveillance Report
Importance: High

Jenise:

I don't think there is much reason to worry, or that any harm has been done. When I learned late yesterday afternoon that CHPRC had the copy, I immediately notified Mr. Jaraysi by e-mail and phone message that what he possessed was apparently an uncontrolled copy and that CHPRC should not rely on its use for any purpose. I also informed him that if they desired a conformed copy prior to my providing a briefing (which is now scheduled for next Wednesday morning), he should make a request to that effect and it would be favorably received. He made the request, and a conformed copy, including exhibits, was given to him early this morning.

You should also know that I got a phone call from Stan Bensussen (CHPRC General Counsel) this morning wanting to meet with me and discuss the content of the Report. Stan says he is trying to understand exactly what message we are sending. He is concerned about multiple (b)(5) He suggested that the Report was (b)(5) Without responding to his comments, I told him I would be happy to meet with him, but that he should read the full report first. I also noted that since I am no longer attached to OCC, I would need to arrange for Marla Marvin (who reviewed the report for OCC) or another appropriate legal representative to be present. I suspect that after Stan reads the full report along with exhibits, he may conclude that he no longer wants such a meeting. I'll keep you and Marla posted.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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From: Connerly, Jenise
Sent: Thursday, July 14, 2011 6:16 AM
To: Jackson, Dale
Cc: Weil, Stephen; Sieracki, Sally
Subject: RE: 100K IUUP Surveillance Report

Dale,

My sincerest apologies as I am the source of the uncontrolled copy. Yesterday morning in my conversation with CHPRC regarding the push-back on the report, I provided a copy to Rick Millikin.

I have requested that Mr. Millikin not make further distribution, and I will not disseminate further, but I'm very concerned that I have introduced conflict into this situation and that I have compromised the integrity of the review/report.

If there is anything else I can do to make amends for my error, please let me know.

Jenise

From: Jackson, Dale
Sent: Wednesday, July 13, 2011 5:03 PM
To: Jaraysi, Moses
Cc: Weil, Stephen; Connerly, Jenise
Subject: 100K IUUP Surveillance Report
Importance: High

Moses:

I understand that you were supplied with an uncontrolled copy of the Draft 100K IUUP Surveillance Report this afternoon. Please be aware that the copy you received is not completely accurate in that it is not water marked "DRAFT," it does not contain the Report exhibits, nor the index to the exhibits. Since I am unable to determine what else may not be completely accurate, I suggest that you DO NOT rely on the copy you currently have for any purpose. If you desire to obtain a controlled copy of the Draft prior to receiving a briefing next week, I will welcome your request and arrange for a delivery.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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Brown, Walter R

From: Jackson, Dale
Sent: Monday, July 18, 2011 11:19 AM
To: Brown, Walter R
Cc: Weil, Stephen R
Subject: 100K Surveillance Report

Importance: High

Russ:

Please e-mail Marla Marvin an electronic copy of the 100K Report draft and exhibits. She needs the final version to get ready for a prospective meeting with Swenson and Bensussan next week. By the way, any news today from CHPRC?

Regards,
DEJ

Brown, Walter R

From: Brown, Walter (CONTR)
Sent: Monday, July 18, 2011 1:13 PM
To: Jackson, Dale E
Cc: Brown, Walter R
Subject: RE: 100K Surveillance Report

Will do. No news.

-----Original Message-----
From: Jackson, Dale
Sent: Monday, July 18, 2011 11:19 AM
To: Brown, Walter (CONTR)
Cc: Weil, Stephen
Subject: 100K Surveillance Report
Importance: High

Russ:

Please e-mail Marla Marvin an electronic copy of the 100K Report draft and exhibits. She needs the final version to get ready for a prospective meeting with Swenson and Bensussan next week. By the way, any news today from CHPRC?

Regards,
DEJ

Brown, Walter R

From: Marvin, Marla
Sent: Monday, July 18, 2011 1:25 PM
To: Brown, Walter R
Cc: Jackson, Dale E
Subject: RE: Watermarked Copy of 100K Report Enclosed

Russ – I've got hard copies of the exhibits, so I don't need those. This will do it. Thanks and keep having fun! Marla

---

From: Brown, Walter (CONTR)
Sent: Monday, July 18, 2011 1:22 PM
To: Marvin, Marla
Cc: Brown, Walter (CONTR); Jackson, Dale
Subject: FW: Watermarked Copy of 100K Report Enclosed

Marla: Please see attached current version of the surveillance which you reviewed some weeks ago. I will bring you a hard copy of the exhibits tomorrow (Tuesday, July 19, 2011). We have those on a PDF but the file is so big I have not been able to send it to anyone. I'm working on that problem with CTS. Thanks. Russ

---

From: Jackson, Dale
Sent: Wednesday, July 13, 2011 4:38 PM
To: Brown, Walter (CONTR)
Subject: Watermarked Copy of 100K Report Enclosed

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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Brown, Walter R

From: Brown, Walter (CONTR)
Sent: Monday, July 18, 2011 1:46 PM
To: Jackson, Dale E
Cc: Brown, Walter R
Subject: RE: Watermarked Copy of 100K Report Enclosed

I just gave Marla exhibits 59-62 which she did not have. Now she has the complete set.

From: Marvin, Marla
Sent: Monday, July 18, 2011 1:25 PM
To: Brown, Walter (CONTR)
Cc: Jackson, Dale
Subject: RE: Watermarked Copy of 100K Report Enclosed

Russ – I've got hard copies of the exhibits, so I don't need those. This will do it. Thanks and keep having fun! Marla

---

From: Brown, Walter (CONTR)
Sent: Monday, July 18, 2011 1:22 PM
To: Marvin, Marla
Cc: Brown, Walter (CONTR); Jackson, Dale
Subject: FW: Watermarked Copy of 100K Report Enclosed

Marla: Please see attached current version of the surveillance which you reviewed some weeks ago. I will bring you a hard copy of the exhibits tomorrow (Tuesday, July 19, 2011). We have those on a PDF but the file is so big I have not been able to send it to anyone. I'm working on that problem with CTS. Thanks. Russ

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From: Jackson, Dale
Sent: Wednesday, July 13, 2011 4:38 PM
To: Brown, Walter (CONTR)
Subject: Watermarked Copy of 100K Report Enclosed

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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Brown, Walter R

From: West, Dale
Sent: Wednesday, September 07, 2011 1:01 PM
To: Jackson, Dale E
Cc: Brown, Walter R; Morgan, Gregory Z; West, Dale C
Subject: RE: 100K Surveillance Finalization
Attachments: SURVEILLNCE REPORT NUMBER S-11-SED-PRC-006 West.doc; Accuracy Review, F08 revision 8-23-11 dcw.doc; Accuracy Review, F06 revision 8-23-11 dcw.doc

Sensitivity: Confidential

Dale,

Attached is my response to CHPRC's second accuracy review. I have responded to findings 6, 8, 9, 10, 11, and 15. I have also included revisions to Finding 6 and Finding 8 as identified by CHPRC's first round accuracy review. Please review my comments and edit as needed.

Thanks,

Dale

From: Jackson, Dale
Sent: Tuesday, September 06, 2011 4:54 PM
To: West, Dale; Morgan, Gregory; Brown, Walter (CONTR)
Subject: 100K Surveillance Finalization
Importance: High
Sensitivity: Confidential

Gentlemen:

Here are the 100K Surveillance documents I promised to send. I propose we try to get together for an hour sometime Thursday or late tomorrow afternoon to make sure we all agree on how to proceed. Let me know your availability.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

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U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE
SURVEILLANCE REPORT NUMBER S-11-SED-PRC-006
APPENDIX A

FACTUAL ACCURACY REVIEW AND FINAL DETERMINATION

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
S-11-SED-PRC-006-C01	The discussion of the concern states in part: "....The CHPRC 100K Infrastructure Utilities Upgrade Project (herein after "100K IUUP or "Project") failed to meet contractual requirements and other obligations during design and construction of the 100K Water Treatment Facility and the Fire and Potable Water Distribution System. CHPRC's corrective action system failed to recognize or otherwise address this pattern of conduct and extent of condition. CHPRC made unilateral decisions to "proceed at risk" in contravention of contractual requirements and State environmental statutory obligations....."	The Concern statement is factually accurate, but with comment. WDOH had been engaged since prior to beginning design. CHPRC showed good faith effort to keep all parties informed. CHPRC did not follow all rules to the "T", but did not disregard the rules. Comments were received from WDOH on pertinent documents. • The CHPRC 100K IUUP coordinated participation with the appropriate CHPRC personnel (SMEs) to ensure that contractual requirements were being addressed. • Pertinent representatives from the WDO H and DOE participated in project meetings and decision points during the conceptual and design phases. • However, the 100K IUUP proceeded with construction activities prior to obtaining all required written regulatory approvals. WDOH was on board throughout the process. Project knew that they were	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
		working "at risk", meaning that some work might have to be redone. Concern statement is factually inaccurate. However, several of the statements in the concern are conclusions that do not appear to be based on facts in evidence. The conclusions are presented as statements of fact but in reality assume intent without considering alternative motives or reasons for the action or failure to act. Statements such as "In order to meet project schedules" or "pattern of conduct" are examples of language that fit into this category. The statement regarding unilateral decisions is at odds with statements in the report acknowledging the participation of RL. These statements draw conclusions about intent without providing a factual basis or considering alternative motives or reasons and the overall paragraph lacks evidence to support the conclusions. For example, the statement on unilateral decisions is not fully supported by the evidence since the report notes significant collaboration with RL. In regards to the failure to identify requirements (second paragraph), the broadness of the statement makes it inaccurate. A more accurate statement would be that the requirements were not fully understood. Recommend: • Modify the first sentence as follows: "CHPRC failed to recognize, or otherwise failed to implement..."	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
		• Modify the last sentence to delete "unilateral". • Modify third sentence of second paragraph to add "or fully understand and implement..." after identify.	
	Page 16, second paragraph: In the interviews conducted with the 100K IUUP Project Director and the Project Manager, when asked what did the phrase "slow down on the drinking water system until we have [W]DOH's approval" mean to each of them they both stated they didn't know, and acknowledged that construction continued.	The author states that construction continued. However, he does not state that construction on the potable water system was stopped. In multiple discussions, email evidence, and the project schedule it was demonstrated to the author(s) that the results of the discussion was to <u>not</u> work on the potable water system further until coordination with WDOH. However, it was explained to the author that work would continue on the non-potable components of the system. Therefore, the statement in the report is inaccurate. In interviews the author stated that his interpretation is that even the raw water delivery system is part of the potable system. Despite the author's interpretation, the paragraph is nonfactual as written.	
S-11-SED-PRC-006-F01:	Text at the bottom of page 11: 'Although the Checklist contains a question regarding whether "the service" involves "Ecology, Department of Health, or EPA requirements, investigation, or remediation," in response the CHPRC EP Manager provided "Yes" in the Applicability section of the form, and "No Comment" in the Project Contact/Reviewer section of the checklist....'	The Surveillance Report states that water system construction began on April 13, 2010 (p.13), and the project report was submitted to the Washington Department of Health on June 1, 2010 (p. 15). However, the CRD M 231.1-1A, Chg 2 (Supp Rev 1) has no requirements directly pertaining to Safe Drinking Water Act (WDOH) approval requirements for public water systems.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
		CHPRC had engaged in the permitting process with the WDOH from the start of the project. The statement insinuates that the contractor did not intentionally undergo the process of acquiring the necessary permits. The finding statement is factually accurate. This is consistent with what CHPRC self-identified. Communications with DOH were cordial, inclusive but informal. • Project proceeded at risk, in communication with DOH representative, but in a fashion not recognized by the regulations. • Approvals subsequently obtained, water plant is appropriately permitted. Personnel briefings held on proceeding "at risk" and obtaining environmental approvals have been held.	
	A. In the discussion of Finding F01 on page 15 fourth paragraph of this report it states in part: "In the interviews conducted with the 100K IUUP Project Manager, he stated his recollection that a teleconference was conducted on or about May 19, 2010 involving himself, the CHPRC President and CEO, CHPRC D&D Vice President, and the 100K IUUP Project Director concerning the future direction of the Project. At the conclusion of the teleconference the	A. The assessor states that in interview with the Project Manager, during a teleconference it was agreed to continue working on the potable water system. Also, it was not stated that this decision was unilateral. The Project Manager did not know. This is an interpretation the assessor inferred from the interview with the Project Manager. In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessors that the results of the	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	participants jointly decided to continue with construction activities on the potable water delivery system even though required WDOH approvals had not been obtained. He also stated that this decision was unilateral, as no approval of this decision was sought from any DOE representative." B. In the discussion of Finding F01 on Page 16 Second Paragraph it states in part: "In the interviews conducted with the 100K IUUP Project Director and the Project Manager, when asked what did the phrase "slow down on the drinking water system until we have [W]DOH's approval" mean to each of them they both stated they didn't know, and acknowledged that construction continued."	discussion was to not work on the potable water system further until coordination with WDOH. However, it was explained to the assessor that work would continue on the non-potable components of the system. Therefore, the statement in the report is inaccurate. In the interview, the assessor stated that his interpretation is that even the raw water delivery system is part of the potable system. Despite the assessor's interpretation, the paragraph is nonfactual as written. Management directed the project to not work on the potable water system. The raw water delivery system is a requirement of the fire protection system and therefore would be constructed with or without concurrence from WDOH. B. The assessor states that construction continued. However, he does not state that construction on the potable water system was stopped. In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessor(s) that the results of the discussion was to not work on the potable water system further until coordination with WDOH. However, it was explained to the assessor that work would continue on the non-potable components of the system. The project stopped work on the potable water system. The raw water delivery system is a requirement of the fire protection	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
		system and therefore would be constructed with or without concurrence from WDOH.	
S-11-SED-PRC-006-F02:	Contractor made no specific reference to objectionable language.	A CX was not submitted for approval prior to start of construction (CX submitted April 28, 2010). However, the necessity of a CX was discussed with the DOE NCO before January 27, 2010.	
S-11-SED-PRC-006-F03:		It took nearly 5 months to publish the final report. However, preliminary corrective actions were entered into CRRS within approximately 3 months (see CR-2010-1657). Delays were encountered in presenting this issue to the ESRB. Root Cause Analysis EM-RL-CPRC-GENLAREAS-2010-0013 was completed on 10/19/10. Fire system was designed for property protection, not for life-safety criteria. The finding implies a broader scope than the Discussion section. Additionally, no evidence is provided about failure to recognize the extent of condition. Several actions were taken to determine if similar issues with drinking water systems were present. No issues were identified beyond the unsecured core and the 100K noted in the root cause analysis, nor does the report support a conclusion that CHPRC failed to recognize the extent of condition.	
	Finding F03 states: "Upon discovery of its failure to meet environmental regulatory requirements, CHPRC failed to recognize	The assessor states that construction was not discontinued during the period of April 14, 2010 to July 21, 2010, except for a few	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	the extent of condition, to timely perform an analysis of causes, and to implement corrective actions." The discussion states in part on Page 20 Last Paragraph and Page 21 First Paragraph: "The RCA Report contains several factual errors. First, the report states that on May 26, 2010 the CHPRC NEPA SME determined that the NEPA CX had not been obtained and that the CX approval was obtained on May 27, 2010. Realization of the lack of NEPA CX approval occurred on May 24, 2010 and actual approval from DOE-RL obtained on May 26, 2010. The RCA Report also states that work was suspended during the week of June 1, 2010 on portions of the project "that clearly required WDOH approval." There is no evidence that any suspension of activities occurred on the project except for a few hours on May 18, 2010. In fact, the CHPRC ARRA weekly reports for the weeks of April 14, 2010 to July 21, 2010, clearly detail in both text and photographs that work continued without interruption on the project during that period. *See* Exhibit *21.*"	hours on May 18, 2010. Again, the assessor fails to acknowledge that work on the potable water system was stopped beginning May 20 through June 7, 201, due to communication with WDOH. Basis: In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessor(s) that work on the potable water system was stopped on or about May 20, 2010 until further coordination with WDOH on June 7, 2010. However, it was explained to the assessor that work would continue on the non-potable components of the system. In interviews the assessor stated that his interpretation is that even the raw water delivery system is part of the potable system. The project stopped work on the potable water system for the demonstrated period of time.	
S-11-SED-PRC-006-F04:	Contractor made no specific reference to objectionable language.	Contractor offered no comments.	
S-11-SED-PRC-006-	Contractor made no specific reference to objectionable language.	Contractor offered no comments.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
F05:			
S-11-SED-PRC-006-F06:	Discussion, states in 1st Paragraph, 3rd - 5th Sentence: "However, the 100K IUUP contracted with a private fire protection engineer (FPE) for a review and approval of design drawings. This contract FPE had no delegated approval authority from the HFMO. Drawings were reviewed by the contract engineer and comments returned to ARES Engineering, the company that produced the design."	However, more than one private fire protection engineer was contracted to review design over the life of the project. One contract engineer initially worked under contract to the Fire Protection Program; others worked under contract to the project. The fire sprinkler design (delivery side) was produced by Cascade, under contract to Grant. Design for the supply side portions of the system (riser placement, control valve, etc) was produced by ARES. Stop Work process was not used to stop work at appropriate times during construction. However, The Deputy Fire Marshal asked that work be stopped when it was noted that the ongoing work was not as per design. The Hanford Stop Work procedure DOE-0343 was not used.	
	"...the 100K IUUP contracted with a private fire protection engineer (FPE) for a review and approval of design drawings. This contract FPE had no delegated approval authority from the HFMO. Drawings were reviewed by the contract engineer and comments returned to ARES Engineering, the company that produced the design."	A contract FPE with URS was performing design review and approval tasks, but this individual was contracted by and reported through the CHPRC Fire Protection Engineering group, not the IUUP project. This individual eventually became part of the IUUP project around December, 2010, after his BTR became Engineering, but at that point he was not performing any approvals of design drawings. He was an advisor to the design team, similar to Hughes Associates. This URS FPE did not have delegated approval authority from the HFMO.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
		Also, the CHPRC FPE manager performed design reviews and provided comments but I don't believe he ever presumed that he had "approval" authority. He also never contracted directly by the 100K IUUP.	
S-11-SED-PRC-006-F07:	The discussion on Page 33 states in part: Page 33 First Four Paragraphs "The Apparent Cause Analysis contains no section that allows any work to be restarted before the completion of all the corrective action items. This is consistent with DOE-0343 Stop Work which applies to all Hanford contractor and subcontractor employees and can be accessed on the CHPRC Home Page on the Hanford Site Intranet and states, in relevant part: Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented* in accordance with Contractor procedures (logbook or other established method of reporting/tracking/communicating safety issues and corrective action management). *NOTE: For resumption of radiological work, consult the Radiological Control Manual for additional approval requirement." *See* DOE-0343 Stop Work Revision 2 Effective Date: January 18, 2010 page 3 of 6 third paragraph. Work was restarted on this Project in	The finding overlooks management discretion and the fact that the DFM signature on DMRs was the approval required to release the individual components of the fire protection system to resume work. No fire protection system was released for work until all associated DMRs went through the review and approval process. Work on Fire Protection Systems restarted before 12/16. December 16, 2010 is the date that a number of Hanford Fire Marshal permits were issued for various EP subsystems (e.g. fire alarm, fire sprinkler, etc.). However, even though permits are dated 12/16, work restart also required approved drawings. The October, 2010 date refers to a pipe stand that was installed to alleviate a condition believed to be unsafe (inadequate support of a horizontal section of pipe in the pump room). Installation of this pipe stand led to a PAAA finding. Premise of finding seems to be that approved revisions to CRRS actions cannot occur, and judgment cannot be applied by senior management in executing or revising Stop work "necessary corrective or	

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	October 2010. This restart of work was conducted in violation of the terms of the CR-2010-3049 D&D Project 100K Fire Suppression Stop Work Apparent Cause Analysis which evidently is the only written documentation of the terms and conditions of the Stop Work Order issued September 28, 2010."	compensatory actions". • Note that project was reassigned a DFM, obtained a contract FPE, resubmitted design media for each system, obtained approval and remedied issues on each system prior to resuming construction on that system. • Finding premise seems to be that a change to a CRRS item equates to violation of DOE stop work procedure. Suggest this be an observation that the bases for changes to the CRRS actions were not clearly documented.	
S-11-SED-PRC-006-F08:		Finding statement is factually accurate but could be more specific by stating "Fire Protection procedures..." The integration of safety and environmental management is outlined in PRC-MP-MS-003, *Integrated Safety Management System / Environmental Management System Description*. Per, that document, ISMS stands for the Integrated Safety Management System. PRC-MP-MS-003 explicitly calls for identification of requirements and controls related to fire protection. The discussion identifies more of an implementation problem than a system problem. Accuracy could be improved by using the intended program title and characterizing the issue as one of implementation rather than one of	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
		inadequate program . Revise the first sentence on page 37 to read: Integration of fire protection requirements is a weakness in the implementation of the CHPRC Integrated Safety Management System (ISMS). Alignment of MSA fire protection procedures and expectations for approvals prior to construction were not consistent with CHPRCs procedure set that includes flexibility for procurement and construction at risk. • Project was intentionally executed as a fast track project with management endorsement of risk. • Cascade fire protection, a sub to Grant construction, installed the building sprinkler line and heads in an unapproved fashion. This was remedied.	
	The discussion states in part: A) "The CHPRC did not follow the procedural requirements identified in DOE requirements, and in MSC-RD-9118 which requires that "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, *Life Safety Code*, shall be approved and permitted by the HFMO prior to installation or modification in	A) The 100K IUUP FPE/Deputy Fire Marshal participated in the reviews of the installation documents. That individual served as a liaison between the project and the HFMO. B) A meeting with the HFMO to discuss the change the fire line from 12-inches to 8-inches was conducted in March 2010 timeframe. In addition, the 100K IUUP and HFMO conducted a follow-up meeting with Dale West (DOE-RL Fire Protection Engineer) to further	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	accordance with MSC-RD-8589, Hanford Fire Marshal Permits."....." B) ".....The fire water pipe off the South East corner near CVDF (142K) was in place, but a change allowed a section of 12 inch to be replaced with 8 inch. This is contrary to the design and the *DOE Fire Protection Handbook-Hanford Chapter*, Section 4.2 requiring 12 inches minimum underground water distribution mains unless otherwise approved by the HFMO. The required HFMO approval had NOT been obtained for this change..." C) "Interviews were conducted with FPEs involved with the Project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft, even though full submittals had been requested of the Project."	discuss the issue for approval. Design document was submitted to DOE. The project relied on DFM for direction. C) FPE's assistance to the 100K IUUP was provided with any/all information available at that time.	
	<u>Page 38 Last Paragraph</u> Interviews were conducted with FPEs involved with the Project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft, even though full submittals had been requested of the Project. Some of the RCR review comments provided by the FPEs had still not been incorporated over one year later, yet RCR comments were dispositioned by the Project as "Comments Accepted." Final review packages for the fire alarm and fire	The project is not aware of any installation that had not been reviewed and signed off by an FPE. All DMRs involving the fire protection system were signed off by an FPE. The project used several FPEs including the 100K FPE and later two FPEs from PFP to correct defects. There was significant confusion among the team including the 100K DFM as to who had approval authority to approve design. So much confusion existed across the site that the HFMO actually put out a clarification letter in early September 2010.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	sprinkler systems had not been reviewed by the FPEs, yet the systems were installed in the building. A final design package, requesting 100% design review, had never been issued by the Project to date. Therefore, the Project had not received approval for the design.		
S-11-SED-PRC-006-F09:	Contractor made no specific reference to objectionable language.	Contractor offered no comments.	
F S-11-SED-PRC-006-10:	The Discussion in part states: ".....CHPRC made a unilateral decision during installation of the water main piping to change the twelve inch loop around the 105KW to eight inch pipe.".....	Discussions with the HFMO and the FPE/DFM took place to discuss the issue	
	Additionally, the original water loop design requirements called for twelve inch fire water mains in the 100K Area new water distribution system. CHPRC made a unilateral decision during installation of the water main piping to change the twelve inch loop around the 105KW to eight inch pipe. However, the equivalency request for relief from contractual requirements was not submitted to RL until after the piping had been installed. *See* letter CHPRC-1101317.	The author states that the decision for the fire water distribution system was unilateral to CHPRC. However, the author was informed in interviews that a meeting with HFMO was held and concurrence gained to proceed with both the 8" fire loop around 105KW and the non-looped system around 105KE. No minutes were provided from the meeting. The Project Engineer provided testimony to the author(s) that a meeting was conducted with HFMO and concurrence was gained for the exceptions to the fire distribution system as described above.	
S-11-SED-	No objections to specific language were	Initial building finish schedule did not	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
PRC-006-F11:	offered by the Contractor.	involve FPE/DFM for approval. Note that this finding should be combined with 6, 8, 9, 10, as they all deal with construction activities being executed too early.	
S-11-SED-PRC-006-F12:	No objections to specific language were offered by the Contractor.	Evaluation was performed in accordance with PRC-PRO-NS-062 Appendix B exclusions from the USQ process, CHPRC Unreviewed Safety Question USQ #0245-2010. USQ 0025-2011 scope: This USQ Determination reviews all Design Change Notices (DCNs) for the 100K Water System Upgrade Subproject that were identified as requiring USQ review in DD-48931. This USQ Determination does not review DCN-KUP-086, which was reviewed by USQ 0216-2010 Rev. 0, or DCN-KUP-091, which was also reviewed by USQ 0216-2010 Rev. 2. The discussion in Chapter 2 of the FSAR needs clarification on the description of the new Water Treatment Facility to ensure consistency with the design as built configuration.	
S-11-SED-PRC-006-F13:	Requirement: PRC-PRO-PM-25000, *Project Execution Plans*, Section 1.2 Scope, states "PRC-PRO-PM-24889 *Project Initiation and Execution*	Contrary to the above requirements, the final PEP does not contain an approval signature from either the CHPRC President or from the EPC Vice President. The 100K	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	defines how CHPRC subprojects are initiated and executed. PRC-PRO-PM-24889 is used in conjunction with this procedure." PRC-PRO-PM-24889. *Project Initiation and Execution*, Section 5.8 Project Execution Plan, states in part "...The CHPRC President's Office or the EPC Vice President is the approval authority for PEPs for projects with a TPC of $20M to $100."	Infrastructure Project Execution Plan, Section 3.3 Cost Baseline identifies the total project costs (TPC) for FY2009 and FY2010 estimated at $23,380,700.	
S-11-SED-PRC-006-F14:	No objections to specific language were offered by the Contractor.	The excavation permit was signed March 19, 2010. The cultural resource review process was completed April 22, 2010. The CX was approved May 26, 2010. The cultural clearance for outside the fence was completed before activities started there. I think coverage for inside the fence was covered by existing cultural reviews. Need input from Brett Barnes. The finding and description are not clear on the separate reviews and excavation permits covering areas inside the 100K fence and those for the raw water line outside the fence to connect to the export water line. Revise the finding and description to distinguish between the inside the fence and outside the fence reviews and permits.	
S-11-SED-PRC-006-F15:	No objections to specific language were offered by the Contractor.	While the finding statement is accurate, this issue had been self-identified by the CHPRC. Corrective actions are being addressed through CR-2010-3375 to clarify the roles and responsibilities of the Site Fire Marshal, Fire Marshal's Office, Deputy Fire Marshals, and Qualified Fire	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
		Protection Engineers. Corrective action #2 of CR-2010-3375 includes writing a new Administrative Interface Agreement "Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement between the CHPRC, WCH, and MSA. Actions are scheduled for completion by 9/30/11. MOU MSA-CHPRC-0800081, revision 0, *Memorandum Of Understanding, Rev. 0, Between The Hanford Fire Marshal's Office And Other Contractors With Fire Protection Engineers Designated As Deputy Fire Marshals* (CHPRC-080081) was issued on July 17, 2009. The blue sheet cover page on the MOU stated that it should be updated and re-issued in one year. The MOU between the CHPRC and the HFM expired on 7/17/10 and was never reinstated. The MOU described the functions of the Hanford Fire Marshal's Office (HFMO). It also specified activities and responsibilities of the project/facility FPE's and defined the interface role between the HFMO and those FPE's designated as project/facility Deputy Fire Marshals. The RL Supplemental Contractor Requirements Document (SCRD) 0 420.1 B delineates the general functions of the HFMO. The SCRD also references the Fire Marshal roles and responsibilities as contained in the Authority, Responsibilities, and Duties of the Hanford Fire Marshal (a.k.a. Fire Marshal Charter), and requires RL contractors to recognize and institutionalize the HFM's authority.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
S-11-SED-PRC-006-O01:	CHPRC had not ensured that the prime subcontractor safety representative for the 100-K Potable Water Treatment Facility construction site had completed the training requirements of the Hanford Site LOTO program prior to start of work. Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1, paragraph I. states in part, "Prior to start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RL-92-36 Rev. 1, and certification that all training is current." The RL Electrical SME asked the Grant Safety Representative in September 2010 if he was ever trained to DOE-0336, and he said that he was not and had submitted a request for this training over three months before, however he was not able to attend due to lack of class room openings. The SME asked the Grant Construction Manager how the Safety Representative could provide adequate safety oversight of other Grant construction workers and ensure compliance to DOE-0336 if he was not knowledgeable of the associated requirements. The Manager did not provide an acceptable response. The Manager also expressed his frustration on the unavailability of DOE-0336 training class openings, however classes were found to be available through HAMMER. CHPRC did not ensure that the prime subcontractor LOTO point of contact for the 100-K Potable Water Treatment Facility construction site knew when and where	The CHPRC Safety Representative had completed all required training as required by the Hanford Site LOTO program and was involved throughout with all construction activities.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	authorized worker tags were applied using the eight criteria per DOE 0336. DOE 0336 *Hanford Site Lockout/Tagout*, Section 5.13, states in part, "Designate a qualified member(s) of the Controlling Organization (CO) to be the lockout/tagout point of contact for the outside contractor for facilities that have a physical interface with an existing facility. Determine which of the following methods of lockout/tagout is to be used: Use of Authorized Worker (AW) locks and tags alone when all of the eight criteria listed below are met." The RL Electrical SME asked the Grant Safety Representative and Construction Manager if the Potable Water Treatment Facility primary disconnect was LOTO, and the SME was informed by both sources that the primary disconnect was not LOTO, but rather individual branch circuits were LOTO. During the walkthrough in September 2010 the SME observed that the primary disconnect was LOTO by two authorized worker tags. It appeared that the Grant Construction Manager (who had primary responsible for LOTO at this site) did not have good configuration control.		
S-11-SED-PRC-006-O02:	Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 4.9, paragraph B. states in part, "The Contractor will develop and maintain a work site Job Safety Analysis in accordance with PRC-PRO-SH-40078." In September 2010, the JSA for this construction site did not identify (LOTO) as a potential hazard. The Treatment Plant had power for over three weeks, and the	The CHPRC Responsible Manager provided constant oversight and was maintaining a current JSA in accordance with PRC-PRO-SH-40078. The JSA observed by the assessors had not been updated. No LOTO issues had been identified, no lost construction time, and no recordable issues had been noted. The Safety Manager has ensured that safety is a high priority at all times.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	JSA still had the "no" block re: LOTO as a hazard. When this was brought to the attention of the Grant Safety Representative, he stated that updates to the JSA were in the construction trailer and had not yet been added to the JSA package. It was the SME's understanding that Grant has only one JSA for this construction site, and so the construction workers who had signed this JSA had performed work during the previous three weeks without an adequate JSA advising them of the LOTO hazards. The Grant Safety Representative provided an inadequate briefing on their JSA. Two RL SME's and other CHPRC staff on a tour in September 2010 were asked to sign the JSA without a briefing or being instructed to read the JSA.		
S-11-SED-PRC-006-O03:	On June 18, 2009 the 100K Area ECO sent an email message to the CHPRC NEPA SME asking for help in obtaining a NEPA activity based CX determination. This message was copied to the IUUP Project Manager as well as the CHPRC EP Manager and other relevant individuals. This message also attached an EAS Form which identified construction or modifying a public water, raw water, or export water system as part of the work activities to be completed. *See* Exhibit 7. No response to this email was returned to the 100K Area ECO from either the CHPRC NEPA SME or the CHPRC EP Manager. On August 24, 2009, the 100K Area ECO	The Contractor made no written objection.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	sent a second email message to the CHPRC EP Manager which states: I have never been involved with installing a potable water treatment system . . . so I am heading into new territory. I checked out 15333, section 5.7 (see below). I also *need your help* as well. Thanks. If you could get me answers by COB, Wednesday, August 26, 2009. . . . *See* Exhibit 8 The ECO told the Assessment Team that, like his first email on this subject, he did not receive a response to his second email either. Had the CHPRC EP Manager responded in a timely manner to the above emails, the likelihood that all the required environmental requirements would have been improved.		
S-11-SED-PRC-006-O04:	During the Assessment Team's interview with the individual occupying the role of IUUP Project Manager from November 2009 to April 2010, he stated that he verbally requested that an independent quality assurance inquiry be done of the project prior to start of construction. A review of the CHPRC Integrated Evaluation Plan (IEP) Assessment Report data base reveals that no such inquiry was ever conducted by any CHPRC QA organization. Had an inquiry been conducted, in all likelihood, it would have revealed the lack of compliance with the applicable environmental requirements. This, in turn, would have resulted in a correction of these deficiencies prior to start of construction.	While it is accurate that no QA assessment was completed prior to start of construction activities. It cannot be determined that an assessment was required or requested. If a QA assessment had been planned and conducted prior to start of work, environmental requirements would have been reviewed only if they were included in the scope of the assessment; e.g. there is no guarantee that the assessment would have included an evaluation of compliance with applicable environmental requirements.	

REPORT ITEM NUMBER	LANGUAGE CONTRACTOR IDENTIFIED AS OJECTIONABLE	CONTRACTOR'S RELAVENT COMMENTS	Comments
	Unfortunately, no such inquiry occurred.		
S-11-SED-PRC-006-O05:	On April 7, 2010 a PRB for the 100K IUUP was conducted for work that included "Inside the Fence" activities. The materials presented to the PRB on April 7 contained no mention of applicable environmental or other regulatory requirements. *See* Exhibit 55. Later that day, the 100K IUUP Construction Manager sent an email message to the 100K IUUP Project Director stating that the PRB had approved construction. *See* Exhibit 56. On April 21, 2010 a second PRB was convened to review 100K IUUP work scope not reviewed by the first PRB on April 7. The additional work scope included an import water line and 100K fire water and potable water supply line. As with the materials presented to the first PRB, the materials presented on April 21 contained no mention of applicable environmental or other regulatory requirements. *See* Exhibit 57. The PRB again approved commencement of construction.	The statement in the Discussion section of the observation that "Had a regulatory requirements check list, or some other form of review or evaluation of environmental and fire safety regulatory requirements been included in the PRB review process, compliance failures might have been avoided" should be removed from the report."	

Jackson, Dale E

From: West, Dale C
Sent: Tuesday, January 03, 2012 8:20 AM
To: Jackson, Dale E; Brown, Walter R; Morgan, Gregory Z
Cc: Hill, Burton E (Burt); West, Dale C
Subject: IUUP Surveillance corrective actions

Gents,

I went out on CRRS to check and see if the CHPRC has input anything in for S-11-EMD-PRC-001. All of the concerns, findings, and observations have been input. They are not in order, but can all be pulled up by searching on the surveillance number. The concern was given a significance level of "Significant".
The other findings and observations were all given a "track until fixed" significance level.

The significance level justification was the same for each finding and observation (below)..

"This condition report was screened as a Track Until Fix per management direction as a method to gather under one new CR all the previous CRs that were written to address the finding or observation when the condition occurred in the past. While the surveillance report (S-11-EMD-PRC-001) was issued from DOE-RL on December 9, 2011 the identified findings and observations are historical in nature and may not represent a new condition. To ensure completeness each finding and observation will be reviewed based on previous actions taken to identify any gaps or new actions that need to be taken. Any new actions will be tracked in this condition report.
Note: The related Concern (C01) in this Surveillance is tracked under CR-2011-3840 as a Significant Issue. JHK"

The significance level justification for the concern is provided below...

"This RL Concern identifies weakness in the implementation of the CHPRC ISMS program for the 100K IUUP and indicates there are numerous examples of contractual and regulatory requirements not complied with. As such, CHPRC management has determined this Concern will be processed as a Significant Issue. A response per the requirements of DOE SCRD 470.2b is required."

I have copies of the condition report forms in my office if you want to make some copies for your use.

Greg, congratulations on your newspaper article!

Dale

Jackson, Dale E

From: Morgan, Gregory Z
Sent: Wednesday, February 22, 2012 1:28 PM
To: Jackson, Dale E; Brown, Walter R; West, Dale C
Subject: RE: Proposed Final Version of CAP Response

Dale/All:

Outstanding. And they are mild.

Regards

Greg Morgan

From: Jackson, Dale E
Sent: Wednesday, February 22, 2012 11:57 AM
To: Morgan, Gregory Z; Brown, Walter R; West, Dale C
Subject: Proposed Final Version of CAP Response

Gents:

Give the enclosure a final look over. If you find typos, etc., let me know. I also want to get rid of any "needlessly inflammatory" language, so watch for that too.

DEJ

Brown, Walter R

From: Morgan, Gregory
Sent: Wednesday, September 07, 2011 3:48 PM
To: Jackson, Dale E
Cc: West, Dale C; Brown, Walter R
Subject: FW: 100K Surveillance Finalization
Attachments: 100K Surveillance Report Appendix A.docx

Importance: High
Sensitivity: Confidential

Dale,

Attached is my response to CHPRC's second accuracy review. I have responded to finding 12. Please review my comments and edit as needed.

Additional comments on the Factual Accuracy Review follow:

(b)(5)

(b)(5)

Regards,

Greg

From: Jackson, Dale
Sent: Tuesday, September 06, 2011 4:54 PM
To: West, Dale; Morgan, Gregory; Brown, Walter (CONTR)
Subject: 100K Surveillance Finalization
Importance: High
Sensitivity: Confidential

Gentlemen:

Here are the 100K Surveillance documents I promised to send. I propose we try to get together for an hour sometime Thursday or late tomorrow afternoon to make sure we all agree on how to proceed. Let me know your availability.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

2011 Integrated Safety Management Workshop

September 12-15, 2011 Kennewick, WA
Learn more about it at: http://www.ism2011.com/

APPENDIX A, RICHLAND OPERATION OFFICE SURVEILLANCE REPORT S-11-SED-PRC-006
SUMMARY OF CONTRACTOR'S FACTUAL ACCURACY ANALYSIS AND RL RESPONSE
[DATE]

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-C01: In order to meet project schedules. CHPRC engaged in a pattern of conduct that failed to recognize, or otherwise failed to implement contractual requirements, failed to follow established procedures, and failed to meet statutory obligations.	CHPRC agrees that it did not plan and execute the 100K Water Treatment Facility and the Fire and Potable Water Distribution System project in full compliance with contractual, procedural, and environmental/ regulatory requirements. CHPRC disagrees that there is or was a pattern of conduct or intentional or knowing disregard for compliance with contractual, procedural and environmental requirements. CHPRC disagrees that the project design failed to meet contractual or other obligations. CHPRC disagrees that it made unilateral decisions to proceed at risk. CHPRC disagrees that its corrective action system failed to recognize and address the key planning and execution deficiencies associated with the project. CHPRC states that in many instances it agrees with the facts stated in the report, but that there are two kinds of omissions in the draft report. First, many relevant and important facts are missing and leave the incorrect and unwarranted impression that CHPRC took actions without the awareness of either the Department of Energy project managers and the Washington Department of Health. Second, the Concern set forth in the report ignores the proper assessment of facts in light of CERCLA requirements. A complete evaluation of the facts leads to the conclusion that no environmental laws or regulations were violated. Rather, the more appropriate conclusion is that CHPRC only failed to recognize and plan the project in light of CERCLA requirements. CHPRC states that: " . . . [T]here is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes in order to trigger the regulatory preemption authority of CERCLA Section 121(e)(1). CHPRC asserts that this "surveillance report" departs from traditional standards for conducting audits and assessments that normally focus on evaluating compliance with standards and requirements, while they avoid personalization, innuendo and implication. We believe this Report fails	CHPRC's request to modify Finding C01 is denied DOE acknowledge in footnote 1 of Surveillance Report S-11-SED-PRC-006 (Surveillance Report) that this project might have been entitled to the regulatory permitting exemptions of CERCLA § 121(e)(1), but that apparently the steps necessary to secure such entitlement were not all taken. CHPRC's asserts that: " . . . there is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes . . . . " However, the very OSWER Directive #9355.3-22 cited by CHPRC in it comments contradicts that assertion. More specifically, the OSWER Directive states: "The decision to provide an alternative water supply need to be documented in the appropriate decision document, such as a Record of Decision (ROD) or Explanation of Significant Differences (ESD) for remedial projects or an Action Memorandum for removal projects." Other facts confirm that CHPRC was not seeking the exemptions offered by CERCLA § 121. CHPRC's EASF checklist states this Project is not a CERCLA project and requires NEPA documentation. The Project's conduct of ultimately applying for multiple approvals from WDOH does not suggest it was proceeding pursuant to CERCLA. The Project produced no evidence that it evaluated any ARARs that would be applicable and documented findings in a CERCAL decision document. DOE acknowledges that CHPRC is entitled to its opinion regarding the methods and practices employed in conducting the Surveillance, but respectfully disagrees with CHPRC's conclusions. With regard to CHPRC's comments on pattern of conduct, failure recognize of extent of condition, and failure to comply with contractual obligations, DOE believes the multiple and varied failures to meet regulator or contractual conditions documented in the Surveillance Report are accurate and speak for themselves. DOE points out however that the terms "intentional," "reckless" and "knowing disregard" as used by CHPRC in its Factual Accuracy Analysis are terms invented by CHPRC

	that general standard. CHPRC points out that the potable water system project received eventual approval by WDOH that no corrective reconstruction was necessary, and the system was not used to deliver water until final WDOH approval was received. Consistent with its statements to CHPRC, WDOH has not ordered any corrective actions, nor has it taken any enforcement action against DOE or CHPRC. Proceeding with construction of the fire protection system before permits were obtained from the WDOH did not violate any environmental laws or regulations.	as they do not appear in the Draft or Final Surveillance Report.

APPENDIX A, RICHLAND OPERATION OFFICE SURVEILLANCE REPORT S-11-SED-PRC-006
SUMMARY OF CONTRACTOR'S FACTUAL ACCURACY ANALYSIS AND RL RESPONSE
[DATE]

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F01: CHPRC failed to apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.	CHPRC claims the Finding is only partially accurate. CHPRC admits that it is factually accurate that it did not receive "final approvals" from WDOH prior to commencing construction activities on the potable water system. CHPRC states: " . . . CRD M 231.1-1A, Chg 2 (Supp Rev 1) has no requirements directly pertaining to Safe Drinking Water Act (WDOH) approval requirements for public water systems." CHPRC asserts that is should be excused from complying with WDOH permitting regulation found at WAC Chapter 246-290 and its contractual obligation to the federal government because it disclosed to WDOH and DOE project management that it was proceeding in such a fashion and had permission of those parties to do so. CHPRC asserts that it self-identified, reported and corrected any violations of State regulations that occurred. In apparent support of this proposition, CHPRC offers that it ultimately obtained all required approvals and permits for the new drinking water system from WDOH. CHPRC asserts that it self-discovered that it had initiated construction without first obtaining all required approvals from WDOH, and that upon said discovery, it stopped all work on the potable water system components on May 18, 2010, and did not resume work until obtaining all required permits and approvals. CHPRC asks that Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness be combined.	CHPRC's request to modify Finding F01 is denied. While CHPRC has as part of its corrective action process formally repudiated the practice of "proceeding at risk," that is, initiating construction activities without first obtaining all permits required by State and federal law, it now raises this very practice as a defense in the instant matter. CHPRC apparently ignores the fact that neither the WDOH, nor the federal project staff has authority to grant immunity from complying with applicable law. Furthermore, even if compliance with applicable law could be excused, CHPRC was expressly bound by its obligations in its contract with the federal government to comply with the requirements of WAC Chapter 246-290. DOE acknowledges, and it is memorialized in the Surveillance Report that CHPRC self-identified and reported its failure to submit a project report to WDOH and obtain that agency's approval prior to commencing construction of the potable water system. However, CHPRC assertion that it self-discovered and reported all violations suggest that it still fails to acknowledge that it failed to obtain the required construction permit from WDOH until well after it had resumed construction activities. This is a separate and distinct violation from that of having failed to obtain project report approval. CHPRC's assertion that it stopped all construction activities on the potable water system on May 18, 2010 and did not resume those activities until it obtained all required approvals and permits is completely inaccurate. Central to this assertion appears to be the notion that the cross-site raw water delivery line and 750,000 gallon water storage tank constructed by the 100K IUUP Project were not part of the potable water system. This is a notion that has been rejected by the State and CHPRC's own legal counsel (see Surveillance Report Exhibit 28, and 2006 letter from WDOH to DOE River Corridor Project). The fact that off-site construction activities were continuing on the skid mounted water treatment system, and on-site construction activities were continuing on the raw water delivery system and tank are clearly documented in the Surveillance Report and its Exhibits. *See* Exhibit 23, et al.

		CHPRC's request to consolidate Findings 1, 2, 3, 4, 5, 9, 10, and 13 is rejected. Each of the Findings document separate and distinct violations of contractual or other obligations. Combining the Findings could lead to a failure to adequately evaluate and address each deficiency during the corrective action process.

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F02: CHPRC failed to apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F03: Upon discovery of its failure to meet environmental regulatory		

requirements, CHPRC failed to recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F04: After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and did not accurately categorize the event.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F05:		

CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it failed to include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F06: CHPRC proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment Facility, as designed, did not comply with applicable contract standards, and was otherwise defective.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-F07: The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F08: The CHPRC 100K IUUP did not follow DOE, CHPRC and 100-K procedures during the design review process.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F09: The CHPRC 100K IUUP did not follow DOE and CHPRC procedures during the		

permitting process.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F10: The CHPRC 100K IUUP installed water distribution system piping that did not meet contractual requirements previous to applying for and receiving approved exemptions and equivalencies from RL.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F11: The CHPRC proceeded in the construction of the Potable Water Treatment Facility structure prior to the review and approval of the design by a qualified FPE /DFM.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F12: CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.	**CHPRC disagrees that construction proceeded without identifying and resolving all appropriate USQs.** Basis (Page 45): Issue 1: "This Team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review." CHPRC asserts that all work was appropriately evaluated under the USQ process.	CHPRC's request to delete Finding F-12 is denied. CHPRC was unable to provide the USQ review which was required. Therefore Issues # 1, 2, and 3 remain valid, as noted below.
	Issue 2: "Can the new system provide excessive water, such that any leaked water could enter the K West Basin and cause an overflow?" CHPRC asserts that changes associated with the fire water system flow capability cannot create the postulated event.	CHPRC has re-analyzed the water leakage rate in report DD-50551, which concludes that maximum credible water flow is 6,693 gallons per minute – an increase of 4,400 percent. This is a discernable increase and should have received a USQ Evaluation.
	Issue 3: "Further, the CHPRC nuclear safety staff stated that no USQ screenings or evaluations address these issues." CHPRC agrees that USQ determinations or screenings were not performed for the Issues identified in Issue 2, but asserts that no such USQ screening or determination was required because the scenario postulated by RL was not judged to be possible because of the topography.	While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation.
	Issue 4: "Since being informed of the issue, CHPRC has not provided evidence of entering the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203(g)." CHPRC agrees that the potential inadequacy of safety analysis (PISA) process was not entered, but CHPRC asserts that entry into the PISA process was not required, in this case, as allowed for by the RL-approved PRC-PRO-NS-062, Unreviewed Safety Question Process, since the scenario was not judged to be possible because of the topography.	While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation. Further, this judgment was not developed until after RL issued the draft Surveillance.
	Basis (Page 46): The USQ (0025-2011, Rev. 0) was completed for several DCN's that had been issued during installation of the water system. Consistent with PRC-PRO-NS-062, initially these changes were exempt from the USQ process. Upon completion of the installation a document review of all the DCNs was performed and captured in DD-48931. As stated above both the document and USQ was provided to RL. RL stated they were not sure that the USQ really specifically addressed the change;	The issue is one of timing – USQ-0025-2011 was done against Revision 0 of DD-47929 was approved on 12/27/2010. Yet, the USQ screen which relied on this calculation was completed on 10/20/2010. Further, DD-47929 Revision 0 actually has four dates: Originated 12/27/2010, Checked 10/13/2010, Approved 12/27/2010, and the last page has a notation for Revision 0 of 12/28/2010. This discrepancy in dating means that RL cannot determine what issues actually received the USQ

	subsequently the USQ was revised to Revision 1 and provides further clarification of the review. Basis (page 47): The actual calculation in question DD-47929 was approved on 10/11/2010. The USQ screen on this calculation was completed on 10/20/2010. The ECR for the calculation was not issued until two months later on 12/28/2010. The USQ screener reviewed the calculation on the release date and signed the form as required by the process. In addition, there is no basis for the footnote discussion. **PROPOSED FINDING** None. Delete this finding.	Evaluation. The footnote discussion is based on the timeline of the project, the Stop Work order and its results, and the date of USQ 0025-2011. The footnote discussion is factual and valid. Based upon the above, this request is denied.

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F13: CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F14: CHPRC issued excavation permits for 100K IUUP		

construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to completion of cultural resources reviews.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F15: The CHPRC does not have an active Memorandum of Understanding (MOU) with the HFMO which has resulted in confusion of the authority, responsibilities, and duties of the HFM.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F16: CHPRC had not ensured a complete Lockout/Tagout (LOTO) program for		

the 100-K Potable Water Treatment Facility construction site. CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate briefings.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-O01: CHPRC's central environmental management organization failed to respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-O02: Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-O03: CHPRC's Project Review Board process failed to evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-		

Contractor Self-Assessment.		

Brown, Walter R

From: West, Dale
Sent: Monday, September 12, 2011 10:29 AM
To: Brown, Walter R
Subject: FW: 100K Surveillance Finalization
Attachments: SURVEILLNCE REPORT NUMBER S-11-SED-PRC-006 West.doc; Accuracy Review, F08 revision 8-23-11 dcw.doc; Accuracy Review, F06 revision 8-23-11 dcw.doc

Sensitivity: Confidential

From: West, Dale
Sent: Wednesday, September 07, 2011 1:01 PM
To: Jackson, Dale
Cc: Brown, Walter (CONTR); Morgan, Gregory; West, Dale
Subject: RE: 100K Surveillance Finalization
Sensitivity: Confidential

Dale,

Attached is my response to CHPRC's second accuracy review. I have responded to findings 6, 8, 9, 10, 11, and 15. I have also included revisions to Finding 6 and Finding 8 as identified by CHPRC's first round accuracy review. Please review my comments and edit as needed.

Thanks,

Dale

From: Jackson, Dale
Sent: Tuesday, September 06, 2011 4:54 PM
To: West, Dale; Morgan, Gregory; Brown, Walter (CONTR)
Subject: 100K Surveillance Finalization
Importance: High
Sensitivity: Confidential

Gentlemen:

Here are the 100K Surveillance documents I promised to send. I propose we try to get together for an hour sometime Thursday or late tomorrow afternoon to make sure we all agree on how to proceed. Let me know your availability.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

2011 Integrated Safety Management Workshop

September 12-15, 2011 Kennewick, WA

Learn more about it at: http://www.ism2011.com/

Brown, Walter R

From: Morgan, Gregory
Sent: Friday, September 16, 2011 2:41 PM
To: Brown, Walter R; Jackson, Dale E; West, Dale C
Subject: FW: 100K Surveillance Finalization
Attachments: 100K Surveillance Report Appendix A.docx; USQD 0225-2011

Importance: High
Sensitivity: Confidential

Walter:

The draft response to the Factual Accuracy Review says regarding Finding 12 to "See/Add Greg Morgan response". Attached is an update of my response on Finding 12. I have also copied it below in red:

(b)(5)

APPENDIX A, RICHLAND OPERATION OFFICE SURVEILLANCE REPORT S-11-SED-PRC-006
SUMMARY OF CONTRACTOR'S FACTUAL ACCURACY ANALYSIS AND RL RESPONSE
[DATE]

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-C01: In order to meet project schedules, CHPRC engaged in a pattern of conduct that failed to recognize, or otherwise failed to implement contractual requirements, failed to follow established procedures, and failed to meet statutory obligations.	CHPRC agrees that it did not plan and execute the 100K Water Treatment Facility and the Fire and Potable Water Distribution System project in full compliance with contractual, procedural, and environmental/ regulatory requirements. CHPRC disagrees that there is or was a pattern of conduct or intentional or knowing disregard for compliance with contractual, procedural and environmental requirements. CHPRC disagrees that the project design failed to meet contractual or other obligations. CHPRC disagrees that it made unilateral decisions to proceed at risk. CHPRC disagrees that its corrective action system failed to recognize and address the key planning and execution deficiencies associated with the project. CHPRC states that in many instances it agrees with the facts stated in the report, but that there are two kinds of omissions in the draft report. First, many relevant and important facts are missing and leave the incorrect and unwarranted impression that CHPRC took actions without the awareness of either the Department of Energy project managers and the Washington Department of Health. Second, the Concern set forth in the report ignores the proper assessment of facts in light of CERCLA requirements. A complete evaluation of the facts leads to the conclusion that no environmental laws or regulations were violated. Rather, the more appropriate conclusion is that CHPRC only failed to recognize and plan the project in light of CERCLA requirements. CHPRC states that: " . . . [T]here is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes in order to trigger the regulatory preemption authority of CERCLA Section 121(e)(1). CHPRC asserts that this "surveillance report" departs from traditional standards for conducting audits and assessments that normally focus on evaluating compliance with standards and requirements, while they avoid personalization, innuendo and implication. We believe this Report fails	CHPRC's request to modify Finding C01 is denied. DOE acknowledge in footnote 1 of Surveillance Report S-11-SED-PRC-006 (Surveillance Report) that this project might have been entitled to the regulatory permitting exemptions of CERCLA § 121(e)(1), but that apparently the steps necessary to secure such entitlement were not all taken. CHPRC's asserts that: " . . . there is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes . . . . " However, the very OSWER Directive #9355.3-22 cited by CHPRC in it comments contradicts that assertion. More specifically, the OSWER Directive states: "The decision to provide an alternative water supply need to be documented in the appropriate decision document, such as a Record of Decision (ROD) or Explanation of Significant Differences (ESD) for remedial projects or an Action Memorandum for removal projects." Other facts confirm that CHPRC was not seeking the exemptions offered by CERCLA § 121. CHPRC's EASF checklist states this Project is not a CERCLA project and requires NEPA documentation. The Project's conduct of ultimately applying for multiple approvals from WDOH does not suggest it was proceeding pursuant to CERCLA. The Project produced no evidence that it evaluated any ARARs that would be applicable and documented findings in a CERCAL decision document. DOE acknowledges that CHPRC is entitled to its opinion regarding the methods and practices employed in conducting the Surveillance, but respectfully disagrees with CHPRC's conclusions. With regard to CHPRC's comments on pattern of conduct, failure recognize of extent of condition, and failure to comply with contractual obligations, DOE believes the multiple and varied failures to meet regulator or contractual conditions documented in the Surveillance Report are accurate and speak for themselves. DOE points out however that the terms "intentional," "reckless" and "knowing disregard" as used by CHPRC in its Factual Accuracy Analysis are terms invented by CHPRC

	that general standard. CHPRC points out that the potable water system project received eventual approval by WDOH that no corrective reconstruction was necessary, and the system was not used to deliver water until final WDOH approval was received. Consistent with its statements to CHPRC, WDOH has not ordered any corrective actions, nor has it taken any enforcement action against DOE or CHPRC. Proceeding with construction of the fire protection system before permits were obtained from the WDOH did not violate any environmental laws or regulations.	as they do not appear in the Draft or Final Surveillance Report.

APPENDIX A, RICHLAND OPERATION OFFICE SURVEILLANCE REPORT S-11-SED-PRC-006
SUMMARY OF CONTRACTOR'S FACTUAL ACCURACY ANALYSIS AND RL RESPONSE
[DATE]

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F01: CHPRC failed to apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.	CHPRC claims the Finding is only partially accurate. CHPRC admits that it is factually accurate that it did not receive "final approvals" from WDOH prior to commencing construction activities on the potable water system. CHPRC states: " . . . CRD M 231.1-1A, Chg 2 (Supp Rev 1) has no requirements directly pertaining to Safe Drinking Water Act (WDOH) approval requirements for public water systems." CHPRC asserts that is should be excused from complying with WDOH permitting regulation found at WAC Chapter 246-290 and its contractual obligation to the federal government because it disclosed to WDOH and DOE project management that it was proceeding in such a fashion and had permission of those parties to do so. CHPRC asserts that it self-identified, reported and corrected any violations of State regulations that occurred. In apparent support of this proposition, CHPRC offers that it ultimately obtained all required approvals and permits for the new drinking water system from WDOH. CHPRC asserts that it self-discovered that it had initiated construction without first obtaining all required approvals from WDOH, and that upon said discovery, it stopped all work on the potable water system components on May 18, 2010, and did not resume work until obtaining all required permits and approvals. CHPRC asks that Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness be combined.	CHPRC's request to modify Finding F01 is denied. While CHPRC has as part of its corrective action process formally repudiated the practice of "proceeding at risk," that is, initiating construction activities without first obtaining all permits required by State and federal law, it now raises this very practice as a defense in the instant matter. CHPRC apparently ignores the fact that neither the WDOH, nor the federal project staff has authority to grant immunity from complying with applicable law. Furthermore, even if compliance with applicable law could be excused, CHPRC was expressly bound by its obligations in its contract with the federal government to comply with the requirements of WAC Chapter 246-290. DOE acknowledges, and it is memorialized in the Surveillance Report that CHPRC self-identified and reported its failure to submit a project report to WDOH and obtain that agency's approval prior to commencing construction of the potable water system. However, CHPRC assertion that it self-discovered and reported all violations suggest that it still fails to acknowledge that it failed to obtain the required construction permit from WDOH until well after it had resumed construction activities. This is a separate and distinct violation from that of having failed to obtain project report approval. CHPRC's assertion that it stopped all construction activities on the potable water system on May 18, 2010 and did not resume those activities until it obtained all required approvals and permits is completely inaccurate. Central to this assertion appears to be the notion that the cross-site raw water delivery line and 750,000 gallon water storage tank constructed by the 100K IUUP Project were not part of the potable water system. This is a notion that has been rejected by the State and CHPRC's own legal counsel (see Surveillance Report Exhibit 28, and 2006 letter from WDOH to DOE River Corridor Project). The fact that off-site construction activities were continuing on the skid mounted water treatment system, and on-site construction activities were continuing on the raw water delivery system and tank are clearly documented in the Surveillance Report and its Exhibits. *See* Exhibit 23, et al.

		CHPRC's request to consolidate Findings 1, 2, 3, 4, 5, 9, 10, and 13 is rejected. Each of the Findings document separate and distinct violations of contractual or other obligations. Combining the Findings could lead to a failure to adequately evaluate and address each deficiency during the corrective action process.

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F02: CHPRC failed to apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F03: Upon discovery of its failure to meet environmental regulatory		

requirements. CHPRC failed to recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F04: After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and did not accurately categorize the event.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F05:		

CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it failed to include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F06: CHPRC proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment Facility, as designed, did not comply with applicable contract standards, and was otherwise defective.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-F07: The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F08: The CHPRC 100K IUUP did not follow DOE, CHPRC and 100-K procedures during the design review process.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F09: The CHPRC 100K IUUP did not follow DOE and CHPRC procedures during the		

permitting process.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F10: The CHPRC 100K IUUP installed water distribution system piping that did not meet contractual requirements previous to applying for and receiving approved exemptions and equivalencies from RL.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F11: The CHPRC proceeded in the construction of the Potable Water Treatment Facility structure prior to the review and approval of the design by a qualified FPE /DFM.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F12: CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.	**CHPRC disagrees that construction proceeded without identifying and resolving all appropriate USQs.** Basis (Page 45): Issue 1: "This Team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review." CHPRC asserts that all work was appropriately evaluated under the USQ process. Issue 2: "Can the new system provide excessive water, such that any leaked water could enter the K West Basin and cause an overflow?" CHPRC asserts that changes associated with the fire water system flow capability cannot create the postulated event. Issue 3: "Further, the CHPRC nuclear safety staff stated that no USQ screenings or evaluations address these issues." CHPRC agrees that USQ determinations or screenings were not performed for the Issues identified in Issue 2, but asserts that no such USQ screening or determination was required because the scenario postulated by RL was not judged to be possible because of the topography. Issue 4: "Since being informed of the issue, CHPRC has not provided evidence of entering the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203(g)." CHPRC agrees that the potential inadequacy of safety analysis (PISA) process was not entered, but CHPRC asserts that entry into the PISA process was not required, in this case, as allowed for by the RL-approved PRC-PRO-NS-062, Unreviewed Safety Question Process, since the scenario was not judged to be possible because of the topography. Basis (Page 46): The USQ (0025-2011, Rev. 0) was completed for several DCN's that had been issued during installation of the water system. Consistent with PRC-PRO-NS-062, initially these changes were exempt from the USQ process. Upon completion of the installation a document review of all the DCNs was performed and captured in DD-48931. As stated above both the document and USQ was provided to RL. RL stated	CHPRC's request to delete Finding F-12 is denied. CHPRC was unable to provide the USQ review which was required. On September 13, 2011, CHPRC declared positive USQ 0225-2011 for this issue. Therefore Issues # 1, 2, and 3 remain valid, as noted below. CHPRC has re-analyzed the water leakage rate in report DD-50551, which concludes that maximum credible water flow is 6,693 gallons per minute – an increase of 446 percent. This is a discernable increase and should have received a USQ Evaluation. While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation. While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner and near the west wall of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation. Further, this judgment was not developed until after RL issued the draft Surveillance. On September 13, 2011, CHPRC declared positive USQ 0225-2011 for this issue. CHPRC did not enter this into the PISA process until after they received this draft Surveillance for factual accuracy review. The issue regarding adequacy of USQ review is one of timing – USQ-0025-2011 was done against Revision 0 of DD-47929 was approved on 12/27/2010. Yet, the USQ screen which relied on this calculation was completed on 10/20/2010. Further, DD-47929 Revision 0 actually has four dates: Originated 12/27/2010, Checked 10/13/2010, Approved 12/27/2010, and the last page has a notation for Revision 0 of 12/28/2010.

	they were not sure that the USQ really specifically addressed the change; subsequently the USQ was revised to Revision 1 and provides further clarification of the review. Basis (page 47): The actual calculation in question DD-47929 was approved on 10/11/2010. The USQ screen on this calculation was completed on 10/20/2010. The ECR for the calculation was not issued until two months later on 12/28/2010. The USQ screener reviewed the calculation on the release date and signed the form as required by the process. In addition, there is no basis for the footnote discussion. **PROPOSED FINDING** None. Delete this finding.	This discrepancy in dating means that RL cannot determine what issues actually received the USQ Evaluation. The footnote discussion is based on the timeline of the project, the Stop Work order and its results, and the date of USQ 0025-2011. The footnote discussion is factual and valid. Based upon the above, this request is denied.

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F13: CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F14: CHPRC issued excavation permits for		

100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to completion of cultural resources reviews.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F15: The CHPRC does not have an active Memorandum of Understanding (MOU) with the HFMO which has resulted in confusion of the authority, responsibilities, and duties of the HFM.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-F16: CHPRC had not ensured a complete Lockout/Tagout		

(LOTO) program for the 100-K Potable Water Treatment Facility construction site. CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate briefings.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-O01: CHPRC's central environmental management organization failed to respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-O02: Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION
S-11-SED-PRC-006-O03: CHPRC's Project Review Board process failed to evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.		

FINDING STATEMENT	SUMMARY OF CHPRC COMMENTS	RL RESPONSE AND FINAL DETERMINATION

S-11-SED-PRC-006-Contractor Self-Assessment.		

Brown, Walter R

From: Omberg Carro, Susan K
Sent: Tuesday, October 18, 2011 11:07 AM
To: Brown, Walter R
Subject: FW: 100K Water Supply Line As-Built Drawings

FYI

From: Omberg Carro, Susan K
Sent: Tuesday, October 18, 2011 11:06 AM
To: Deleyos, Robert E
Cc: Johnson, Ben; Wajeeh, Usama E; Hamilton, Dennis W; Moldovan, Adam N; Dale, John S; Raymond, Richard E; Koch, Michael R
Subject: 100K Water Supply Line As-Built Drawings

Bing,

In the Monday STP Engineering meeting, the as-built drawings for the 100K fire water supply line have been a subject of discussion for several weeks now. AREVA/Meier/Hughes have been tasked to design the line reroute for the northern leg of the 100K loop to accommodate the change in location for the Modified KW Basin Annex. In support of that effort, Meier has been doing some preliminary survey work on the line. In the process of that work, they have identified several issues with the unapproved as-built drawings, including discrepancies in above-ground features of over 40 ft, and the lack of any survey marker on the drawings. In short, it does not appear that the as-built drawings actually reflect the installation.

If you would like to discuss these issues with the engineers involved, that would be easy to facilitate. They have preliminary red-lines showing the magnitude of the discrepancies, which is sufficiently great as to present issues with their ability to stamp any design for the line reroute if the as-built drawings are not corrected.

If fire protection has not yet approved the as-built drawings as required by HNF-36174, I would suggest that approval be (b)(5) If fire protection has approved the as-built drawings, I would suggest that we (b)(5)

If you want to discuss this issue, feel free to give me a call. Ben was also at the engineering meeting yesterday afternoon.

Thank you,

Susan Omberg Carro
FIRE PROTECTION ENGINEERING
DEPUTY FIRE MARSHAL

Brown, Walter R

From: Jackson, Dale
Sent: Wednesday, October 19, 2011 2:05 PM
To: Gordon, Roger M
Cc: West, Dale C; Brown, Walter R; Morgan, Gregory Z
Subject: RE: Review of the 100K IUUP Surveillance Report

Thanks. We'll be there.

From: Gordon, Roger
Sent: Wednesday, October 19, 2011 1:52 PM
To: Jackson, Dale
Subject: RE: Review of the 100K IUUP Surveillance Report

How about 3 pm, my office then.

Roger Gordon
Director,
Operations Oversight Division
(509) 372-2139
(509) 521-5279 (cell)

From: Jackson, Dale
Sent: Wednesday, October 19, 2011 12:35 PM
To: Gordon, Roger
Subject: RE: Review of the 100K IUUP Surveillance Report

Thanks Roger. I really appreciate the time and effort you've put in to this and look forward to hearing what you suggest. I'm available any time after 2 pm, and can we meet in your office? I'd like to bring Dale West and Russ Brown along so they can hear what you have to say first hand if that's o.k. Let me know what time works for you.

Thanks again,
Dale

From: Gordon, Roger
Sent: Wednesday, October 19, 2011 9:51 AM
To: Jackson, Dale
Cc: Weil, Stephen
Subject: RE: Review of the 100K IUUP Surveillance Report

Yes, I am available later this afternoon if you would like to sit down and discuss.

And just to clarify, I will give you my thoughts and recommendations. What you do with them is totally your call. I don't want to take away from all your work cause you've built quite an argument and it's not my intent to dummy that down.

Thanks

Roger Gordon
Director,
Operations Oversight Division
(509) 372-2139
(509) 521-5279 (cell)

From: Jackson, Dale
Sent: Tuesday, October 18, 2011 3:08 PM
To: Gordon, Roger
Cc: Weil, Stephen
Subject: Review of the 100K IUUP Surveillance Report

Roger:

Steve Weil informs me that he thinks you may have completed your review of the 100K IUUP Surveillance Report. What is your availability to meet and discuss your recommendations with us?

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

2011 Integrated Safety Management Workshop
September 12-15, 2011 Kennewick, WA
Learn more about it at: http://www.ism2011.com/

Brown, Walter R

From: Jackson, Dale E
Sent: Thursday, December 08, 2011 4:27 PM
To: Brown, Walter R; Morgan, Gregory Z; West, Dale C
Subject: 100K Surveillance Report

Gents:

Mr. Shoop signed the 100K Surveillance transmittal package this afternoon, and Amy delivered it to correspondence control for mailing. It should go out this afternoon or tomorrow morning (but don't know since it is a contractor's day off). Thanks for everyone's efforts, and now the real work will begin re. corrective action.

Regards,
Dale Jackson

Brown, Walter R

Subject:	100K IUUP Surveillance RCA Report Review
Location:	Fed. Bldg., Rm 554
Start:	Tue 2/14/2012 10:00 AM
End:	Tue 2/14/2012 1:00 PM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Jackson, Dale E
Required Attendees:	Morgan, Gregory Z; West, Dale C; Brown, Walter R

When: Tuesday, February 14, 2012 10:00 AM-1:00 PM (GMT-08:00) Pacific Time (US & Canada).
Where: Fed. Bldg., Rm 554

Note: The GMT offset above does not reflect daylight saving time adjustments.

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RL-F-1325.6 (02/98)

United States Government **Department of Energy**

memorandum

Richland Operations Office

DATE: October 31, 2011

REPLY TO ATTN OF: EMD:DEJ

SUBJECT: 100K Infrastructure and Utilities Upgrade Project Surveillance, S-11-EMD-PRC-001

TO: D. S. Shoop, A7-50

The 100K Area Infrastructure and Utilities Upgrade Project (Project), PSB RL-0041b, was the subject of a surveillance jointly performed by the Environmental Management Division and the Safety Engineering Division of the Richland Operations Office during fiscal year 2011. The Project consisted on three sub-projects which respectively addressed installation of new fire and potable water systems (Performance Objective 5a), relocation of an electrical substation (Performance Objective 5b), and upgrading the HVAC system for the KW Basin (Performance Objective 5c). The Contract provides for award of Incremental Fee for the successful completion of each sub-project, and an additional Incremental Fee in the event all three sub-projects are timely completed (Performance Objective 5d). *See* Contract No. DE AC06-08RL14788, Section J, Attachment J.4, p. 75-76.

Based upon the results of the surveillance, several recommendations were made, including withholding all Incremental Fee available to the Project. While the surveillance and resulting report focused mainly on the activities that occurred under Performance Objective 5a, as explained below, several of the Findings and Observations that were made are applicable across all of the sub-projects and are thought to justify the recommendation to withhold all Incremental Fee.

S-11-EMD-PRC-001-F04: CHPRC identified environmental compliance requirements (NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan and Field Execution Schedule. *Comments: The PEP and FES applied to all three sub-projects. Even if the PEP had been approved (which it was not), it did not sufficiently address environmental regulatory compliance issues in a manner that would satisfy Contract CRD requirements.*

S-11-EMD-PRC-001-F12: CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan. *Comments: The required PEP applied to the activities conducted under all three sub-projects and is consequently a departure from CRD requirements applicable to each sub-project.*

S-11-EMD-PRC-001-F14: The CHPRC does not have an active Memorandum of Understanding with the Hanford Fire Marshal's Office which has resulted in confusion of the authority, responsibilities, and duties of the Hanford Fire Marshal. *Comments: While arguably less important to the electrical substation relocation and HVAC upgrade sub-*

projects, the absence of the MOU general adversely affects safety and is a contractual requirement applicable to all sub-project activities.

S-11-EMD-PRC-001-F15: CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate Lockout/Tagout (LOTO) notification and briefings. *Comments: CHPRC's internal audit of the HVAC upgrade and electrical substation relocation sub-projects (performed after completion of RL's surveillance) confirmed LOTO insufficiency across all three sub-projects. See copy of CHPRC's self assessment attached hereto.*

S-11-EMD-PRC-001-O02: Although requested by a member of the Project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities. *Comments: The request for an independent QA review was global to all three sub-projects and was denied for all three. Had the independent QA review been performed, it is reasonable to expect that some if not all of the deficiencies identified during the RL surveillance would have been self-discovered by CHPRC and prevented. Furthermore, had federal "Reliability Standards for Bulk Electrical Systems" compliance obligations been recognized, reported significant delay of the electrical substation relocation sub-project might have been prevented.*

S-11-EMD-PRC-001-O03: CHPRC's Project Review Board (PRB) process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities. *The PRB's review made little or no inquiry with respect to environmental, safety, and other regulatory compliance responsibilities. The PRB's review applied to the entire Project (i.e., all three sub-projects).*

While CHPRC arguably met the performance deadlines for Performance Objectives 5a through 5d, it did not do so without the significant departures from contractual and other requirements discussed above. Under these circumstances, it is not believed that Incremental Fee is merited for any of the Performance Objectives identified herein.

Dale E. Jackson
Surveillance Team Leader
S-11-EMD-PRC-001

Attachment:

CHPRC Self Assessment, SHS&Q-2011-WSA-10713

cc w/encl:
R. J. Corey, A5-14
S. R. Weil, A5-15

Department of Energy
Richland Operations Office
Surveillance Report

Division: Safety and Engineering Division (SED)

Surveillant: **Dale West, RL Fire Protection Engineer**
Dale Jackson,
Cliff Ashley,
Jack Poe,
Dave Evans, PAI Corp, Team Member [dte rough draft 1/11/11]

Surveillance Number: S-11-SED-PRC (b)(5)

Date Completed: (b)(5)

Contractor: CH2M HILL PLATEAU REMEDIATION COMPANY (CHPRC)

Facility: 100K Water Treatment Facility

Title: Review of 100K Water Treatment Facility Project

Guide: FPS12.2

Surveillance Scope:

The objective of this surveillance was to evaluate the contractor's performance in complying with contractual requirements, state WAC requirements, DOE requirements, applicable codes and standards, and their own policies and procedures.

Surveillance Summary:

This surveillance reveals that (b)(5)
Multiple examples (b)(5)

The surveillance activities resulted in the identification of the (b)(5) findings and (b)(5) observations.

- **S-11-SED-PRC-XXX-F01** (b)(5)
  (b)(5)

- **S-11-SED-PRC-XXX-F02** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F03** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F04** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F05** CHPRC (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F06** CHPRC (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F07** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F08** (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-F09** CHPRC (b)(5) (b)(5)
- **S-11-SED-PRC-XXX-O01** CHPRC (b)(5) (b)(5)

Surveillance Results:

Finding: S-11-SED-PRC-XXX -F01

(b)(5)

Requirement(s):

1. 100 K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program, Section 1.1 states that, "this procedure applies to 100K Area facilities, including new project design and construction, modification, alteration, and demolition of 100K Area facilities. It also applies to operations performed within the 100K Area by the CHPRC D&D Project and other organizations."
   Section 3.14 states, "all construction, including modification of existing facilities, shall be in accordance with the requirements of MSC RD 9717, DOE-STD-1066, CRD 420.1B, HNF-36174, and applicable NFPA Codes and Standards."

2. CH2M Hill Requirements Applicability Matrix states, "the following Requirements Applicability Matrix Reports (RAM) are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, etc) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The RAM lists MSC-RD-9118, Fire Protection Design/Operations Criteria as satisfying the categories of 29 CFR 1910, Occupational Safety and Health Standards, and CRD O 420.1B Supplemented, Rev 4, Facility Safety. The RAM lists MSC-RD-10606, Fire Protection Program Requirements as satisfying the categories of 29 CFR 1910, Occupational Safety and Health Standards, CRD M 231.1-1A, Environmental, Safety, and Health Reporting Manual, and CRD O 420.1B Supplemented, Rev 4, Facility Safety.

3. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.1 states, "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits."

4. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.4 states, "Hanford Fire Marshal (HFM) – The HFM, who shall be a member of the HFD, shall have the authority to develop, administer and enforce the Fire Prevention Program for the MSC as directed by SCRD O 420.1B, Rev. 4, Facility Safety, and by RL approval of the HFM's Charter, which establishes the authority, responsibilities and duties of the HFM. The HFM's authority shall extend to all work performed under or on behalf of MSC. RL will support the HFM in enforcement of the codes and standards and execution of the HFM's duties as described below. NOTE: Whenever the title Fire Marshal is used, it is also intended to mean the Fire Chief or a representative designated as a Deputy Fire Marshal."
   Section 2.4.2 states, "To support the development, administration and enforcement of the Fire Prevention Program the duties of the HFM shall include but not be limited to: Review and approval of new fire protection system designs and modifications/ upgrades to existing fire protection systems per MSC-PRO-8635, Review and Approval of Technical Documents."

5. DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and

hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

Discussion:

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F02

(b)(5)

Requirement(s):

1. 100 K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program, Section 3.18 states that, "Several actions/activities require the development and approval of a HFM Permit prior to initiation of the action/activity. These actions/activities include:
   - facility construction/demolition
   - placement of relocatable structures
   - transport and use of explosives
   - use, handling, or storage of hazardous materials in excess of defined limits
   - operation or storage of fossil-fueled vehicles inside any building not designed for such use, except as authorized by the facility FHA
   - new or modified facility occupancy
   - outdoor burning
   - placement and use of electric heaters in excess of 1500 watts
   - placement and use of fuel-fired heaters
   - placement and use of portable generators
   - blockage of roads
   - facility egress modification
   - utility outages
   - fire protection system (including fire hydrant) installation or deactivation'

2. CH2M Hill Requirements Applicability Matrix states, "the following RAM Reports are compiled in accordance with PRC-PRO-MS-40117, Requirements Management Process, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives,...) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The

applicability matrix lists MSC-RD-8589, Hanford Fire Marshal Permits under both 10 CFR 830 Nuclear Safety, and CRD O 420.1B Supplemented, rev 4, Facility Safety.

3. MSC-RD-9717, Fire Prevention for Construction/Occupancy/Demolition Activities, Section 2.1.2 states, "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, Hanford Fire Marshal Permits, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD, (initiated through a Hanford Fire Department Contractor Pre-Incident Plan Request Form, (A-6003-387) are submitted to the HFM prior to engaging in activities or processes governed by the forms (Ref: MSC-PRO-24889, Project Initiation and Execution, Appendix A Section 8.2)."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX-F03

(b)(5)

Requirement(s):

1. 100 K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program, Section 1.1 states that, "this procedure applies to 100K Area facilities, including new

project design and construction, modification, alteration, and demolition of 100K Area facilities. It also applies to operations performed within the 100K Area by the CHPRC D&D Project and other organizations." Section 3.6 states, "if warranted with sufficient technical justification, then apply for and process an exemption, deviation, or equivalency to fire protection requirements in accordance with MSC-RD-9118. (This step also applies to modification and cancellation of existing exemptions, deviations, and equivalencies, when needed.)"

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F04

(b)(5)

Requirement(s):

1. Same Requirements References listed under F01.
2. MSC-RD-9118
3. MSC-RD-9717

Discussion:

(b)(5)

(b)(5)

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F05

CHPRC (b)(5)
(b)(5)

Requirement:

DOE O 414.1C Quality Assurance, Section 3.g. paragraph (1) states, "Procure items and services that meet established requirements and perform as specified."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F06

CHPRC (b)(5)
(b)(5)

Requirement(s):

Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 4.9. paragraph B. states in part, "The Contractor will develop and maintain a work site Job Safety Analysis in accordance with PRC-PRO-SH-40078."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F07

CHPRC (b)(5)

(b)(5)

Requirement(s):

DOE 0336 Hanford Site Lockout/Tagout, Section 5.13, states in part, "Designate a qualified member(s) of the Controlling Organization (CO) to be the lockout/tagout point of contact for the outside contractor for facilities that have a physical interface with an existing facility. 2. Determine which of the following methods of lockout/tagout is to be used: Use of Authorized Worker (AW) locks and tags alone when all of the eight criteria listed below are met."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F08

(b)(5)

Requirement(s):

Contract #36534-31 ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 6.2, paragraph 5. states in part, "Contractor shall maintain an up to date set of as-built design drawings and specifications.at the jobsite."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-SED-PRC-XXX -F09

(b)(5)

Requirement(s):

Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1, paragraph I. states in part, "Prior to start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RL-92-36 Rev. 1, and certification that all training is current."

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-SED-PRC-XXX -O01

(b)(5)

Discussion:

(b)(5)

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Contractor Self-Assessment: The CHPRC did not perform a formal self-assessment of the issues at the 100K Water Treatment Facility Project that eventually resulted in the CHPRC Senior Management issuing a Stop Work. (b)(5)

(b)(5)

Contractor Self-Assessment Adequate: **YES [ ]** **NO [x]**

Management Debriefed:

CHPRC, (b)(5)
CHPRC (b)(5)

Brown, Walter R

From: Morgan, Gregory
Sent: Monday, October 31, 2011 10:02 AM
To: Jackson, Dale E; West, Dale C; Brown, Walter R
Cc: Weil, Stephen R
Subject: RE: 100 K IUUP Surveillance Report Final Version Enclosed

Sensitivity: Confidential

Dale:

This looks good. Do we need a new "date report completed", on the first page?

Respectfully,

Greg Morgan

From: Jackson, Dale
Sent: Thursday, October 27, 2011 4:47 PM
To: West, Dale; Brown, Walter (CONTR); Morgan, Gregory
Cc: Weil, Stephen
Subject: 100 K IUUP Surveillance Report Final Version Enclosed
Importance: High
Sensitivity: Confidential

Gents:

Please do one last review on the enclosure. I think it is now ready to be briefed to Mr. Corey as it incorporates all edits that we believe are appropriate in light of CHPRC's Factual Accuracy Analysis and ODD's suggestions on format and content. Let me know what you think.

Regards,

Dale Jackson
DOE-RL EMD
(509) 376.8086

Jackson, Dale E

From: Jackson, Dale
Sent: Tuesday, November 01, 2011 2:29 PM
To: Corey, Ray J
Cc: Weil, Stephen R; Frey, Jeffrey A
Subject: OUO - 100K IUUP Surveillance Report Enclosed For Yor Review - OUO
Attachments: S-11-EMD-PRC-001 10282011 without Exhibits.doc; RL Factual Accuracy Analysis Response 10212011.docx

Ray:

Please find enclosed the version of the 100K IUUP Surveillance Report (S-011-EMD-PRC-001) that we believe is ready for concurrence. The enclosed version does not contain the 320 pages of exhibits that are part of the full report, but does contain the index to those exhibits. To get the best, and truly full understanding of CHPRC's performance in the areas of inquiry, a reading of the exhibits is essential. If you would like a set of the exhibits for your review process, let me know and I will arrange to get them to you either in electronic version or hard copy.

The enclosed version incorporates most of the comments offered by Roger Gordon after his review of the Report. While Roger told us that his comments were suggestions only, he was extremely helpful and his suggestions that we were able to incorporate resulted in substantial improvements to the Report content. Generally we toned down or eliminated language in many areas that after our own reflection and consideration of Roger's advice, we found needlessly inflammatory, irrelevant to proof of facts, or otherwise unnecessary to presentation of the issues. Roger also helped with a redraft of the Report's overall Concern statement that resulted in language that was more narrowly focused and generally less accusatory in tone. We also eliminated several paragraphs that were arguably expression of unsupported opinion, and as such really served no useful purpose. The enclosed factual accuracy analysis and RL response document records the substantial changes that were made.

I understand that you will provide copies of the enclosures to others that want to review the Report before it is placed in ESTARS for concurrence to begin. In this regard, I believe reviewing the factual accuracy analysis and response document is very important to fully understanding CHPRC's actions and attitudes. I encourage this document accompany the Report when distributed to others for review. It is marked OUO only because CHPRC made the claim that the information they submitted as their factual accuracy analysis is "business sensitive."

Let me know if you have any questions, and as soon as we have your permission, we will enter the package into ESTARS.

Respectfully,

Dale Jackson
DOE-RL EMD
(509) 376.8086

Department of Energy
Richland Operations Office
Surveillance Report

Divisions: Environmental Management Division (EMD)
Safety and Engineering Division (SED)

Surveillance Team Members:
Dale E. Jackson, RL-EMD, Physical Scientist
Dale C. West, RL-SED, Fire Protection Engineer
Gregory Z. Morgan, RL-SED, Nuclear Safety Engineer
Clifford Ashley, RL-SED, Electrical Safety (Retired)
David T. Evans, PAI Corp (DOE GSSC Contractor), Team Member
Walter R. Brown, CHPRC Environmental QA, Team Member

Surveillance Number: S-11-EMD-PRC-001

Date Field Work Completed: May 2, 2011 **Date Initial Report Completed:** June 25, 2011

Contractor: CH2M HILL Plateau Remediation Company

Facility: 100K Water Treatment Facility and Fire Water Distribution System

Title: Review of the 100K Infrastructure Utilities Upgrade Project

Guides: FPS 12.2, Fire Protection and Prevention
ISM 5.4, Continuous Improvement
OPS 9.9, Lockouts and Tagouts
OPS 9.6, Investigation of Abnormal Events and Occurrence Reporting

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Table of Contents - S-11-EMD-PRC-001

Surveillance Scope: 1

Surveillance Summary: 1

Surveillance Results: 3

Concern: S-11-EMD-PRC-001-C01 3
The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.

Finding: S-11-EMD-PRC-001-F01 4
CHPRC did not apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.

Finding: S-11-EMD-PRC-001-F02 14
CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities.

Finding: S-11-EMD-PRC-001-F03 15
Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.

Finding: S-11-EMD-PRC-001-F04 19
CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).

Finding: S-11-EMD-PRC-001-F05 21
CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.

Finding: S-11-EMD-PRC-001-F06 24
The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

Finding: S-11-EMD-PRC-001-F07 26
The design review process applied to the 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.

Finding: S-11-EMD-PRC-001-F08 32
Construction Permits were not obtained from the Hanford Fire Marshall's Office by the 100K IUUP prior to commencing construction.

Finding: S-11-EMD-PRC-001-F09 34
The CHPRC 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction.

Finding: S-11-EMD-PRC-001-F10 36
The CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer /Deputy Fire Marshal.

Finding: S-11-EMD-PRC-001-F11 37
CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.

Finding: S-11-EMD-PRC-001-F12 40
CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Finding: S-11-EMD-PRC-001-F13 42
CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

Finding: S-11-EMD-PRC-001-F14 44
The CHPRC did not meet contractual requirements requiring the maintenance of an active Memorandum of Understanding between CHPRC and the Hanford Fire Marshal's Office.

Finding: S-11-EMD-PRC-001-F15 45
CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate Lockout/Tagout (LOTO) notification and briefings.

Observation: S-11-EMD-PRC-001-O01 46
CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).

Observation: S-11-EMD-PRC-001-O02 47
Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

Observation: S-11-EMD-PRC-001-O03 48
CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

Observation: S-11-EMD-PRC-001-004 48
After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorize the event.

Contractor Self-Assessment 51

INDEX OF EXHIBITS 52

Surveillance Scope:

The objective of this surveillance was to evaluate the performance of CH2M HILL Plateau Remediation Company (herein after "CHPRC") Infrastructure Utilities Upgrade Project (herein after "100K IUUP" or "Project") fire water and drinking water systems subproject compliance with contractual requirements, State and Federal environmental requirements, Department of Energy (DOE) requirements, other applicable codes and standards, and CHPRC policies and procedures.

Surveillance Summary:

This surveillance reveals that CHPRC did not meeting all requirements applicable to the 100K IUUP activities. Multiple examples of not meeting requirements involving several different disciplines were noted.

The surveillance activities resulted in the identification of one Concern, fifteen Findings, and four Observations.

- **S-11-EMD-PRC-001-C01:** The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.

- **S-11-EMD-PRC-001-F01:** CHPRC did not apply to the Washington State Department of Health for approvals required by the Washington Administrative Code prior to commencing construction of the 100K IUUP Potable Water System.

- **S-11-EMD-PRC-001-F02:** CHPRC did not apply for a categorical exclusion determination pursuant to requirements of the National Environmental Policy Act prior to commencing construction of 100K IUUP facilities.

- **S-11-EMD-PRC-001-F03:** Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.

- **S-11-EMD-PRC-001-F04:** CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan and Field Execution Schedule.

- **S-11-EMD-PRC-001-F05:** CHPRC proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment

Facility, as designed, did not comply with applicable contract standards, and was otherwise defective.

- **S-11-EMD-PRC-001-F06:** The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

- **S-11-EMD-PRC-001-F07:** The CHPRC 100K IUUP did not follow DOE, CHPRC and 100-K procedures during the design review process.

- **S-11-EMD-PRC-001-F08:** The CHPRC 100K IUUP did not follow DOE and CHPRC procedures during the permitting process.

- **S-11-EMD-PRC-001-F09:** The CHPRC 100K IUUP installed water distribution system piping that did not meet contractual requirements previous to applying for and receiving approved exemptions and equivalencies from RL.

- **S-11-EMD-PRC-001-F10:** The CHPRC proceeded in the construction of the Potable Water Treatment Facility structure prior to the review and approval of the design by a qualified Fire Protection Engineer /Deputy Fire Marshal.

- **S-11-EMD-PRC-001-F11:** CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question.

- **S-11-EMD-PRC-001-F12:** CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

- **S-11-EMD-PRC-001-F13:** CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

- **S-11-EMD-PRC-001-F14:** The CHPRC does not have an active Memorandum of Understanding with the Hanford Fire Marshal's Office which has resulted in confusion of the authority, responsibilities, and duties of the Hanford Fire Marshal.

- **S-11-EMD-PRC-001-F15:** CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate Lockout/Tagout (LOTO) notification and briefings.

- **S-11-EMD-PRC-001-O01:** CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).

- **S-11-EMD-PRC-001-O02:** Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

- **S-11-EMD-PRC-001-O03:** CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

- **S-11-EMD-PRC-001-O04:** After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and did not accurately categorize the event.

Surveillance Results:

Concern: S-11-EMD-PRC-001-C01

The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.

Discussion:

The CHPRC 100K IUUP did not meet several contractual requirements during the construction of the 100K Water Treatment Facility and the Fire and Potable Water Distribution System. CHPRC procedures and policies did not fully integrate environmental and fire protection program requirements into project design and construction. The CHPRC work management procedures that were used to initiate, implement, and perform work did not adequately identify and integrate environmental and fire protection contractual requirements. This reveals a weakness in the implementation of the CHPRC Integrated Safety Management System (ISMS) Program for the 100K IUUP. The CHPRC engineering program, project management, construction, project control, and work management, did not fully integrate contractual requirements into their activities. Some contractual requirements identified in CHRPC Procedures and Policies were not followed by the 100K IUUP.

The objective of ISMS is to incorporate environment, safety, and health into management and work practices at all levels, addressing all types of work and all types of hazards to ensure safety for the workers, the public, and the environment. Line management is responsible and accountable for safety, safety management, and the integration of safety into business and operations at a site.

It is noteworthy that a similar Concern was stated in the previous DOE-RL *Assessment of the CH2M Hill Plateau Remediation Company Fire Protection Program* (A-10-SED-PRC-23) of May 27, 2010, which stated "CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated FPP requirements. The CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." The Assessment was transmitted to the Contractor by DOE-RL letter 10-SED-0128 of August 19, 2010.

Findings 1 through 15 support this concern.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F01

CHPRC did not apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.

Requirement(s):

1. RCW Chapter 70.119A, *Public Water Systems — Penalties and Compliance*
2. WAC Chapter 246-290, *Group A Public Water Supplies*
3. CRD O 226.1A, *Implementation of Department of Energy Oversight Policy*
4. CRD M 231.1-1A, Chg 2 (Supp Rev 1), *Environment, Safety, and Health Reporting Manual*
5. CRD O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*
6. CRD O 414.1C, *Quality Assurance*
7. CRD O 450.1A (Supp Rev 0), *Environmental Protection Program*
8. DOE Contract Number DE-AC06-08RL14788, Section H.19, *Environmental Responsibility*, and Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.
9. PRC-PRO-EP-15333, *Environmental Protection Processes*
10. PRC-RD-EP-15332, *Environmental Protection Requirements*

11. PRC-PRO-EP-15335, *Environmental Permitting and Documentation Preparation*

12. PRC-POL-EP-5054, *CH2MHILL Plateau Remediation Company Environmental Policy*

Guidance:

DOH 331-123 (Rev. 12/09), *Water System Design Manual*

Discussion:

Group A public drinking water systems in the State of Washington are subject to regulation pursuant to WAC Chapter 246-290.[1] More specifically, relevant regulations state:

> [A] . . . project report is a written document that describes why a project is being proposed and includes engineering design calculations showing how the project will meet its objectives. . . . Purveyors shall submit project reports to the department and obtain written approval ***prior to installation or construction*** of any new water system, water system extension, or improvement. . . .

WAC 246-290-110(1), -110(2) (***Emphasis added***). The regulations also state:

> Construction documents shall identify how specific projects will be constructed while satisfying the requirements and conditions established in the project report and/or the water system plan. . . . Purveyors shall submit construction documents to the department and obtain written approval ***prior to construction*** of any new water system, or water system extension or improvement.

WAC 246-290-120(1), -120(2) (***Emphasis added***).

On May 6, 2009 the "100K Infrastructure Project Charter Workshop," was held to define the scope, objectives, and deliverables of the 100K IUUP. The workshop was also intended to define the schedule, cost estimate basis, roles and responsibilities, key interfaces, and requirements necessary to successfully complete the Project. See Exhibits 2, 3, 4, 5, and 6.

The project scope adopted as a result of the Workshop Study for the 100K IUUP included, among other things, construction of a cross site raw water transfer line, a new Group A public drinking water treatment plant and water delivery lines, installation of a new fire water pumping system and new fire water delivery lines, and major modifications of fire water mains in the vicinity of the 105K W Reactor.

[1] The 100K IUUP provided upgrades to infrastructure that was necessary to support a variety of ongoing response actions being performed in the 100K Area pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC § 9601, et seq. The Project may have been entitled to exemption from Federal, State or local laws requiring obtaining permits or approvals if the Project had elected to proceed under CERCLA. See 42 USC § 121(e).

DOE has recognized, and has instructed its contractors since at least 1995, that WDOH Drinking Water Regulations are applicable to public drinking water systems operated on the Hanford Site.[2] This includes regulations requiring approval of drinking water system designs and construction specification prior to commencement of construction activities. CHPRC is expressly obligated by its contract to comply with the requirements of WAC Chapter 246-290. See Contract Number DE-AC06-08RL14788, Section H.19, and Attachment J.2, Tables J.2.1 through J.2.8.

In June 2009, CHPRC's 100K Area ECO began an analysis to identify environmental regulatory requirements that would apply to the 100K IUUP by completing an Environmental Activity Screening (EAS) form.[3] CHPRC environmental protection procedures requires that " . . . [b]efore starting any . . . [n]ew construction projects . . . [e]xcavations or disturbances to soil . . . " a cognizant ECO must perform " . . . an environmental review and documents it using an EAS form . . . ." *See* PRC-PRO-EP-15333, Sec. 5.3. Because a drinking water system was involved in the project, the same procedures required the ECO to evaluate and " . . . determine permitting needs and develop an application for an operating permit . . . in accordance with WAC 246-290 . . . . " *Id.* Sec. 5.7. The EAS form completed by the 100K Area ECO identified that the project involved construction of a public drinking water system subject to State regulations, and would also require a determination pursuant to NEPA regulations. *See* Exhibit 7.

On August 24, 2009, the 100K Area ECO again considered the 100K IUUP permitting needs. On that date, the ECO sent an e-mail titled "100K Follow Up" to the EP Manager in CHPRC's central environmental organization. The e-mail quoted the requirements of the then existing PRC-PRO-EP-15333, Sec. 5.7, and requested assistance in meeting the specified requirements. *See* Exhibit 8. During an interview, the ECO stated that his e-mail was not responded to. The assessment team requested, but was not provided any information contradicting the ECO's statement.

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[2] On April 11, 1995 the Director of DOE-RL's Site Infrastructure Division sent a letter to the President of Westinghouse Hanford Company stating:

> The U.S. Department of Energy, Richland Operations Office (RL) is the owner of several Group A and Group B water systems, and Westinghouse Hanford Company and ICF Kaiser Hanford Company operate the water systems for RL. The purpose of this letter is to clearly state that the water systems on the Hanford Site are subject to the State of Washington Department of Health Drinking Water Regulations under Washington Administrative Code and the water systems will operate in accordance with these regulations. These regulations apply to the operation of the drinking water systems as well as to construction/modification on any system.

See Exhibit 1.

Since that time all Group A and B water systems on the Hanford Site have been required to be operated and constructed/modified in compliance with the above noted Washington State Department of Health regulations. This has included the system that was constructed and maintained at the 100K Area in the years immediately following the issuance of the above noted letter, and the construction and operation of the upgraded system just recently completed.

[3] About the time the EAS form was completed, the former 100K Area ECO (now the 100K Sludge Treatment Project (STP) ECO) provided the 100K IUUP Potable Water Project Engineer, and the 100K Area ECO, the working file of the existing 100K water system. This file contained the letter referred to in footnote 1, and most, if not all, of the existing documentation and historical information on the 100K Area water system, including numerous correspondence exchanges with the WDOH over the years concerning that system. *See* 100K Area water system documents from April 1995-June 2002 (STP ECO's files).

On October 6, 2009 CHPRC met with WDOH officials at that agency's office in Spokane, Washington. The parties discussed the permitting requirements to install a new water treatment plant at 100K Area to replace the then existing water system, and finalizing the preferred method to dispose of the filter backwash water that would be generated by the new water plant. Attendees at this meeting were the 100K Area Water Purveyor, DOE-RL Site Infrastructure Representative, ARES Corporation engineer, 100K IUUP Potable Water Project Engineer, and the 100K Area ECO. *See* Exhibit 9. The following day (October 7, 2009) the DOE-RL Site Infrastructure Representative who attended the meeting wrote an email message to the DOE-RL project representative opining that the meeting went "very well" and stating that: "Your contractor staff were very well organized, well spoken and professional." *See* Exhibit 10.

During the fall of 2009 planning for the 100K IUUP continued. On November 9, 2009, the 100K IUUP Construction Manager sent an email message Subject: Draft SOW for 100K Water Infrastructure Project, to numerous individuals stating that:

> The PRC-PRO-AC-123 Functional & Project Concurrence Checklist has identified you as a potential required reviewer/SME of this SOW due to content of the work scope. Please review and provide comments. The Submittal Register is being developed, please identify potential submittal requirements. I am requesting comments be returned to me 11/16/09. Also, please identify if you will require approval signature on the final SOW.

See Exhibit 11 and Exhibit 12 "Attachment 5 Functional & Project Concurrence Checklist."

Although the Checklist contains a question regarding whether "the service" involves "Ecology, Department of Health, or EPA requirements, investigations, or remediation," in response the CHPRC EP Manager provided "Yes" in the Applicability section of the form and "No Comment" in the Project Contact/Reviewer section of the checklist. Subsequently, on December 21, 2009, the 100K IUUP Construction Manager sent an email message to the 100K IUUP Controls Clerk stating: "All SME approvals have been received and all comments have been incorporated into the SOW-Scott Story." *See* Exhibit 13.

On December 16, 2009, the 100K IUUP Potable Water Project Engineer wrote an e-mail message to the 100K Area ECO and copying the 100K IUUP Project Manager, Project Director, and Project Construction Manager, asking permission to discuss: " . . . a potential risk related to the Department of Health permitting process . . . " and seeking assistance in the matter. The message also stated: ". . . a project report will need to be ***submitted and approved by the Department of Health prior to construction*** of the water system (per WAC 246-290-110) . . . . " *See* Exhibit 14 (***Emphasis added***).

The e-mail goes on to explain:

> The purpose of contacting you and potentially . . . [the 100K D&D Project Environmental Director] is to determine if the

> environmental group has any issue with the 100K project moving forward with this approach. If so, please contact the project management team . . . [100K IUUP Project Manager, Project Director, and Project Construction Manager] to discuss the issue further.

Id.

Several minutes later the ECO forwarded the message to the D&D Project Environmental Director requesting her assistance in this matter, and copied the Project Construction Manager, Construction Manager, Project Director, Project Engineer, and EP water subject matter expert.[4] See Exhibit 15.

On January 11, 2010 the President and Chief Executive Officer of CHPRC sent a letter to Mr. M.D. Wilson, WDOH Regional Engineer titled, "Request For Waiver Of Pilot Study For New 100k Potable Water Facility." Accompanying this letter was an attachment with documentation supporting a waiver of pilot testing requirements of the PALL potable water treatment system proposed to be installed at the 100K Area. The conclusion of the attachment contains the following statement:

> ***A project report meeting the requirements of WAC 246-290-110***, and tailored to fit the Hanford Site context, will be submitted to you as soon as the required information is obtained/developed ***and in advance of construction of the new 100K Potable Water Facility***. Preliminarily, we expect that this will occur in the February 2010 timeframe. The project report will also include a section addressing the scope, protocols, and sampling/monitoring requirements associated with the Operational Testing phase introduced above.

See Exhibit 16 (***Emphasis added***).

On January 28, 2010 CHPRC issued a letter to Watts Construction, Inc. for the "100K River Water Isolation Project Import Water Line Notice to Proceed." This letter stated that all work was to be performed under this task no later than June 30, 2010 and to notify the CHPRC Contracts Office if that deadline could not be achieved. See Exhibit 17.

On February 17, 2010, Mr. Wilson of WDOH wrote a letter to the CHPRC 100K Area Potable Water Engineer with responses to the CHPRC submission of January 11, 2010 in which he stated:

> As outlined in your request, ***a project report, meeting the requirements of WAC 246-290-110, will be submitted in advance of the construction documents*** and will include the scope,

[4] No written response to this email has been provided, although the surveillance team requested that the D&D Project Environmental Director search her files and disclose any response that she may have retained.

> protocols, and sampling/monitoring requirements for the testing of the full-scale facility. This project report shall include the rational for selecting the Pall membrane.

See Exhibit 18 (***Emphasis added***).

On March 16, 2010, the 100K Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP.[5] The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." This permit was signed by, among others, the Design Authority/Technical Representative, ECO, Water Utilities Representative and the Facility/System Owner. *See* Exhibit 19.

On April 7, 2010 a CHPRC Contracting Officer, sent a letter to George A. Grant, Inc. regarding "Contract Number 36534-31 ARRA-Potable Water Treatment Facility Contract Award Documents Transmittal." The purpose of the letter was to formally authorize George A. Grant, Inc. to proceed with the work scope defined as "ARRA – Potable Water Treatment Facility." The letter also stated that "Construction work shall be complete by July 23, 2010." *See* Exhibit 20.

Also on April 7, 2010 and again on April 21, a Project Review Board (PRB) for the 100K IUUP was convened and evaluated the Project's readiness to proceed. Materials presented to the PRBs contained no mention of applicable regulatory requirements. *See* Exhibits 55 and 57. Actual construction activities on the potable and fire water lines portion of the project inside 100K Area began on April 13, 2010. *See* Exhibit 21. Construction on the Import raw Water Line (outside of the fence) began on April 28, 2010. *See* Exhibit 22. Construction on the Potable Water Treatment Facility by Grant Construction began on May 14, 2010. *See* Exhibit 23.

On May 18, 2010, CHPRC's EP & SP Vice President and members of his staff travelled to Spokane, Washington to meet with WDOH and discuss water system construction in Hanford's 200 Area that had commenced without WDOH approvals. While in route, the EP & SP Vice President was contacted by the 100K IUPP Potable Water Project Engineer and was informed that work had begun on the 100K Area's new potable water delivery and treatment system prior to obtaining written approval from WDOH. He was also informed that the Project Report and construction documents required by regulations had not yet been completed and sent to WDOH. Upon learning this information, the CHPRC EP & SP Vice President advised 100K IUUP management to immediately issue a STOP WORK order and the Project was halted.

Upon arriving in Spokane later that morning, the EP & SP Vice President explained that CHPRC had requested the meeting that day with WDOH "in the interest of developing a better working relationship." According to the Spokane meeting summary, later prepared by the CHPRC EP Environmental Compliance Manager, discussion then followed concerning the use of the PALL Membrane Filter Technology, appropriate content of a project report, and "General Discussion."

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[5] While the ECO signed the Excavation Permit on March 16, 2011, it did not become effective until March 18, 2011 when all other required signatures had been secured.

Based on meeting summary notes, WDOH reiterated that while the PALL system is considered alternative filtration technology, WDOH is comfortable with the technology based on its use elsewhere in the State. WDOH then discussed the requirements for a project report and indicated they were expecting the Project Report for their review and approval. CHPRC "noted" that "some construction" was initiated prior to formal approval. CHPRC then asked for clarification about water purveyor responsibilities and how WDOH "would like to see roles and responsibilities implemented at a large DOE site with multiple drinking water systems and contractors."

There was also some discussion about what constitutes the "commencement" of construction. WDOH confirmed that while construction is not defined it is intended to mean to "build or install ***any*** component that is part of the drinking water system" and that ***WAC regulations do not allow for construction prior to written approval from WDOH***. See Exhibit 24 (***Emphasis added***). If a "person" starts construction before the Project Report is approved, "they" are assuming risks, including the risk of needing to remove a component that is not approved in the project report. *Id.* WDOH policy prohibiting construction prior to obtaining required approvals is clear in official documents. See DOH 331-123 (Rev. 12/09), *Water System Design Manual*, Sections 2.1 and 3.1. Statements of the WDOH Regional Engineer made during this meeting are also documented in an October 19, 2010[6] CHPRC Root Cause Analysis Report which states:

> CHPRC Environmental Protection Vice President . . . and Environmental Director . . . met with WDOH on May 18, 2010. Results of meeting were that even though in the past, WDOH informally allowed construction of a water system to commence prior to formal receipt of approvals for the Project Report, per WAC 244-290-110(2), [sic] approval must be received prior to installation or construction of a water system. Therefore, noncompliance with WAC 246-290-110(2) had occurred.

See Exhibit 25 at p.16.

During the return trip on May 18, 2010 to the Hanford Site, the CHPRC EP and SP Vice President contacted the 100K IUUP Project Manager and reported the results of the meeting with WDOH. 100K IUUP personnel then met and a decision was made to restart construction on the water delivery and treatment system. Later that day, the 100K IUUP Project Manager wrote an email message to the CHPRC D&D Vice President copying the 100K IUUP Project Director, D&D Project Environmental Director, and the 100K IUUP Water Project Engineer giving them a brief history and status of the Project. The email states in part:

> . . . State Code WAC 246-290-110 requires that a project report to be [sic] submitted prior to water system construction, expansion, or improvement. . . . [W]e are not compliant with requirement WAC 246-290-110.

[6] The Report date is listed as October 19, 2010, but the last approval signature is November 2, 2010, suggesting the latter date is that of the Report's adoption.

See Exhibit 26. The message also states:

> ***Following CHPRC senior management's meeting*** earlier today with DOH, ***we have been directed to continue with our construction activities.*** Whereas it is apparent that DOH may not be fully pleased with commencing construction prior to the receipt and concurrence with the project report, it is not a critical misstep. Therefore, at this time we will thoroughly review all of our project requirements, work to submit our project report as early as possible, and engage DOH further on our project status.

Id. (***Emphasis added***).

In the interviews conducted with the 100K IUUP Project Manager, he stated his recollection that a teleconference was conducted on or about May 19, 2010 involving himself, the CHPRC President and CEO, CHPRC D&D Vice President, and the 100K IUUP Project Director concerning the future direction of the Project. At the conclusion of the teleconference the participants jointly decided to continue with construction activities on the potable water delivery system even though required WDOH approvals had not been obtained. He also stated that this decision was unilateral, as no approval of this decision was sought from any DOE representative.

On June 1, 2010, the CHPRC submitted the "Project Report For 100K Potable Water Facility" to the WDOH for their review and approval. *See* Exhibit 27. In the two weeks immediately following the meeting on May 18, 2010 with WDOH, the CHPRC EP group conducted an analysis of the applicable WAC potable water regulations with respect to fire system applicability. These activities resulted in the CHPRC EP and SP Vice President sending an e-mail message on June 2, 2010, to the CHPRC President and CEO, CHPRC D&D Vice President, and the 100K IUUP Project Director concerning the fire system applicability issue. This message states, in relevant part:

> Based on the review below, we can confirm that the Fire System is not under [W]DOH's authority. There are parts of this system that have dual purpose (both potable water and Fire System), those have to comply with the Safe Drinking Water regulations. This does not change our path forward as discussed yesterday. ***We need to get this Project Report (permit) into DOH's hands as soon as possible*** and within a week should be talking to [W]DOH in person. In the mean time ***we can go ahead with the Fire System installation*** (including the building) ***but should slow down on the drinking water system, until we have [W]DOH's approval.***

See Exhibit 28 (***Emphasis added***).

In the interviews conducted with the 100K IUUP Project Director and the Project Manager, when asked what did the phrase "slow down on the drinking water system until we have

[W]DOH's approval" mean to each of them they both stated they didn't know, and acknowledged that construction continued.

On June 5, 2010, the CHPRC 100K IUUP Project Manager requested that the CHPRC 100K IUUP Potable Water Project Engineer contact the WDOH Regional Engineer to arrange a time to meet with him to discuss the recently submitted Project Report. According to a June 7, 2010 email sent by the CHPRC 100K IUUP Potable Water Project Engineer to the 100K IUUP Project Director (copying the CHPRC D&D Vice President, CHPRC EP Director, CHPRC D&D Environmental Director, and the 100K IUUP Project Manager) the WDOH Regional Engineer did not see a need for a meeting until after he and a colleague had had time to review the Project Report. This e-mail also addresses the ARRA funding nature of the Project stating:

> Due to the fact that the 100K Infrastructure project is funded by the American Recovery and Reinvestment Act (ARRA), CHPRC is moving forward with certain activities in order to meet the aggressive schedule requirements. I stated the 100K project is moving forward with site preparatory work for the 750,000 gallon dual use water tank, foundation work and underground piping for the water treatment facility building, installation of the fire and potable water system with approximately 25% of the fire main and 20% of the potable water distribution system already installed. ***Mr. Wilson explained that CHPRC construction activities are being performed at risk.*** Based upon the review of the project report and construction documents, the Department of Health may request changes to the system and those would be at project cost. It is Department of Health's expectation that the changes would be made by CHPRC to correct any outstanding issues and issuance of the final permit.

See Exhibit 29 (***Emphasis added***). The Assessment Team asked the CHPRC IUUP Project Potable Water Engineer if the WDOH Project Engineer noted above had supplied any written confirmation of the content and understandings contained in the above e-mail. He told the Assessment Team he had not received any such confirmation from the WDOH Regional Engineer.

On June 16, 2010, the WDOH Regional Engineer wrote back to the 100K IUUP Potable Water Project Engineer acknowledging receipt of the report and assigning a project report tracking number. *See* Exhibit 30. The following week the 100K IUUP Project Manager submitted to WDOH construction documents (drawings and specifications) for the following components of the water delivery and treatment system: 1) 100K Area Water Line; and Water Filtration Drawings, 2) 100K Area Water Treatment Facility Plan Drawings, 3) 100K Export Water Line Drawings, 4) Construction Specification for 100K Fire Protection and Water Lines, 5) Construction Specification for 100K Water Export Line, 6) Construction Specification for 100K Water Line and Filtration System, 7) Procurement Specification for Water Storage Tank, 8) Procurement Specification for Microfiltration System. *See* Exhibit 31.

On July 8, 2010, the WDOH sent its formal response to the submission of the Project Report addressed to the 100K IUUP Potable Water Project Engineer. This letter provided comments to the Project Report and addressed the timing of work on the Project vis-à-vis formal written approval by WDOH. Paragraph 8 of this letter states:

> The schedule indicates that some potable water components have been or are being installed. Please note that anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service [WAC246-290-050(7)], and may be required to expose system components for our inspection, at their expense. DOH may be unable to accept any component that is installed or constructed prior to approval.

See Exhibit 32.

The Assessment Team conducted interviews with the 100K IUUP Potable Water Project Engineer and the CHPRC D&D Environmental Director. Both of these individuals stated that there had been verbal communications between the WDOH Regional Engineer and the 100K IUUP Potable Water Engineer on the issue of construction prior to WDOH approval. These communications were said to have occurred on or about July 8, 2010 and that the WDOH Regional Engineer had told the 100K IUUP Potable Water Engineer that the warning language contained in paragraph 8 of the July 8, 2010 letter from WDOH to CHPRC was "standard language" that WDOH was required to put in the letter. However, the warning language notwithstanding, WDOH reported it was satisfied with how the Project was progressing and the communications that were occurring between CHPRC staff and the WDOH. The CHPRC D&D Environmental Manager told the Assessment Team members she believed she saw, or possessed, an email from the WDOH Regional Engineer memorializing this understanding that WDOH would not bring an enforcement action. She told the Assessment Team she believed she might be able to produce and deliver that e-mail. However, to date, she has not provided such an email to the Assessment Team.[7]

On July 22, 2010 WDOH acknowledged receipt on July 1, 2010 of the construction documents that had been sent to WDOH by CHPRC on June 23, 2010. *See* Exhibit 33. Also on July 22, 2010 the 100K IUUP Project Manager sent a letter to the WDOH Regional Engineer acknowledging CHPRC's receipt of WDOH's comments on the Project Report "dated June 8, 2010 and discussed with WDOH in subsequent conversations on July 8, 2010." This letter then responds to WDOH's comments as enumerated by WDOH. Under comment #8, noted in the preceding paragraph of this report, the response is, "Comment noted." *See* Exhibit 34.

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[7] A significant number of CHPRC employees stated that no violation of regulatory requirements had occurred as CHPRC had WDOH verbal permission to start construction without normally required formal approvals, and that no enforcement action would occur. Any WDOH representation notwithstanding, persons holding or needing a permit have: "[A]n absolute duty to comply with . . . permit [requirements]. This duty remains regardless of oral or written representations by the permitting agency allegedly excusing compliance with permit requirements." *Sierra Club v. Young Life Campaign, Inc.*, 176 F.Supp2d 1070 (D.Colo. 2001), citations omitted.

On August 3, 2010 WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer with its comments concerning the "new membrane facility." *See* Exhibit 35. Then, on August 5, 2010, WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer approving the Project Report received June 3, 2010. *See* Exhibit 36. Finally, on September 15, 2010 WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer approving the construction documents received on July 1, 2010. *See* Exhibit 37. Construction began on April 14, 2010. The WDOH approval to proceed to construction was not obtained until 155 days after the start of construction.

On January 27, 2011 the CHPRC 100K IUUP Project Manager sent the Operational Performance Testing Report and associated attachments to WDOH for their review and approval. *See* Exhibit 38. In response, on February 1, 2011, WDOH sent a letter addressed to the 100K IUUP Project Manager acknowledging receipt of the Operational Performance Testing Report. *See* Exhibit 39. On February 18, 2011 WDOH sent its approval of the Operational Performance Testing Report and associated attachments which it had received on August 10, 2010 and January 27, 2011.[8] *See* Exhibit 40. On March 10, 2011 WDOH again wrote to the 100K IUUP Project Manager acknowledging its receipt of the Operation and Maintenance Manual. *See* Exhibit 41. Five days later the WDOH Regional Engineer wrote an email addressed to the 100K IUUP Potable Water Project Engineer and the CHPRC 100K Area Water Purveyor which states: "O & M Manual Review (sic) We completed our review of the O&M manual that was received in this office on March 4, 2011. I have two comments, but nothing that will prevent the start-up of the new membrane WTP." *See* Exhibit 42.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F02

CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities.

Requirement(s):

1. National Environmental Policy Act, 42 U.S.C.A. § 4321, et seq.

2. 10 CFR 1021, *National Environmental Policy Act Implementing Procedures*

3. DOE Contract No. DE-AC06-08RL14788, Sec. H.19 (a), and Attachment J.2, Table J.2.1.

[8] This letter incorrectly states that WDOH received some of these documents on January 27, 2010. This is inaccurate as the subject documents had not been generated by that date. Therefore WDOH must be referring to the Operational Performance and Testing Report submitted January 27, 2011 not January 27, 2010.

4. PRC-PRO-EP-15333, *Environmental Protection Processes*

5. PRC-RD-EP-15332, *Environmental Protection Requirements*

Discussion:

On June 18, 2009 the100K Area Environmental Compliance Officer (ECO), sent an e-mail message with an attached Environmental-Activity Screening Form (EASF) to the CHPRC NEPA subject matter expert stating that: "Because this is stimulus funded . . . we will need to obtain a [sic] activity-specific CX for our NEPA coverage." *See* Exhibit 7.

The ECO also requested a meeting to discuss the contents of the EASF and asked when the activity-specific CX could be expected. This email message was also copied to the 100K IUUP Project Director, 100K IUUP Construction Manager, D&D Project Environmental Director, and the CHPRC EP Manager. The EASF identified that the activities to be undertaken involved the constructing or modifying of a public water, raw water, or export water system. *Id.*

On April 23, 2010 the CHPRC D&D Project Environmental Director wrote an email message to the 100K Area ECO asking whether the "ecological review" had been completed for the Project. *See* Exhibit 43. Three days later (April 26, 2010) the ECO forwarded the Environmental Director's email to the CHPRC NEPA Subject Matter Expert (SME) who wrote back the same day stating that now he needed to "close with . . . [the DOE Hanford NEPA Compliance Officer] on the CX" and also stated that he would "follow-up with you and . . . [the CHPRC D&D Project Environmental Director] this week." *See* Exhibits 44 and 45. Then on April 28, 2010, the CHPRC SME wrote an e-mail message to the DOE Hanford NEPA Compliance Officer requesting approval of the ". . . activity specific CX for 100K Area Utilities Reroute." The DOE Hanford NEPA Compliance Officer did not respond, and the CHPRC SME did not make further inquiry about the status of the NEPA determination until May 24th and 25th, 2010. *See* Exhibits 46 and 47. By that time construction, which started on April 14, 2010, had been ongoing for nearly six weeks without receiving a NEPA CX determination. On May 26, 2010, the DOE-RL NEPA Compliance Officer signed the CX for the Project. *See* Exhibit 48.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F03

Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.

Requirement(s):

1. CRD M 231.1-2 (Supp Rev 8), *Occurrence Reporting and Processing of Operations Information*

2. CRD O 414.1C, *Quality Assurance*

3. PRC-PRO-QA-052, *Issues Management*

4. DOE Contract Number DE-AC06-08RL14788, Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

Discussion:

On July 20, 2010 a team was assembled and convened to determine the root cause(s) of the failure to obtain WDOH written approval prior to commencing construction activities on the 100K potable water delivery and treatment system. A follow on session was performed on August 3, 2010 to further evaluate the conditions and identify the root causes. The Root Cause Analysis Report (RCA Report) was released on November 2, 2010, five months after the team was first assembled.[9]

The RCA Report contains several factual errors. First, the report states that on May 26, 2010 the CHPRC NEPA SME determined that the NEPA CX had not been obtained and that the CX approval was obtained on May 27, 2010. Realization of the lack of NEPA CX approval occurred on May 24, 2010 and actual approval from DOE-RL obtained on May 26, 2010. The RCA Report also states that work was suspended during the week of June 1, 2010 on portions of the project "that clearly required WDOH approval." There is no evidence that any suspension of activities occurred on the project except for a few hours on May 18, 2010. In fact, the CHPRC ARRA weekly reports for the weeks of April 14, 2010 to July 21, 2010, clearly detail in both text and photographs that work continued without interruption on the project during that period. *See* Exhibit *21.*

The RCA Report further states that the combination of two separate events (one at 200 East Area and one at the100K Area) was determined to be a significant issue because of noncompliance with several WAC and Code of Federal Regulations (CFR) requirements, and CHPRC procedures. The RCA Report did not identify WAC 246-290-120, *Construction Documents,* which is a critical WAC requirement applicable to the 100K IUUP. Furthermore, the Report also does not address the CHPRC requirements identified in PRC-PRO-PM-25000 which require completion of a Project Execution Plan prior to start of construction. The RCA Report also does not acknowledge applicability of DOE CRD 413.3A to the project.

The RCA team identified two root causes for the failure to obtain WDOH approval prior to the start of construction. The Phoenix Analysis process and the "Five Whys" were employed to identify the adverse conditions. With regard to Root Cause #1 the report states, in relevant part:[10]

---

[9] During July, August, and the first half of September 2010 construction continued on the project without receiving the required WDOH approval, and without completion of the RCA Report.

[10] According to the RCA Report the above statement correlates to the Phoenix Analysis #A4B1C01-Management policy guidance/expectations not well-defined understood or enforced. *See* Exhibit 25, pp. 6-7 of 17, Section 6.3 RC-01.

> Management expectations were not clearly understood concerning unacceptability of proceeding at risk concerning environmental, regulatory approvals . . . , and, Furthermore, the Environmental Activity Screening Form (EASF) checklist did not have the drinking water requirements checked as applicable to the 100K project.

Neither of the conclusions contained in the quote above were correct. CHPRC's official correspondence with the WDOH prior to commencing construction establishes that management understood the applicable requirements. In its letter of January 11, 2010 CHPRC requested a waiver by the WDOH of the pilot study for the Potable Water Treatment Facility and acknowledged in the attachment to that letter that:

> A project report meeting the requirements of WAC 246-290-110, and tailored to fit the Hanford Site context, will be submitted to you as soon as the required information is obtained/developed ***and in advance of construction*** of the new 100K Potable Water Facility.

See Exhibit 16, p. 8 Attachment to Letter (***Emphasis added***).

In response to the above letter the WDOH Regional Engineer acknowledged this understanding was correct by stating in his letter of February 17, 2010 addressed to the CHPRC's 100K IUUP Potable Water Project Engineer:

> As outlined in your request, a project report, meeting the requirements of WAC 246-290-110, will be submitted ***in advance of the construction documents*** and will include the scope, protocols, and sampling/monitoring requirements for the operational testing of the full-time facility. . ."

See Exhibit 18 (***Emphasis added***).

Thus, as early as January 11, 2010, CHPRC conveyed its understanding that construction could not commence on this Project until it received WDOH's formal written approval. The author of that letter was the 100K IUUP Potable Water Project Engineer, and the D&D Environmental Manager approved release of the letter prior to its being sent to WDOH. WDOH acknowledged and confirmed that requirement in its response letter dated February 17, 2010.[11] *Id.*

Furthermore, the statement under Root Cause #1 concerning the EASF not addressing the applicability of the drinking water requirements is incorrect. Under the section entitled "Constructing or Modifying Facilities, Equipment, or Processes" subsection 5.7 "Constructing or Modifying Public Water, Raw Water, or Export Water Systems" is clearly marked on the EASF.

[11] WDOH reconfirmed its position on this issue in its letter addressed to the CHPRC 100K IUUP Potable Water Project Engineer dated July 8, 2010.

In checking that box the 100K Area ECO, acknowledged that the WDOH drinking water requirements were applicable. When the ECO sent the EASF to the CHPRC NEPA SME and copied the CHPRC EP Manager, he clearly indicated the project involved the construction of a potable water system. Furthermore, on August 24, 2009, the ECO sent an email message to the CHPRC EP Manager requesting assistance in obtaining the necessary WDOH approval for this new system. *See* Exhibit 8. The Assessment Team, in its interviews with the ECO, asked if he had received any response to his August 24, 2009 email, and he stated he had not.

Root Cause #2 suggests that inexperience of some personnel, and lack of familiarity with regulatory requirements lead to a belief that it was acceptable to commence construction without all WDOH approvals. It also discloses that preceding at risk was necessary to meet project schedule. Root Cause #2 of the RCA Report states:[12]

> Individuals relied on past experience with WDOH regulators and previous drinking water installation projects outside of Hanford and the DOE Complex. Due to this experience individuals believed that:
>
> - WDOH would informally allow the simultaneous preparation and review of the Project Report while construction activities such as excavations and placement of material commenced
> - An environmental "at-risk" position was acceptable to the regulators and CHPRC
> - The "at-risk" position was also considered necessary to meet the fast-track project schedule. WDOH confirmed to CHPRC that they know and may informally allow projects to proceed at-risk even though the regulations do not allow for this interpretation.

See Exhibit 25.

However, other information establishes that the project staff were fully informed that proceeding at risk was not an acceptable practice form WDOH's perspective. In order to assess historic WDOH enforcement postures, a former Hanford Site Water Purveyor was interviewed. According to this individual a WDOH Regional Engineer made it clear on many occasions that it was a violation of WDOH regulations to proceed with construction prior to obtaining WDOH approval, that such practice was not endorsed or condoned by WDOH. The former Hanford Site Water Purveyor stated that he had had discussions with the 100K IUUP Potable Water Project Engineer and the Project Manager prior to and during construction, and conveyed to the them that proceeding "at risk" was not endorsed or condoned by WDOH and could result in an enforcement action.

[12] The above statement is noted in the RCA Report as correlating to the Phoenix Analysis #A3B3C06-Individuals underestimated the problem using past events as a basis. *See* Exhibit 25.

Finally, while CHPRC performed a root cause analysis, it did not do so in a timely fashion. Considering the guidance contained in CRD M 231.1-2, timely or prompt completion of the RCA Report would have been within forty-five days of discovery of the issues on May 18, 2010. Furthermore, the title of the RCA Report, *Root Cause Analysis Report EM-RL-CPRC-GENLAREAS-2010-0013* suggests it was prepared in connection with *Occurrence Report EM-RL-CPRC-GENLAREAS-2010-0013,* in which case it should have been published within forty-five days of the event covered by the occurrence report. *See* CRD M 231.1-2 (Supp Rev 8).

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F04

CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).

Requirement(s):

1. CRD O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*
2. CRD O 414.1C, *Quality Assurance*
3. PRC-PRO-PM-24889, *Project Initiation and Execution*
4. PRC-PRO-PM-25000, *Project Execution Plans*
5. PRC-PRO-CN-14990, *Construction Management*
6. PRC-POL-EP-5054, *CH2MHILL Plateau Remediation Company Environmental Policy*

Discussion:

While CHPRC accurately identified environmental regulatory requirements that would need to be met during construction of the 100K IUUP, it did not address those requirements in project execution plans in a manner consistent with applicable CHPRC procedures. While 100K IUUP FES documents included schedules for obtaining approvals for the construction of the drinking water system from the WDOH, the schedules were unrealistically short and hence unachievable.

The 100K Area ECO completed a CHPRC EAS Form in July, 2009, and at that time accurately identified the need to obtain a NEPA clearance and that the 100K IUUP involved construction of a drinking water system requiring approvals from WDOH. This early identification of environmental regulatory requirements is both consistent with guidance and procedures, and is

expected. *See* Exhibit 7. Unfortunately, neither the draft nor final 100K PEPs contained a strategy for meeting these requirements.

As noted under Finding 13 below, the 100K IUUP didn't adopt a final PEP until July 29, 2010. It operated under a draft PEP from approximately January 2010 until July 2010, during which period there was little or no updating occurring, nor change control exercised. CHPRC procedures preclude start of field work until a PEP has been approved. *See* PRC-PRO-CN-14990, *Construction Management,* Sec. 3.3.3.1 2.

CHPRC procedures require that environmental and other regulatory requirements be identified and PEPs prepared during the conceptual design phase (CD-1) of projects. Relevant procedures direct that during conceptual design:

> [T]he initial environmental documents applicable to the project need to be prepared including National Environmental Policy Act (NEPA) strategies, analysis, and permit applications.
>
> . . . The project manager needs to work in close coordination with the CHPRC environmental management organization to develop these strategies and documents. Failure to adequately recognize these requirements can result in lengthy and costly delays to the project.

See PRC-PRO-PM-24889, *Project Initiation and Execution*, Sec. 6.2.8. Functional design criteria documents should also be developed at this state of the project. *Id.*, Sec. 6.2.3.[13]

Initial PEPs developed at conceptual design are required to include: " . . . a description of the project's tailoring strategy for implementation of CDR O 413.3 documentation for each phase of project execution and the strategy for execution of the project phases and CD decisions by the CHPRC PRB, if applicable. *Id.* at Sec. 6.2.9. To meet these requirements, a PEP must contain an Environmental Regulatory Strategy. The Strategy must:

> Provide a reference or identify documents that establish the environmental regulatory strategy for the project. The section should include the following: . . . Description of the governing environmental regulatory requirements for the project (e.g., RCRA, CERCLA) . . . A brief description of environmental regulatory documents and permits required for the project . . . Status and plans for National Environmental Policy Act (NEPA) compliance [sic]

See PRC-PRO-PM-25000, *Project Execution Plan.* Neither the draft nor final PEP adopted by the 100K IUUP meet the requirements specified in the preceding paragraphs. Furthermore,

[13] The functional design criteria document for the 100K IUUP was not adopted and effective until April 19, 2010 at which time construction had already started. *See* PRC-EDC- 10- 45986.

inaccuracies contained in the tables at the end of the 100K IUUP PEP are misleading. The PEP tables indicate no drinking water permits or approvals were needed, which was incorrect. The January 2010 version tables also state that NEPA clearance had been obtained, when in fact the clearance was not secured until May 26, 2010.

While FES design and construction documentation included a schedule for obtaining WDOH approval of the drinking water system, they made no provisions for obtaining required NEPA clearances.[14] It is unclear when provisions for obtaining WDOH approval were first included in the FES documentation; however it is clear that such provisions were present as of January 7, 2010. The schedule for completing these activities to support a May start of construction, as they appear in the January FES were unreasonably short and unachievable. Given the time allocated to WDOH to perform documentation reviews, address comments exchanged between the State and the permit applicant, and for the State to issue construction approvals, a process that can require at least 60 days or more, the Projects proposed submission of its application on March 9, 2010 and its expectation of obtaining required approvals by April 5, 2010 was unreasonable. It should also be noted that the same January FES scheduling submission of an application for approval to WDOH on March 9, 2010, also schedules start of construction of drinking water system components on January 29, 2010, more than a full month before even making the application for approval.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F05

CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.

Requirement(s):

1. CRD 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B requires that fire protection for DOE facilities will "meet or exceed applicable building codes for the region and National Fire Protection Association (NFPA) codes and standards." Section D.2 requires contractors to use DOE-STD-1066-99, Fire Protection Design Criteria. Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter.

2. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter - New projects and facility design, construction and modifications involving fire alarm systems, fire suppression, or water supplies shall be designed in accordance with this Handbook. Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation.

[14] While provision were made to perform work necessary to obtain Cultural Resources Reviews which are a prerequisite to obtain NEPA clearances, no provision was made for activities necessary to actually obtain the NEPA clearances.

3. DOE-STD-1066-99, *Fire Protection Design Criteria* – New project and facility design, construction and modifications shall comply with this Standard. All references to the word "should" in this Standard will be interpreted as a "shall" as required by SCRD 420.1B.

Discussion:

The fire sprinkler system design (drawings and calculations) for the Potable Water Treatment Facility was not approved by a Deputy Fire Marshal (DFM) before the system was installed as required by CRD 420.1B. During construction of the 100K IUUP, K-Basins was assigned a resident DFM who held delegated review and approval authority from the Hanford Fire Marshal's Office (HFMO). However, the CHPRC contracted with a private fire protection engineer (FPE) for a review and approval of design drawings. This contract FPE had no delegated approval authority from the HFMO. Drawings were reviewed by the contract engineer and comments returned to ARES Engineering, the company that produced the design. Installation began prior to any approval of the design by either the DFM or HFMO. Approval of the fire protection system designs by the DFM prior to construction is a contract requirement.

During personal interviews, the Assessment Team was told that the 100K IUUP Director was verbally informed by the 100K DFM in April 2010, that the design for the Fire Protection System as developed by ARES Engineering was defective and would not comply with applicable code requirements if constructed as designed. This statement is supported by entries in a Review Comment Record (RCR) generated in October 2009 that documents sixty defects. *See* Exhibit 59. Although the 100K DFM informed 100K IUUP management of the system design defects, and that it was necessary to correct the defects and obtain HFMO approval before commencing construction, construction commenced without that approval.

After participating in an inspection tour, the DFM immediately submitted the following item into the CHPRC Corrective Action System:

> On Tuesday, August 24th, 2010, the 100K Fire Protection Engineer (Deputy Fire Marshal) was notified by facilities operations personnel that the scope of work for the day for the 100K new water treatment facility was to include installation of the fire suppression system. The design for this system has significant comments still outstanding from 100K Fire Protection Engineering, and has not been reviewed and approved by the Fire Marshal's Office. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes. HNF-36174, DOE Fire Protection Handbook – Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the

> Hanford Fire Marshal's Office. The [Engineering Projects and Construction] EPC construction manager was notified that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. The EPC construction manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the Fire Marshal's Office.

See Exhibit 60. Work continued at the 100K IUUP without resolution of this Condition Report.

On 9/28/2010 100K Senior Management issued a Field Stop Work order on the 100K Fire Suppression System Upgrade pending a comprehensive design document review and approval (CR-2010-3049). At that time, CR 2010-2597, written by the DFM, was screened out and rolled over to CR-2010-3049. An Apparent Cause Analysis was performed as a result of the Field Stop Work. Four of the corrective actions identified in the Apparent Cause Analysis were related to the clarification of the authority of the HFMO and interface with CHPRC. The causal analysis did not identify that the CHPRC is required by contract to have a Memorandum of Understanding with the HFMO identifying its authority, responsibilities, and duties. *See* Finding S-11-EMD-PRC-001-F15.

On October 13, 2010 a walk down of the 100-K Potable Water Treatment Facility was performed by the RL FPE to review fire protection and life safety features and was recorded in Operational Awareness Entry 33896. The following information was documented in the OA:

> Interviews were conducted with Fire Protection Engineers involved with the project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft. Some of the RCR review comments provided by the FPEs have still not been incorporated over one year later, yet RCR comments were dispositioned as "Comments Accepted." Portions of the fire alarm system (initiating devices and conduit) were also installed prior to any review of the system design by project fire protection engineering or the Fire Marshal's Office. A final (as-built) design package has not been issued by the Project to date. Therefore, the Project has not received approval for the design as installed. This is also in violation of HNF-36174, DOE Fire Protection Handbook, which requires that as-built drawings be approved by the HFMO prior to acceptance of the system.

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system have been installed on the job without prior approval of the HFMO or an authorized DFM. This is in violation of the CHPRC Fire Protection Program. MSC-RD-9118, Fire Protection Design/Operations Criteria, section 2.1.1 states:

> Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F06

The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

Requirement(s):

1. DOE-0342, Rev 2, *Stop Work*, Effective January 18, 2010

Discussion:

On September 28, 2010 CHPRC senior management issued a Stop Work on the 100K Fire Suppression System Upgrade activities pending a comprehensive design document review and approval. On September 29, 2010 a CHPRC Condition Report, number CR-2010-3049, was issued and screened at an Adverse Significance Level to initiate and document the investigation and corrective actions. This Condition Report, replaced a previous Condition Report, CR-2010-2597, which had been "screened out" at the request of the responsible manager as stated in that report:

> Significance Level Justification: Sent back from Assignment by . . . Responsible Manager. Please screen out this CR to CR-2010-3049. Although submitted a month apart both CRs represent the exact same condition and screened at the same level as adverse.
>
> This condition was rescreened from an adverse condition to a screen out at the request of the responsible manager per above Justification. CR-2010-3049 is screened adverse will document the apparent cause analysis and corrective actions to address the condition.

The first Condition Report, CR-2010-2597, was initiated on August 24, 2010 by the CHPRC 100K Area FPE and included and identified four "Requirements Not Met." *See* Exhibit 60 for details. However, the replacement Condition Report, CR-2010-3049, identified the

"Requirements Not Met" as "N/A." No explanation was stated why the requirements identified in the earlier Condition Report, CR-2010-2597, were not included in the replacement Condition Report, CR-2010-3049. *See* Exhibit 61. The replacement Condition Report admits that a design document review should have been done prior to start of construction. *See* Exhibit 61, "Significant Level Justification" section.

When examined on March 11, 2011, CR-2010-3049 contained a list of "Associated Files" including the D&D Project "Apparent Cause Analysis 100K Fire Suppression Stop Work." (File: 100kFireSuppressionStopWorkACA.pdf). The fifth full paragraph of page 2 of 3 of that document states: "Closure of the Corrective Actions outlined in CR-2010-3049 is required to lift the Stop Work and resume work on the Fire Suppression System Upgrade Project."

The list of "Recommended Corrective Action Items" is then enumerated. Item 2 states:

> Obtain clarification on the authority of the Deputy Fire Marshal role. MSA currently has draft document in DOE-RL for review and Approval – Mike Koch, 1/31/2010.

The Apparent Cause Analysis is signed and dated by a D&D Technical Support and the 100K IUUP Project Manager on November 10, 2010.

On January 31, 2011 D&D Engineering, sent an email to CHPRC Corrective Action Management requesting an extension of the due date for Item 2 noted above to April 27, 2011. On February 2, 2011 a D&D Project Sr. Operations Specialist then wrote an email on behalf of the 100K IUUP Project Manager to CHPRC Corrective Action Management approving the April 27, 2011 extension date for CR-2010-3049 correction action Item 2. See CA-2-Extension.pdf in CR-2010-3049 Associated Files.[15]

It is noteworthy that no actual written Stop Work Order is listed among the "Associated Files" in the CR-2010-3049 Condition Report. However, the Apparent Cause Analysis noted above states:

> After additional discussions the 100K Areas Senior Management extended the Stop Work to cover the Fire Suppression System Upgrade project pending a comprehensive Design Document review and approval. The extended Stop Work superseded the earlier Stop Work and was documented in CR-2010-3049.

See 100K FireSuppressionStopWorkACA.pdf second full paragraph of page 2 of 3.

The Apparent Cause Analysis contains no section that allows any work to be restarted before the completion of all the corrective action items. This is consistent with DOE-0343 Stop Work

[15] The question of the Fire Marshal's role in approving designs prior to construction is an overarching question that should have been resolved promptly. Construction activities on most of the components of this project resumed without resolving this corrective action.

which applies to all Hanford contractor and subcontractor employees and can be accessed on the CHPRC Home Page on the Hanford Site Intranet and states, in relevant part:

> Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented* in accordance with Contractor procedures (logbook or other established method of reporting/tracking/communicating safety issues and corrective action management). *NOTE: For resumption of radiological work, consult the Radiological Control Manual for additional approval requirement."

See DOE-0343 Stop Work Revision 2 Effective Date: January 18, 2010 page 3 of 6 third paragraph.

Work was restarted on this Project in October 2010. This restart of work was conducted prior to completion of the CR-2010-3049 D&D Project 100K Fire Suppression Stop Work Apparent Cause Analysis which evidently is the only written documentation of the terms and conditions of the Stop Work Order issued September 28, 2010.

RL Lead Assessor Closure Required: YES [x] NO [ ]

Finding: S-11-EMD-PRC-001-F07

The design review process applied to the 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.

Requirement(s):

1. CRD 420.1B (Supplemented Rev. 4), *Facility Safety*, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter.

2. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter requires that drawings for fire alarm systems, fire suppression systems, and water supplies must be approved by the HFMO prior to installation.

3. *100K MinSafe Administrative Procedure*, FP-4-014, Fire Protection Program, Section 1.1 states that: "this procedure applies to 100K Area facilities, including new project design and construction, modification, alteration, and demolition of 100K Area facilities. It also applies to operations performed within the 100K Area by the CHPRC D&D Project and other organizations." Section 3.14 states: "all construction, including modification of existing facilities, shall be in accordance with the requirements of MSC RD 9717, DOE-STD-1066, CRD 420.1B, HNF-36174, and applicable NFPA Codes and Standards."

4. *CH2M Hill Requirements Applicability Matrix* states: ". . . the following Requirements Applicability Matrix Reports (RAM) are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, etc) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The RAM lists MSC-RD-9118, Fire Protection Design/Operations Criteria as satisfying the categories of 29 CFR 1910, *Occupational Safety and Health Standards*, and CRD O 420.1B Supplemented, Rev 4, *Facility Safety*. The RAM lists MSC-RD-10606, *Fire Protection Program Requirements* as satisfying the categories of 29 CFR 1910, *Occupational Safety and Health Standards*, CRD M 231.1-1A, *Environmental, Safety, and Health Reporting Manual*, and CRD O 420.1B Supplemented, Rev 4, *Facility Safety*.

5. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.1 states: "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, ***shall be approved and permitted*** by the HMFO prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits." [***Emphasis added***]

6. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.4 states: " . . . [The Hanford Fire Marshal (HFM)], who shall be a member of the . . . [Hanford Fire Department (HFD)], shall have the authority to develop, administer and enforce the Fire Prevention Program for the . . . [Mission Support Contractor (MSC)] as directed by SCRD O 420.1B, Rev. 4, *Facility Safety*, and by RL approval of the HFM's Charter, which establishes the authority, responsibilities and duties of the HFM. The HFM's authority shall extend to all work performed under or on behalf of MSC. RL will support the HFM in enforcement of the codes and standards and execution of the HFM's duties as described below . . . . Section 2.4.2 states: "To support the development, administration and enforcement of the Fire Prevention Program the duties of the HFM shall include but not be limited to: Review and approval of new fire protection system designs and modifications/ upgrades to existing fire protection systems per MSC-PRO-8635, Review and Approval of Technical Documents."

7. DOE O 414.1C, *Quality Assurance*, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc." Section 3.g. paragraph (1) states: "Procure items and services that meet established requirements and perform as specified."

Discussion:

The CHPRC did not follow the procedural requirements identified in DOE requirements, and in MSC-RD-9118 which requires that "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, *Life Safety*

Code, shall be approved by the HFMO prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits." The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system were installed on the job without prior approval of the HFMO or HFMO representative. DOE O 414.1C, *Quality Assurance*, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

On August 24, 2010, the CHPRC 100K FPE was notified by facilities operations personnel that the scope of work for the day for the 100K new Potable Water Treatment Facility was to include installation of the fire suppression system. The design for this system had significant comments still outstanding from 100K Fire Protection Engineering, and had not been reviewed and approved by the HFMO. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes. As a result, Condition Report CR-2010-2597 was generated on August 24, 2010, by the CHPRC 100K FPE.

CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the *DOE Fire Protection Handbook*, Hanford Chapter. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter, requires that drawings for fire alarm systems, fire suppression systems, and water supplies, must be approved by the HFMO prior to installation. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the HFMO.

The 100K IUUP Project Manager was notified on 8/24/2010, by the 100K FPE/DFM (CR-2010-2597), that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. At that time, the 100K IUUP Project Manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the HFMO.

The CHPRC also procured fire protection equipment and had it installed prior to completion and approval of the associated design. The RL Electrical SME and the RL Fire Protection SME obtained a copy of Contract #36534-31 Statement of Work (SOW) for the K-Basin/ARRA Potable Water Treatment Facility project, dated 4/7/10, and observed within section 3.1.5 paragraph D that the construction Contractor (George A. Grant Inc.) was directed to install "the Buyer (CHPRC) provided diesel power fire pump, jockey pump, fire pump controller, and the fire alarm control panel." This equipment was procured on 7/14/10 (based upon the vendor's certificate of compliance submittal). However this procurement was completed before the associated design was completed and approved. The fire pump installation drawings were not approved by the HFMO until 1/18/2011 (100K Water Treatment Project Status Report January 25, 2011). If CHPRC ARRA Project management and staff had procured the mentioned equipment after the design was completed and approved, they would not have needed to procure and install the jockey pump. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter,

requires that drawings for fire alarm systems, fire suppression systems, and water supplies, must be approved by the HFMO prior to installation.

A tour of the new 100K Potable Water Treatment Facility was conducted on September 1, 2010, by representatives from a DOE GSSC support contractor (PAI Corp.) and CHPRC Fire Protection Engineering (OA 32906). The Potable Water Treatment Facility was designed to provide several fire areas in the building rated at one and two hours, but no fire barrier designs had been submitted by the Project for approval by the HFMO. Not all interior walls extended to the roof level of the building and several rooms had suspended ceilings. At that time work was progressing on installing a two hour fire rated suspended ceiling in the electrical room. The submitted, but not yet approved, sprinkler drawings showed only sprinklers at roof level. Without the approval of the CHPRC FPE, sprinkler installation had started. When this was discovered, the work was halted and the CR was generated. The installation included sprinkler drops into suspended ceiling areas, but these were not in accordance with design drawings.

The building sprinkler riser had been installed on an inside wall in the pump room and was fed directly from the fire pump with no control valve, contrary to NFPA requirements. The CHPRC FPE/DFM required that it be moved to an outside wall and that a wall control valve be installed for isolating the system without turning off the pump or entering the building. The fire pump skid had also been delivered to the pump room, but the design for the fire pump and piping had not been approved by the DFM.

A significant amount of work was proceeding without review and approval of the DFM. Under Requirements Not Met in the CR-2010-2597 it stated:

> CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter. HNF-36174, DOE Fire Protection Handbook – Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the HFMO prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the HFMO.

It is noted that prior to the discovery of these problems on the 100K Potable Water Treatment Facility, DOE-RL had released their Assessment of the CHPRC Fire Protection Program, S-10-SED-PRC-023, on 8/19/2010. This assessment included the following concern: "Concern A-1O-SED-PRC-023-CO1 - CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated FPP requirements. The CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." It was clear that CHPRC still had not integrated or implemented fire protection requirements.

Questions were raised on September 22, 2010. The, fire pump and piping was in the process of being installed, but the fire pump system controller was not, nor had any review data been submitted for approval by the HFMO. The fire pump piping drawings had reportedly been sent by CHPRC back to ARES for revision and had not been approved through the HFMO. Some piping and the fire pump/driver skid had reportedly been installed with "verbal" approval. The fire pump/diesel driver skid had been bolted and concrete filled. It could not be determined at that time if that was done in accordance with the manufacturer's approved/listed requirements and specifications.

At this same time, concerns were raised on the fire wall construction as to what UL listed design was being used, overlap of joints, fastener spacing, a wall ventilation louver that did not have a fire rated damper, etc. Electrical and piping installation and equipment setting were still ongoing in the Potable Water Treatment Facility, with power supply to the building planned for later that week. The Chemical Storage Room was still being worked on to complete fire walls, fire damper replacement, and sample tubes penetrations protection. For the Electrical Room the fire walls still need to be extended to the roof and an approved wall/roof membrane interface detail still needed to be resolved.

The fire alarm system was still in the submittal/review stage. Some conduit and boxes were installed at an earlier date but this work was stopped to get approvals. A fire alarm panel was submitted that did not meet specifications (a FireLite-4 zone was specified), was undersized by the design, and was not a Hanford Site standard panel that maintenance and testing forces are trained on. A new submittal and approval was being processed to increase the size of this panel and resolve this issue. Once again there was no installation permit for the fire alarm system and one had to be created after work had already commenced (HFM Permit Number 2010-860 of December 16, 2010).

Filling and hydro-testing of the new 750,000 gallon water tank was reported to be complete, and final insulation of the tank roof was in progress. Pressure testing of the fire line loop around 105KW was reported to be complete. The fire water distribution piping off the South East corner near CVDF (142K) was in place, but the project changed a section of 12 inch distributions system to 8 inch. This is contrary to the requirements of DOE O 420.1B, Supplemented, rev. 4, Section B.7.a, which states, "Distribution mains, either sanitary or raw water, that are being extended to supply water for domestic and/or process water and will provide water for fire suppression systems (sprinklers and/or hydrants), shall be at least 12 inches in diameter." The project did not request relief from this contract requirement until after the piping was installed.

The continuing project goal at that time was to have all review, approval, installation, and acceptance testing for the Project completed by the end of September. Considering the large number of continuing unresolved issues, that did not happen.

On October 13, 2010 another walk down of the 100-K Potable Water Treatment Facility was performed to review fire protection and life safety features. The walk down was attended by several individuals including, the field work supervisor, the K-Basin FPE /DFM, CHPRC Fire Protection Program Manager, contract FPE supporting K-Basin, FPE supporting the HFMO, RL Electrical Subject Matter Expert (SME), and the RL FPE. The 100-K IUUP Project Director

joined the tour in progress. At that point, the fire sprinkler system had been installed. Some components of the fire alarm/notification system (back plates for notification appliances and conduit) had also been installed. The fire pump and piping were in place. For the most part the fire pump piping was complete with the exception of a few segments of piping that was missing. Internal fire barriers had also been partially constructed; existing construction of the fire rated walls did not connect with the unrated roof assembly and barrier penetrations were not properly sealed.

Interviews were conducted with FPEs involved with the Project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft, even though full submittals had been requested of the Project. Some of the RCR review comments provided by the FPEs had still not been incorporated over one year later, yet RCR comments were dispositioned by the Project as "Comments Accepted." Final review packages for the fire alarm and fire sprinkler systems had not been reviewed by the FPEs, yet the systems were installed in the building. A final design package, requesting 100% design review, had never been issued by the Project to date. Therefore, the Project had not received approval for the final design.

The FPEs involved with the 100K IUUP have concluded that the individual(s) designing the Potable Water Treatment Facility fire protection systems working for outside firms, such as ARES Corporation, were not technically qualified in the fire protection field. Although the drawings submitted were stamped by a Washington State Licensed Engineer, the drawings contained a variety of defective specifications that if built would result in code violations.

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system had been installed on the job without prior approval of the HFMO or DFM. This is in violation of the CHPRC Fire Protection Program. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, section 2.1.1 which states: "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the HFMO prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits." These systems had been installed without the required approvals. When the 100K IUUP Project Director was asked why the systems were installed without approval from the HFMO, he stated that "those procedures don't apply to me, those are MSC procedures." When explained that the MSC Fire Protection Program and Procedures were adopted and endorsed by the CHPRC as their Fire Protection Program as identified in the CHPRC Requirements Applicability Matrix he stated, "I don't care, they still don't apply to me."

Work on installation of fire protection systems, including fire barriers was then shut down by CHPRC upper management. The Project then hired Hughes and Associates, a fire protection consulting firm, who sent several FPEs to sift through the documentation and look over what had been installed to determine the path forward to obtain code compliance and to assist in completing the design of the Project. A final design had not been completed so that a 100% design review package could be submitted to the AHJ for review and approval.

As of the end of December 2010 the following 100K IUUP items were still open for either issues resolution, design modification, review completion, and/or approvals: fire barriers, fire pump re-design, fire pump room ventilation design, three water distribution system ICRs, water distribution system design modifications, and the water supply cross-over.

RL Lead Assessor Closure Required: YES [x] NO [ ]

Finding: S-11-EMD-PRC-001-F08

Construction Permits were not obtained from the Hanford Fire Marshall's Office by the 100K IUUP prior to commencing construction.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev 4), *Facility Safety*, Section D (8) states: "Conditions, operations, or materials hazardous to life or property pursuant to the Uniform Fire Code, Section 1.12, shall be permitted through the Hanford Fire Marshal Permit System."

2. *100K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program*, Section 3.18 states that, "Several actions/activities require the development and approval of a HFM Permit prior to initiation of the action/activity. These actions/activities include:

- facility construction/demolition
- placement of relocatable structures
- transport and use of explosives
- use, handling, or storage of hazardous materials in excess of defined limits
- operation or storage of fossil-fueled vehicles inside any building not designed for such use, except as authorized by the facility FHA
- new or modified facility occupancy
- outdoor burning
- placement and use of electric heaters in excess of 1500 watts
- placement and use of fuel-fired heaters
- placement and use of portable generators
- blockage of roads
- facility egress modification
- utility outages
- fire protection system (including fire hydrant) installation or deactivation

3. *CH2M Hill Requirements Applicability Matrix states:* " . . . the following RAM Reports are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, . . .) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated

company level procedure data from Docs Online." The applicability matrix lists MSC-RD-8589, Hanford Fire Marshal Permits under both 10 CFR 830 Nuclear Safety, and CRD O 420.1B Supplemented, Rev 4, Facility Safety.

4. MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities*, Section 2.1.2 states: "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, *Hanford Fire Marshal Permits*, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD, (initiated through a Hanford Fire Department Contractor Pre-Incident Plan Request Form, (A-6003-387) are submitted to the HFM prior to engaging in activities or processes governed by the forms (Ref: MSC-PRO-24889, Project Initiation and Execution, Appendix A Section 8.2)."

Discussion:

The CHPRC 100K IUUP Organization did not follow contractual requirements identified in CRD O 420.1B, (Supplement Rev. 4), and CHPRC procedures identified in MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities* and MSC-RD-9118, *Fire Protection Design/Operations Criteria.*

Construction permits allowing the construction of the Potable Water Treatment Facility (HFM Permit No. 2010-852) and the 100K Fire Water and Potable Water Distribution System (HFM Permit No. 2010-853) were not obtained until December 16, 2010 (long after construction was complete). Additionally, the fire sprinkler system construction permit (2010-861) and fire alarm system construction permit (2010-860) were obtained on December 16, 2010, after the systems had been installed.

MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.1 states: "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, *Life Safety Code*, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, *Hanford Fire Marshal Permits*."

MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities,* section 2.1.2 which states that, "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, *Hanford Fire Marshal Permits*, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD are submitted to the HFM prior to engaging in activities or processes governed by the forms."

Additionally, section 2.1.3 that states that, "The construction manager, as part of the hazards communication effort, shall complete a *HFD Construction/Demolition Fire Safety Inspection Checklist* prior to the commencement of construction or demolition activities with the assistance from the Fire Protection Engineer (FPE) and perform follow-up inspections at a frequency determined by the FPE.

The contractor/project did not obtain a Construction Permit, issued by the HFMO, prior to engaging in activities and processes governed by the permit. Additionally, a HFD

Construction/Demolition Fire Safety Inspection Checklist was not completed, to ensure that the requirements of MS-CRD-9717 were being implemented.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F09

The CHPRC 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B.7.b.3 states: "Underground distribution systems for fire protection water supplies shall be of the looped grid type arranged with two-way flow and sectional valving to provide alternate flow paths from the source to any point in the distribution system for nuclear facilities and buildings or groups of buildings with an MPFL exceeding $15 million. The looped grid shall be provided with a second independent source of water supply for Category 2 Nuclear Facilities or where the MPFL exceeds $50 million. Application of this requirement to existing facilities will be made on a case-by-case basis after consultation with the RL AHJ."

2. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B.7 a states: "Distribution mains, either sanitary or raw water, that are being extended to supply water for domestic and/or process water and will provide water for fire suppression systems (sprinklers and/or hydrants), shall be at least 12 inches in diameter. Sectional valves shall be installed in the following manner for new installations and water distribution main upgrades."

3. DOE O 414.1C, *Quality Assurance*, Attachment 2 (Contractor Requirements Document), Section 3.e (1) states: the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

Discussion:

The CHPRC 100K IUUP installed water utility piping prior to applying for and receiving approved exemptions and equivalencies from RL. After installation of the water distribution system, the CHPRC requested an exemption request for the lack of a looped water distribution system for the 105-KE building, and an equivalency request for the substitution of an 8 inch water main in lieu of the required 12 inch water main.

A looped fire water distribution main was required to be installed around the 105KE reactor building in accordance with PRC Section J, Attachment J.2, Contractor Requirements Document Order 420.1B, Facility Safety, Supplemented Revision 4, Section B, Item 7.b.3 which states:

> Underground distribution systems for fire protection water supplies shall be of the looped grid type arranged with two-way flow and sectional valving to provide alternate flow paths from the source to any point in the distribution system for nuclear facilities and buildings or groups of buildings with an MPFL exceeding $15 million. The looped grid shall be provided with a second independent source of water supply for Category 2 Nuclear Facilities or where MPFL exceeds $50 million. Application of this requirement to existing facilities will be made on a case-by-case basis after consultation with the RL AHL.

The newly installed 100-K water distribution system did not provide a looped supply main around the 100-K area, nor did it provide a loop around the 105KE reactor building. The 12 inch diameter supply terminates (dead ends) south of the 105KE reactor building. The new 105KE supply provides water to two new fire hydrants south of the 105KE reactor building, and one new fire hydrant east of the 105KE reactor building. An equivalency exemption was requested by the contractor (letter CHPRC-1100455) due to the difficulty of co-coordinating with the extensive soil excavation and remediation commitments in the areas around the 105KE reactor building, and areas further west toward the 105KW building.

Additionally, the original water loop design requirements called for twelve inch fire water mains in the 100K Area new water distribution system. CHPRC made a unilateral decision during installation of the water main piping to change the twelve inch loop around the 105KW to eight inch pipe. However, the equivalency request for relief from contractual requirements was not submitted to RL until after the piping had been installed. *See* letter CHPRC-1101317.

A 12 inch diameter distribution main is required to be installed in accordance with PRC Section J, Attachment J.2, Contractor Requirements Document Order 420.1B, *Facility Safety*, Supplemented, Rev. 4 (SCRD). Section B.7.a of the SCRD states that:

> Distribution mains, either sanitary or raw water, that are being extended to supply water for domestic and/or process water and will provide water for fire suppression systems (sprinklers and/or hydrants), shall be at least 12 inches in diameter.

The 8 inch fire water distribution lines that were substituted around 105KW supply water to a fire suppression system, fire hydrants, feed the 105KW de-mineralized water system, and provide water to two controlled water fill stations located at the southwest and southeast corners of the 100K Area. The project installed 8 inch diameter mains to avoid the cost of installation and materials that would otherwise have been expended for a 12 inch diameter main.

Final connections to the new fire water distribution system were performed at CVDF on 2/5/2011 and 105KW on 2/19/2011 completing the water distribution system installation. The non-looped water distribution exemption request was submitted to RL on February 28, 2011 (letter CHPRC-1100455). The 8 inch to 12 inch equivalency request was submitted on March 10, 2011 (letter CHPRC-1101317). In both cases, the exemption and equivalency requests were sent in by the contractor after the installation of non-compliant components.

RL Lead Assessor Closure Required: YES [x] NO [ ]

Finding: S-11-EMD-PRC-001-F10

The CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer /Deputy Fire Marshal.

Requirement(s):

1. CRD O 420.1B, Chapter II, Facility Safety, Section 3.a.3 states: "Fire protection for DOE facilities, sites, activities, design, and construction must meet or exceed applicable building codes for the region and NFPA Codes and Standards."

2. CRD O 420.1B (Supplemented Rev. 4), Facility Safety, Section D.5 states: "Fire rated assemblies shall be installed, as required by DOE-STD-1066-99, the fire hazard analysis, NFPA or building code to reduce loss potentials."

3. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11 states: "Documents for new designs and modifications to existing facilities affecting fire protection or fire code compliance must be reviewed and approved by the Hanford Fire Marshal's (HFM) Office in accordance with MSC-PRO-8635, Review and Approval of Technical Documents, or equivalent requirements implemented by other contractors."

Discussion:

The first design submittal received by the 100K IUUP addressing the Potable Water Treatment Facility related to the building structure was submittal 36534-031 Sub 13125-03, sent from WHPacific, Anchorage, AK, on April 21, 2010. The correspondence stated that, "the Architect stamp will be added after initial review and comments has been incorporated." The submittal was reviewed by the 100K IUUP Project Engineer and the Buyers Technical Representative on May 4, 2010. No fire protection review was performed of this submittal.

The second design submittal, 36534-031 Sub 13125-02, was received on September 2, 2010; over four months after Project construction had begun. *See* Exhibit 62. The Project Engineer forwarded the submittal on to the PFP Fire Systems Engineer for review along with the K-Basin DFM. The PFP Fire Systems Engineer responded with his observations of the buildings physical

condition based on a walk down of the site, and clearly documented that building construction was well under way prior to seeking DFM approval. At this point in time, neither the PFP Fire Systems Engineer nor K-Basin DFM granted any approvals, but did make comment on several design deficiencies. While the CHPRC Contract requires obtaining HFM or DFM approval of designs prior to commencing construction, written DFM approval of the design was not actually granted until December 2010 at which point construction was nearly complete.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F11

CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.

Requirement(s):

10 CFR 830 requires identification and analysis of USQs prior to construction of new, or modification of new nuclear facilities. More specifically the regulations require:

> The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must establish, implement, and take actions consistent with a USQ process that meets the requirements of this section [and]. . . [t]he contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must implement the DOE approved USQ procedure in situations where there is a: (1) Temporary or permanent change in the facility as described in the existing documented safety analysis;(2) Temporary or permanent change in the procedures as described in the existing documented safety analysis;(3) Test or experiment not described in the existing documented safety analysis; or (4) Potential inadequacy of the documented safety analysis because the analysis potentially may not be bounding or may be otherwise inadequate.

Furthermore,

> If a contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility discovers or is made aware of a potential inadequacy of the documented safety analysis, it must:
> (1) Take action, as appropriate, to place or maintain the facility in a safe condition until an evaluation of the safety of the situation is completed;(2) Notify DOE of the situation;(3) Perform a USQ determination and notify DOE promptly of the results . . . .

See 10 CFR 830.203.

Discussion:

The nuclear safety aspects of the replacement water supply and fire suppression water distribution system were reviewed. There is considerable confusion in this area. While CHPRC staff and management are adamant that all revisions were properly reviewed, their responses were sometimes contradictory. Most nuclear safety issues have been resolved, but a few issues remain. This team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review.

The primary nuclear safety issue is: Can the new system provide excessive water, such that any leaked water could enter K West Basin and cause an overflow? The K Basin FSAR Section 3.4.2.9 "Overflow of Radioactive Water from 105-KW Basin" addresses an accident characterized as an operational spill event with a frequency of unlikely. A pipe break in a 105-KW Basin building or an operating mistake can cause an overflow of the fuel storage basin water, with possible release of radioactivity to the environment. The maximum size water inlet line in the basin area (8 in.) is assumed to fail. The replacement water supply adds new water supply lines which may create the potential for higher water flow if a line breaks.

These issues should have been addressed through the USQ process. RL staff reviewed the USQ logs and found no evidence that these issues were addressed. Further, the CHPRC nuclear safety staff stated that no USQ screenings or evaluations address these issues. Since being informed of the issue, CHPRC has not provided evidence of entering the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203 (g).

The Assessment Team raised a second USQ question in that it remains unclear whether there was an adequate USQ evaluation covering the design change reducing the system from providing "a twelve inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW" to tying into the existing eight inch loop around Building 142-K (CVDF), and use of a new 8 inch loop around 105-K West.

RL staff reviewed the USQ logs and found no evidence that the revision was addressed. In the course of this surveillance, CHPRC nuclear safety staff and management were asked "which USQ screening or evaluation is CHPRC relying on to support the change from 12 inch fire supply lines to 8 inch lines?" CHPRC staff responded that they were relying upon USQ-0025-2011. USQ-0025-2011 states that it reviewed DCN-KUP-073, which "modifies the fire line routing on the east side of CVDF and adds a fire hydrant south of 105-KW. The proposed revision does not conflict with the water system upgrade in Section 2.9.1.7 of the FSAR."

However, the proposed revision does conflict with requirements of the FSAR, which states:

> The planned system will provide a new water supply for the 100K Area . . . . The planned fire suppression water distribution system

> will **provide a 12 inch fire main throughout the 100K Area,** with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW. Existing piping exterior to Building 105-KW will be replaced with a new loop, providing six new fire hydrants and the water supply to the Building 105-KW administrative area automatic sprinkler system. A single 12 inch fire main will serve facilities in the central corridor (1724-K, MO-500, and hydrants in the central corridor) and on the east side of the 100K Area (MO-293, and hydrants on the east side, including hydrants in the vicinity of Building 105-KE). Normal system pressure will be maintained by new service water pumps, which will be sized and controlled to maintain system pressure at a level comparable to that provided by the existing system (approximately 120 psi)."

Facility Safety Analysis Report, Sec. 2.9.1.7 (**Emphasis added**).

USQ-0025-2011 addresses the fire line routing, but does not address the revision from 12 inch fire mains and loops to 12 inch mains and 8 inch loops. Therefore, there does not appear to be a USQ evaluation which covers the reduction from providing "a 12 inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW" to tying into the existing 8 inch loop around Building 142-K (CVDF).

DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

CHPRC did calculate that the revision would still provide adequate water supply to CVDF (DD-47929, Revision 0, and dated 12/27/2010). The calculation was USQ screened 10/20/2010. Thus the USQ Screen 0245-2010, which specifies calculation DD-47929, Revision 0, was performed 2 months before the date of the document it screened against. This conflict in dates remains unresolved. Therefore, this team cannot determine what was reviewed in the USQ screening. *See* Exhibit 58.

Both DD-47929 and USQ screen 1245-2010 were performed before the revision was tied in to the existing 8 inch water loop, therefore the USQ process was followed, but the adequacy of this process is in question because USQ Screen 0245-2010 relied upon a calculation which had not been done.[16] Resolution of these issues merits further inquiry, and that inquiry is recommended.

[16] Work packages examined during the course of this Surveillance establish that CHPRC originally intended to connect the new fire water system components to the old fire suppression system on September 28, 2010. At that point in time no USQ had been performed. The planned connections were not made when CHPRC executive management issued, at the request of a Project Fire Protection Engineer, a Stop Work order to facilitate addressing other problems affecting the reliability of the fire water delivery system. All indications are that absent this unrelated Stop Work order, the new components would have been connected to the old system without first performing a required USQ analysis.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F12

CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Requirements:

1. CRD O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*
2. CRD O 414.1C, *Quality Assurance*
3. PRC-PRO-PM-24889, *Project Initiation and Execution*, Section 5.8 and 6.1
4. PRC-PRO-PM-25000, *Project Execution Plans*
5. PRC-PRO-CN-14990 *Construction Management* Section 3.3.3.1 and 3.3.3.2
6. PRC-MP-CN-28049 *Construction Procedure Manual* Section 3.12
7. PRC-GD-WKM-12116 *Work Planning Guide* Figure 1

Discussion:

The 100K IUUP began construction activities without a required PEP. The Project continued on with construction for over three months before a final PEP was released. By that time substantial construction on both the water treatment system and the fire water system had occurred, and design for the fire water system was known to contain defects. The lack of a PEP was documented in an independent assessment conducted by the CHPRC Performance Oversight organization.

On April 14, 2010 the CHPRC Manager of Performance Oversight sent the *Final Report, Independent Assessment Of Engineering, Projects And Construction, CHPRC-PO-IA-10-02* to the CHPRC Vice President of Engineering, Projects, and Construction (EPC). This performance based independent assessment was conducted to evaluate EPC's implementation of programs, procedures, and policies as they relate to conduct of work. The assessment focused on the adequacy, compliance, and in-field execution of work activities and processes. The assessment made a number of findings including:

> 100K Utilities Upgrade Project PEP was in continuous revision without issuance of a controlled document. This practice was out

> of compliance with PRC-PRO-PM-25000, Project Execution Plans, Rev 1, Chg 0.

See Exhibit 51.

The assessment also included a finding regarding another CHPRC project operating with an outdated PEP and stated, "The PEP was to be updated as changes occurred and at a minimum prior to the start of each phase of project execution as required by PRO-PM-24899, Project, Section 5,8 and PRC-PRO-PM-25000, Section 3.2." This finding was also applicable to the 100K IUUP as it continually changed without the benefit of a final PEP, or any updates as the project evolved. *Id.*

As a result of the assessment a CHPRC Condition Report Form was generated. This report assigned a significance level of "Track Until Fixed" to this item. The explanation for this level is stated as:

> This condition is screened as a Track Until Fixed (TUF).
>
> The stated condition documents a non compliance with the requirements of PRC-PRO-PM-24889. The CR ***does not document where the subject condition has resulted in an adverse effect upon the project.*** However, actions will need to be taken to correct the documented deficiencies. The screening level as a TUF is assigned to this CR which will require that a cause be identified and documented. This CR will also document the actions taken to address the subject condition.

See Exhibit 52 ***(Emphasis added)***.

The condition report written on April 13, 2010 and Action #3 addresses the IUUP PEP. On June 30, 2010 the action item assignee wrote an email message addressed to the CHPRC Corrective Action Management. This email requested an extension for completion of the PEP and states:

> Please extend the above action due date to 7/22/2010 due to competing priorities and resource unavailability. The proper resources have now been applied and the action will be completed by the new due date.

See Exhibit 53.

The PEP was finally released on July 29, 2010. The document is signed by the Responsible Manager and the Information Owner/Author Requestor. Under Section 3.4, "Funding Profile" the total project cost is $23,380,700. According to Section 5.8 of PRC-PRO-PM-24889 *Project Initiation and Execution* the CHPRC President's Office of the EPC Vice President is the approval authority for PEP's for projects with a total project cost of $20M to $100M. The PEP

does not address whether the CHPRC President or the EPC Vice President formally approved of the final PEP and no evidence of such approval has been found.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F13

CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

Requirements:

1. National Historic Preservation Act (NHPA), 16 USC § 470-1, et seq.
2. Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC § 3001, et seq.
3. 10 CFR 1022, *Compliance with Floodplain and Wetland Environmental Review Requirements*
4. 36 CFR 60, *National Register of Historic Places*
5. 43 CFR 10, *Native American Graves Protection and Repatriation Regulations*
6. PRC-PRO-EP-15333, *Environmental Protection Processes*
7. PRC-RD-EP-15332, *Environmental Protection Requirements*
8. CRD M 450.4-1, *Integrated Safety Management System Manual*
9. DOE-0344, *Hanford Site Excavating, Trenching and Shoring*

Discussion:

On March 16, 2010, the 100K Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP. The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." This permit was signed by, among others, the Design Authority/Technical Representative, ECO, Water Utilities Representative and the Facility/System Owner. *See* Exhibit 19. The construction activities covered by this Excavation Permit commenced on April 13, 2010. *See* Exhibit 21.

CHPRC's procedures correctly identify the contractor's Cultural Resources review compliance obligations by stating that a Cultural Resources Compliance review is required:

> . . . when a proposed activity could affect a cultural or historical property or structure, disturb a Native American artifact, or occur within one-quarter mile of the Columbia River. A . . . review/report shall be ***completed before soil disturbance.***

PRC-RD-EP-15332, Sec. 2.55.3. (***Emphasis added***). The 100K IUUP *Functional Design Criteria* document also recognizes this requirement by stating:

> All aspects of the outdoor design shall compliment the special requirements to protect cultural resources, wildlife activities and habitat, and environment and any special requirements as identified in the Ecological/Cultural Resource Review. This will be implemented through compliance with PRC-PRO-SH-090 [replaced by DOE-0344], Excavating, Trenching, and Shoring, which requires these reviews as part of the excavating permit process.

100K Water, Electrical, and KW Basin HVAC Upgrades Functional Design Criteria, KBC-41961, Sec. 4.2.12.[17] ECOs are prohibited from signing excavation permits until all environmental approvals, include cultural resources reviews have been obtained. *See* DOE-0344, Sec. 5.3 and Appendix E, Block 11 instructions.

A Cultural Resources Review addressing the 100K raw water line was performed by DOE's Richland Operations Office Cultural Resources Program Manager, and a determination was made releasing the 100K IUUP to proceed on April 22, 2010. *See* Exhibit 54. The April 22, 2010 authorization expressly covered the cross site raw water line (i.e., work being performed outside the fenced boundary of the 100K Area) and (inside the fence) construction of "Water filtration . . . units . . . to provide sanitary water supply for . . . trailers, portable restrooms and shower trailers." Construction activities involving disturbance of soil inside the 100K fence actually began on April 13 2010. The Hanford Site data Cultural Resources Data Base maintained by Mission Support Alliance has been searched, and no approval (No Potential to Cause Effect determination or any other appropriate determination) for work inside the fence on the potable and fire water system has been located.

After reviewing a preliminary draft of this Report, CHPRC informed DOE-RL that the Contractor had relied upon a "blanket cultural resources review" titled "*Cultural Resources Review of Ground Disturbing Activities Associated with the Decontamination, Decommissioning and Demolition of Spent Nuclear Fuel Facilities at 100K, Hanford Site, Richland, Washington (HCRC# 2003-100-021)*," issued by PNNL on May 17, 2004 as the basis for issuing its excavation permit on March 18, 2010. The cultural resources review cited by CHPRC covered thirty-four existing building in the 100K Area scheduled for removal under various CERCLA

[17] While both the cited document and CHPRC's environmental procedure PRC-PRO-EP-15333 refer to PRC-PRO-SH-090, it cannot be found in the current lists of CHPRC Procedures. It may have been superseded by DOE-0344, Rev 2, Nov 2010, however confirming this assumption was beyond the scope of this Surveillance. None the less, this error may be an additional indicator of the inadequacy of CHPRC's quality control systems.

remedial actions. It does not discuss any construction of new buildings. CHPRC also provided e-mail documents that establish that the 100K Area ECO verified with PNNL on March 30, 2010 (twelve days after signing the excavation permit) that the blanket review document as still valid for its intended purposes.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F14

The CHPRC did not meet contractual requirements requiring the maintenance of an active Memorandum of Understanding between CHPRC and the Hanford Fire Marshal's Office.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section E (3) b - Other contractors (PRC, RCC, OccMed) must institutionalize and recognize the HFM's authority as contained in the Authority, Responsibilities, Duties, and Enforcement section of the DOE approved Hanford Fire Marshal Charter. Prime contractors performing under a different contract from under which the Fire Marshal's Office performs shall form an agreement or memorandum of understanding with the Hanford Fire Marshal to implement this authority.

2. 10 CFR 122, *Quality Assurance Criteria*, Section A.1. – The Quality Assurance Program must address the following management, performance, and assessment criteria: "Establish an organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work."

3. DOE O 414,1C, *Quality Assurance*, Attachment 2, (Contractor Requirements Document), Section 3.a.1 mandates that Management/Programs must "Establish an organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work."

Discussion:

CRD O 420.1B, Facility Safety, Supplemented, rev 4, Section E.3.b, DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.a.1, and 10 CFR 122, Quality Assurance Criteria, Section a.1 requires that an active MOU exist between the CHPRC and the HFMO. No active MOU exists.

The RL Supplemental Contractor Requirements Document (SCRD) 0 420.1 B delineates the general functions of the HFMO. The SCRD also references the Fire Marshal roles and responsibilities as contained in the Authority, Responsibilities, and Duties of the Hanford Fire

Marshal (a.k.a. Fire Marshal Charter), and requires RL contractors to recognize and institutionalize the HFM's authority. Through the Fire Marshal Charter, issued by the RL and ORP, the HFM has the responsibility to ensure a reasonable level of fire prevention and protection for contractors and employees on the Hanford Site. This charter states that Hanford contractors and DOE will support the HFM in the enforcement of codes and standards and execution of the HFM duties on the site. The HFM also serves as the first level of Authority Having Jurisdiction (AHJ) on behalf of the DOE.

A MOU titled *Memorandum Of Understanding, Rev. 0, Between The Hanford Fire Marshal's Office And Other Contractors With Fire Protection Engineers Designated As Deputy Fire Marshals* (CHPRC-080081) was issued on July 17, 2009, but as a result of inaction expired one year later. The MOU itemized the functions of the Hanford Fire Protection Program and distributed these functions between the HFM and the FPEs designated as a DFM and assigned to contractors. The blue sheet cover page of the MOU stated that it should be updated and re-issued in one year. The MOU between the CHPRC and the HFM expired and was never reinstated.

The 100K IUUP did not recognize the authority of the HFM or CHPRC FPEs designated as a DFM, nor did they understand the different roles and responsibilities of both parties. CHPRC generated several Condition Reports (2010-3049, 2010-3373, 2010-3375, and 2010-3376) which identified the lack of understanding of the roles and responsibilities of the HFM and DFMs, as one of the causes that resulted in construction of defective design and project delays at the 100K IUUP. On April 6, 2011, a *100K Infrastructure Water Project Post-Job Lessons Review Value Management Session* was conducted. One of the path forward actions of the session was to "review/clarify and define fire protection roles and responsibilities." 100K IUUP management did not realize that an expired MOU with the HFM existed, nor did they realize the contract requirements to keep the MOU current and implemented in their company. Had the MOU been in place and implemented, many of the issues identified in this surveillance would not have taken place.

RL Lead Assessor Closure Required: YES [x] NO [ ]

Finding: S-11-EMD-PRC-001-F15

CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate Lockout/Tagout (LOTO) notification and briefings.

Discussion:

CHPRC had not ensured that the prime subcontractor safety representative for the 100-K Potable Water Treatment Facility construction site had completed the training requirements of the Hanford Site LOTO program prior to start of work. Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1, paragraph I. states in part, "Prior to

start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RL-92-36 Rev. 1, and certification that all training is current." The RL Electrical SME asked the Grant Safety Representative in September 2010 if he was ever trained to DOE-0336, and he said that he was not. The SME asked the Grant Construction Manager explain how the Safety Representative could provide adequate safety oversight of other Grant construction workers and ensure compliance to DOE-0336 if he was not knowledgeable of the associated requirements. The Manager was unable to provide an explanation.

CHPRC did not ensure that the prime subcontractor LOTO point of contact for the 100-K Potable Water Treatment Facility construction site knew when and where authorized worker tags were applied using the eight criteria per DOE 0336. DOE 0336 *Hanford Site Lockout/Tagout*, Section 5.13, states in part, "Designate a qualified member(s) of the Controlling Organization (CO) to be the lockout/tagout point of contact for the outside contractor for facilities that have a physical interface with an existing facility. Determine which of the following methods of lockout/tagout is to be used: Use of Authorized Worker (AW) locks and tags alone when all of the eight criteria listed below are met." The RL Electrical SME asked the Grant Safety Representative and Construction Manager if the Potable Water Treatment Facility primary disconnect was LOTO, and the SME was informed by both sources that the primary disconnect was not LOTO, but rather individual branch circuits were LOTO. During the walkthrough in September 2010 the SME observed that the primary disconnect was LOTO by two authorized worker tags. It appeared that the Grant Construction Manager (who had primary responsible for LOTO at this site) did not have good configuration control.

Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 4.9, paragraph B. states in part, "The Contractor will develop and maintain a work site Job Safety Analysis in accordance with PRC-PRO-SH-40078." In September 2010, the JSA for this construction site did not identify (LOTO) as a potential hazard. The Treatment Plant had power for over three weeks, and the JSA still had the "no" block re: LOTO as a hazard. When this was brought to the attention of the Grant Safety Representative, he stated that updates to the JSA were in the construction trailer and had not yet been added to the JSA package. It was the SME's understanding that Grant has only one JSA for this construction site, and so the construction workers who had signed this JSA had performed work during the previous three weeks without an adequate JSA advising them of the LOTO hazards

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O01

CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).

Discussion:

On June 18, 2009 the 100K Area ECO sent an email message to the CHPRC NEPA SME asking for help in obtaining a NEPA activity based CX determination. This message was copied to the IUUP Project Manager as well as the CHPRC EP Manager and other relevant individuals. This message also attached an EAS Form which identified construction or modifying a public water, raw water, or export water system as part of the work activities to be completed. *See* Exhibit 7. No response to this email was returned to the 100K Area ECO from either the CHPRC NEPA SME or the CHPRC EP Manager.

On August 24, 2009, the 100K Area ECO sent a second email message to the CHPRC EP Manager which states:

> I have never been involved with installing a potable water treatment system . . . so I am heading into new territory. I checked out 15333, section 5.7 (see below). I also ***need your help*** as well. Thanks. If you could get me answers by COB, Wednesday, August 26, 2009. . . .

See Exhibit 8 (***Emphasis added***).

The ECO told the Assessment Team that, like his first email on this subject, he did not receive a response to his second email either. Had the CHPRC EP Manager responded in a timely manner to the above emails, the likelihood that all the required environmental requirements would have been improved.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O02

Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

Discussion:

During the Assessment Team's interview with the individual occupying the role of IUUP Project Manager from November 2009 to April 2010, he stated that he verbally requested that an independent quality assurance inquiry be done of the project prior to start of construction. A review of the CHPRC Integrated Evaluation Plan (IEP) Assessment Report data base reveals that no such inquiry was ever conducted by any CHPRC QA organization. Had an inquiry been conducted, in all likelihood, it would have revealed the lack of compliance with the applicable

environmental requirements. This, in turn, would have resulted in a correction of these deficiencies prior to start of construction. Unfortunately, no such inquiry occurred.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O03

CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

Discussion:

On April 7, 2010 a PRB for the 100K IUUP was conducted for work that included "Inside the Fence" activities. The materials presented to the PRB on April 7 contained no mention of applicable environmental or other regulatory requirements. *See* Exhibit 55. Later that day, the 100K IUUP Construction Manager sent an email message to the 100K IUUP Project Director stating that the PRB had approved construction. *See* Exhibit 56. On April 21, 2010 a second PRB was convened to review 100K IUUP work scope not reviewed by the first PRB on April 7. The additional work scope included an import water line and 100K fire water and potable water supply line. As with the materials presented to the first PRB, the materials presented on April 21 contained no mention of applicable environmental or other regulatory requirements. *See* Exhibit 57. The PRB again approved commencement of construction.

Had a regulatory requirements check list, or some other form of review or evaluation of environmental and fire safety regulatory requirements been included in the PRB review process, compliance failures might have been avoided.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-004

After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorize the event.

Requirement(s):

1. DOE O M 231.1-2, *Occurrence Reporting and Processing of Operations Information*

2. CRD O 226.1A (Supp Rev A), *Implementation of Department of Energy Oversight Policy*

3. CRD M 231.1-2 (Supp Rev 8), *Occurrence Reporting and Processing of Operations Information*

4. DOE Contract Number DE-AC06-08RL14788, Section H.19, *Environmental Responsibility*, and Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

5. PRC-PRO-EM-060, *Reporting Occurrences and Processing Operations Information*

Discussion:

CRD M 231.1-2, *Occurrence Reporting and Processing of Operations Information (*Occurrence Reporting Manual*)*, and PRC-PRO-EM-060, *Reporting Occurrences and Processing Operations Information* specify CHPRC's occurrence reporting requirements and obligations. The requirements of CRD M 231.1-2 are a contractual obligation created by CHPRC's Contract with DOE. *See* DOE Contract Number DE-AC06-08RL14788 generally, and its Table J.2.8 more specifically.

On June 8, 2010, CHPRC filed with DOE Occurrence Report Number EM-RL-CHPRC-GENLAREAS-2010-0013 (Occurrence Report). The Occurrence Report disclosed CHPRC's discovery that it had began construction of 100K IUUP facilities without obtaining a NEPA determination from the Hanford NEPA Compliance Officer, and construction approvals required from the WDOH. *See* Exhibit 49. The Occurrence Report lists the date of discovery of the incidents reported as June 4, 2010, characterizes the incidents as a Management Concern, and assigns a significance level of SC4.

The significance level assigned in the Occurrence Report may not be consistent with the requirements of the Occurrence Reporting Manual. The Manual defines five levels of significance to be used in occurrence reporting. More specifically, it defines category 2, 3 and 4 as follows:

> Significance Category 2. Occurrences in this category are those that are not Operational Emergencies and that have a ***moderate impact*** on safe facility operations, worker or public safety and health, ***regulatory compliance***, or public/business interests.
>
> Significance Category 3. Occurrences in this category are those that are not Operational Emergencies and that have a ***minor impact*** on safe facility operations, worker or public safety and health, ***regulatory compliance***, or public/business interests.
>
> Significance Category 4. Occurrences in this category are those that are not Operational Emergencies and that have ***some impact***

> on safe facility operations, worker or public safety and health, public/business interests.

CRD M 231.1-2, Sec. 1.2 d., e. and f. (***Emphasis added***). Because the incident reported involved at least a minor impact to "regulatory compliance," it may have been appropriate to assign a significance level of at least Category 3.

For either a Significance Category 3, or 4 event, the DOE Manual requires that a written occurrence report be filed with DOE within two working days of discovery of the incident. CRD M 231.1-2, Sec. 1.4.2 c. and d. The Occurrence Report lists the date of discovery in the instant matter as June 4, 2010. The DOE Manual defines the date and time of discovery as:

> The discovery date and time is when the facility staff discovered or became aware of the event or condition. The facility staff is those personnel assigned to the facility and cognizant of the area in which the event or condition is identified.

DOE M231.1-2, Sec. 13.d. CHPRC actually discovered the conditions disclosed by the Occurrence Report on or about May 18, 2010, thirteen business days before CHPRC filed its Occurrence Report. The Occurrence Report section titled "Description of Occurrence" states:

> . . . On May 18, 2010 it was determined that construction had begun prior to approval of the project report by WDOH . . . . In this case, the approval of the National Environmental Policy Act (NEPA) Categorical Exclusion (CX) submittal was determined to have not yet been obtained. . . .

See Exhibit 49, p. 2, Section 15. CHPRC's knowledge as of May 18, 2010 of its failure to obtain WDOH approvals prior to commencing construction is also documented in its e-mail traffic. *See* Exhibit 28.

A Significance Category 3 Occurrence Report must assign a cause and identify appropriate corrective action. *See* CRD 231.1-2, Sec. 1.5 b. and DOE M 231.1-2, Sec. 11. Because it was assigned a Category 4 rating, the Occurrence Report contains no information regarding a determination of cause, nor any corrective action required or taken. *See* Exhibit 49, Items 22 and 25.

The "Description of Occurrence," Sec. 15 contained in the Occurrence Report neither fully, nor accurately discloses all relevant information regarding the incidents. While the language of Sec. 15 accurately discloses that CHPRC learned on May 18, 2010 of its failure to obtain NEPA and WDOH approvals prior to commencing construction on the 100K IUUP facilities, it fails to clarify, as differing from the 200 Area project discussed in this same Sec. 15, that applications for the required approvals had also not even been made prior to commencement of construction activities. Sec. 15 also states: " . . . CX [NEPA] approval was immediately obtained, and the Project Report submitted to WDOH for approval." In fact, the Project's NEPA CX

determination was not issued until May 26, 2010, and the Project Report was not submitted to WDOH until June 1, 2010. *See* Exhibits 48 and 50 respectively.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Contractor Self-Assessment: The CHPRC did not perform a formal self-assessment of the issues at the 100K IUUP that eventually resulted in the CHPRC Senior Management issuing a Stop Work. The Assessment team concluded that the Contractor's self-assessment activities at the 100K IUUP were generally ineffective.

Contractor Self-Assessment Adequate: **YES [ ]** **NO [x]**

Contractor Management To Be Briefed:

CHPRC President
CHPRC Vice-President, Environmental Protection and Strategic Planning
CHPRC Vice-President, Safety

S-11-EMD-PRC-001

INDEX OF EXHIBITS

Exhibit-1 *Letter*, W.A. Rutherford, Director, Site Infrastructure Division, Department of Energy, Richland Operations Office, to President Westinghouse Hanford Company, HANFORD DRINKING WATER SYSTEMS, April 11, 1995 PAGE 62

Exhibit-2 *Email*, Douglas E. (Doug) Wertz, to Colburn E. Kennedy, Cc: Bruce R. Johns, Walter J. (John) Geuther, Douglas C. (Doug) Bragg, VE SESSIONS – 100K AREA UTILITIES, April 13, 2009 PAGE 63

Exhibit-3 *Email*, Colburn E. Kennedy, to Douglas E. (Doug) Wertz, Cc: Richard A. Harrington, RE: VE SESSIONS – 100K AREA UTILITIES, April 16, 2009 @ 9:47 AM PAGE 63

Exhibit-4 *Email*, Douglas E. (Doug) Wertz, to Colburn E. Kennedy, RE: VE SESSIONS – 100K AREA UTILITIES, April 16, 2009 @ 10:03 AM PAGE 63

Exhibit-5 *Email*, Christine E. Sumner, to Richard A. Harrington, Colburn E. Kennedy, Scott W. Story, Christopher Lucas, Michael R. Koch, Steven Moore, Scott (EU) Baker, Susan K. Omberg Carro, Jay R. Mills, John R. Parker, Timothy J. Davison, Steven N. Balone, Randall N Krekel, Mike Swartz, Douglas E. (Doug) Wertz, Steven P. Burke, Mark A. Wright, David B. Anderson, Floyd M. Maiden, Alastair J. MacDonald, colburn.kennedy@ch2m.com, 100K Infrastructure Project Charter Workshop, Undated PAGE 64

Exhibit-6 *Project Scope Statement Sheet – 100K Infrastructure Project Charter Workshop*, May 5-6, 2009 PAGE 67

Exhibit-7 *Email with EAS form Attachment*, Brett M. Barnes, to Michael T. Jansky, Cc: Darrell J. Riffe, Colburn E. Kennedy, Scott W. Story, David J. (Dave) Watson, Richard H. Engelmann, ACTIVITY – SPECIFIC CX FOR THE REROUTING OF 100K BASIN UTILITIES AND HVAC, June 18, 2009 PAGE 68

Exhibit-8 *Email*, Brett M. Barnes, to Richard H. Engelmann, FW: 100K Follow Up, August 24, 2009 PAGE 73

Exhibit-9 *Meeting Notes*, Sam E. Wajeeh, to Steve Moore (CHPRC), Sam Wajeeh (CHPRC), Tom Ashley (ARES), Elizabeth Bowers (DOE), Brett Barnes (CHPRC), Mike Wilson (DOH), New Water Treatment System for the 100K Basin, October 6, 2009 PAGE 75

Exhibit-10 *Email*, Elizabeth M. (Liz) Bowers, to Steven N. Balone, Cc: Michael R. Koch, Dickie J. Ortiz, Thomas K. Teynor, Usama E. Wajeeh, Colburn E. Kennedy, RE: Meeting with Department of Health on Proposed Water Plant, October 7, 2009 PAGE 77

Exhibit-11 *PRC-PRO-AC-123, Requesting Materials and Services, Attachment 5, Functional & Project Concurrence Checklist*, See Exhibit 12 for date PAGE 78

Exhibit-12 *Email*, Laurie L. Lafferty, to Scott W. Story, Cc: David E. Fink, RE: Attachment 5 APPROVALS, December 21, 2009 @ 1:06 PM PAGE 94

Exhibit-13 *Email, Scott W. Story, to Laurie L. Lafferty,* RE: Attachment 5 APPROVALS, December 21, 2009 @ 1:55 PM PAGE 94

Exhibit-14 *Email*, Usama E. Wajeeh, to Brett M. Barnes, Cc: Scott W. Story, David E. Fink, Colburn E. Kennedy, 100K Water Infrastructure Project-Potential Project Risk, December 16, 2009 @ 1:50 PM PAGE 95

Exhibit-15 *Email*, Brett M. Barnes, to Dottie L. Norman, Cc: Scott W. Story, David E. Fink, Colburn E. Kennedy, Usama E. Wajeeh, Jennie R. Seaver, RE: 100K Water Infrastructure Project-Potential Project Risk, December 16, 2009 @ 2:20 PM PAGE 95

Exhibit-16 *Letter with Attachment*, John G. Lehew, President and Chief Executive Officer CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, REQUEST FOR WAIVER OF PILOT STUDY FOR NEW 100K POTABLE WATER FACILITY, January 11, 2010 PAGE 97

Exhibit-17 *Letter*, John D. Phillips, Contract Specialist CH2MHILL Plateau Remediation Company, to Watts, Construction, Inc., CONTRACT NUMBER 36538 100-K RIVER WATER ISOLATION PROJECT IMPORT WATER LINE NOTICE TO PROCEED, January 28, 2010 PAGE 108

Exhibit-18 *Letter*, Michael D. Wilson, PE Regional Engineer Washington State Department of Health, to Usama E. Wajeeh, CH2M Hill Plateau Remediation Company, Subject: Energy, Dept of/100K; PWS ID # 00177J; Benton County Justification to Avoid Pilot Study for New 100K Potable Water Facility DOH Project #10-0207A, February 17, 2010 PAGE 109

Exhibit-19 *CHPRC HANFORD SITE EXCAVATION PERMIT*, Brett M. Barnes et al, March 18, 2010 PAGE 111

Exhibit-20 *Letter, Noreen A. Clifford, Contracting Officer CH2MHILL Plateau Remediation Company, to George A. Grant, Inc.*, CONTRACT NUMBER 36534-31 ARRA – POTABLE WATER TREATMENT FACILITY CONTRACT AWARD DOCUMENTS TRANSMITTAL, April 7, 2010 PAGE 112

Exhibit-21 *CHRPC-CONSTRUCTION DAILY ACTIVITY REPORT*, Klint Johnson, Import waterline and 100K FW&PW lines, April 13, 2010 PAGE 121

Exhibit-22 *CHPRC-CONSTRUCTION DAILY ACTIVITY REPORT*, Klint Johnson, Import RAW waterline, April 28, 2010 PAGE 124

Exhibit-23 *EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS Compiled from IDMS, April 5, 2011*, Week Ending February 12, 2010 to Week Ending March 25, 2011 PAGE 127

Exhibit-24 *Meeting Summary*, Brian Dixon, Meeting with Washington State Department of Health Office of Drinking Water, Spokane Washington May 18, 2010, May 18, 2010 PAGE 148

Exhibit-25 *Root Cause Analysis Report*, EN Dodd III, PW Martin, DP Kimball, VM Pizzuto, Root Cause Analysis Report Potential Adverse Trend-Environmental Regulatory Requirements for Construction Projects Not Met EM-RL-CPRC-GENLAREAS-2010-0013, October 19, 2010 PAGE 150

Exhibit-26 *Email*, Max L. Edington, to Kurtis L. Kehler, Cc: Colburn E. Kennedy, Dottie L. Norman, Usama E. Wajeeh, 100 K Water System Replacement Project, May 18, 2010 @ 3:33 PM PAGE 167

Exhibit-27 *Letter*, John G. Lehew III President and Chief Executive Officer CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, SUBMITTAL OF PROJECT REPORT FOR 100K POTABLE WATER FACILITY, June 1, 2010 PAGE 168

Exhibit-28 *Email*, Moses Jaraysi, to John G. Lehew, Kurtis L. Kehler, Colburn E. Kennedy, Cc: Allan E. Cawrse, FW: Fire System Applicability, June 2, 2010 PAGE 169

Exhibit-29 *Email*, Usama E. Wajeeh, to Colburn E. Kennedy, Cc: Allan E. Cawrse, Kurtis L. Kehler, Dottie L. Norman, Max L. Edington, FW: Discussion with Mike Wilson (WDOH) Regarding 100K Project Report Submittal, June 7, 2010 PAGE 172

Exhibit-30 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh PE CH2MHILL, Energy, Dept Of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System Project Report ; DOH Project # 10-0207B, June 16, 2010 PAGE 173

Exhibit-31 *Letter*, Max L. Edington, Project Manager 100K D&D CH2MHILL Plateau Remediation Company, to M.D. Wilson Regional Engineer, Washington State Department of Health, SUBMITTAL OF CONSTRUCTION DOCUMENTS FOR 100K POTABLE WATER FACILITY, June 23, 2010 PAGE 174

Exhibit-32 *Letter*, Michael D. Wilson, Regional Engineer Washington State Department of Health, to Usama E. Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System Project Report; DOH Project #10-0207B, July 8, 2010 PAGE 175

Exhibit-33 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy,Dept Of/100K; PWS ID #00177J; Benton County Construction Documents For 100K Potable Water Facility; DOH Project # 10-0207C, July 22, 2010 PAGE 177

Exhibit-34 *Letter*, Max L. Edington, Project Manager 100K D&D CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, SUBMITTAL OF WDOH PROJECT REPORT COMMENT RESPONSE FOR 100K POTABLE WATER FACILITY, July 22, 2010 PAGE 178

Exhibit-35 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Potable Water Facility Construction Documents DOH Project #10-0207C, August 3, 2010 PAGE 180

Exhibit-36 *Letter,* Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System; DOH Project #10-0207B; APPROVAL, August 5, 2010 PAGE 183

Exhibit-37 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K Potable Water Facility; DOH Project #10-0207C APPROVAL, September 15, 2010 PAGE 184

Exhibit-38 *Letter*, Max L. Edington, Area Manager 100K D4 CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, Department of Energy 100K Water Treatment Facility PWS ID# 00177J; Benton County; Operational Performance Testing Report; DOH Project #10-0207D, January 27, 2011 PAGE 185

Exhibit-39 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept Of/100K; PWS ID #00177J; Benton County OTP Report; DOH Project # 10-0207E, February 1, 2011 PAGE 186

Exhibit-40 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID # 00177J; Benton County Operational Performance Testing Report;

DOH Project #s 10-0207D-10-0207E APPROVAL, February 18, 2011 PAGE 187

Exhibit-41 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept Of/100K; PWS ID #00177J; Benton County Operational And Maintenance Manual; DOH Project # 11-0313, March 10, 2011 PAGE 188

Exhibit-42 *Email,*, Michael Wilson / EH (DOH) [mailto:Michael.Wilson@doh.wa.gov], to Max L. Edington, Steven Moore, FW: Energy, Dept of/100K; PWS ID #00177, Benton County: Membrane WTP Start-Up Approval, March 16, 2011 PAGE 189

Exhibit-43 *Email*, Dottie L. Norman, to Brett M. Barnes, Scott W. Story, FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018, April 23, 2010 @ 12:17 PM PAGE 191

Exhibit-44 *Email*, Brett M. Barnes, to Michael T. Jansky, FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC #2009-600-018, April 26, 2010 @ 7:25 AM PAGE 191

Exhibit-45 *Email*, Michael T. Jansky, to Brett M. Barnes, Dottie L. Norman, RE: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRD#2009-600-018, April 26, 2010 @ 7:45 AM PAGE 191

Exhibit-46 *Email*, Michael T. Jansky, to Michael T. Jansky, Woody Russell, RE: CX FOR K AREA Utilities Reroute, May 24, 2010 @ 6:39 AM, and *Email*, Michael T. Jansky, to Woody Russell, CX FOR K AREA Utilities Reroute, April 28, 2010 @ 12:27 PM PAGE 192

Exhibit-47 *Email*, Michael T. Jansky, to Woody Russell, RE: CX FOR K AREA Utilities Reroute, May 25, 2010 @ 6:15 AM PAGE 192

Exhibit-48 *Categorical Exclusion for 100 K Area Utilities Reroute Hanford Site, Richland, Washington (an attachment to Exhibit 46)*, April 28, 2010 PAGE 194

Exhibit-49 *Occurrence Report EM-RL-CPRC-GENLAREAS-2010-0013*, June 8, 2010 PAGE 202

Exhibit-50 *EPC-40524, Rev. 1 100K Infrastructure Project Execution Plan*, July 29, 2010 PAGE 206

Exhibit-51 *INTEROFFICE MEMORANDUM with Attachment FINAL REPORT, INDEPENDENT ASSESSMENT OF ENGINEERING, PROJECTS AND CONSTRUCTION, CHPRC-PO-IA-10-02*, S.J. Turner, Manager of Performance Oversight CH2MHILL Plateau Remediation Company, to K.A. Dorr, EPC CH2MHILL Plateau Remediation Company, April 14, 2010 PAGE 254

Exhibit-52 *CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-1080*, Bonnie S. Harder Initiator, Deficiencies were identified in the implementation of the Project Execution Plan (PEP) process as required by PRC-PRO-PM-24889, Project Initiation and Execution, April 13, 2010 PAGE 290

Exhibit-53 *Email*, Daniel P. Kimball, to ^CHPRC Corrective Action Management, CR-2010-1080 Corrective action # 3, June 30, 2010 PAGE 293

Exhibit-54 *Email*, Annabelle L. Rodriquez, to Scott W. Story, Colburn E. Kennedy, Cc: Steven N. Balone, Thomas K Teynor, Annabelle L. Rodriquez, Ellen L. Prendergast-Kennedy, April 22, 2010 PAGE 191

Exhibit-55 *Presentation*, Dave Fink, to 100-K Utility Upgrades Project PRB for: Inside the Fence Water Lines task 1, 105 KW Fire Water Supply Line, A9 Switch Yard Preparation, April 7, 2010 PAGE 294

Exhibit-56 *Email*, David E. Fink, to Kurtis L. Kehler, Colburn E. Kennedy, Cc: Kent A. Dorr, Stephen R. Douglass, Good News the PRB Approved the following for Construction with Attachment image001.png, April 7, 2010 @ 3:20 PM PAGE 316

Exhibit-57 *Presentation*, Dave Fink, to 100-K Utility Upgrades Project, April 21, 2010 PAGE 317

Exhibit-58 *Email*, Gregory Morgan [mailto:Gregory.Morgan@rl.doe.gov], to Gail A. Chaffee, Cc: Thomas Teynor, Alan L. Ramble, Calvin E. Morgan, Roger Quintero, Mark W. Jackson, Burton E. Hill, Dale C. West, Michael R. Koch, Dennis A. Clapp, FW: USQ in Support of New Water System, April 14, 2011 @ 3:27 PM, and *Email*, Gail A. Chaffee, to Gregory Morgan, Cc: Thomas Teynor, Alan l. Ramble, Calvin E. Morgan, Roger Quintero, Mark Jackson, Burton Hill, Dale West Michael R. Koch, Dennis (CONTR), Richard E. Raymond, RE: USQ in Support of New Water System, April 14, 2011 @ 4:04 PM PAGE 352

Exhibit-59 *CRPRC-REVIEW COMMENT RECORD (RCR)*, Reviewers Susan Omberg Carro, Sam Wajeeh, Adam Moldovan, Richard Larson, 90% Design Review 100K Project, October 23, 2009 PAGE 357

Exhibit-60 *CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-2597*, Susan Omberg Carro Initiator, Installation of Fire Suppression System Without Required Design Approval, August 24, 2010 PAGE 372

Exhibit-61 *CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-3049*, Don Eide Initiator, 100K- Fire Suppression System Field Work Stop Work (ARRA): SAC-2010-1169, September 29, 2010 PAGE 374

Exhibit-62 *CHPRC CONTRACTOR DOCUMENT SUBMITTAL FORM*, Lisa Smyser CHPRC Project Records Specialist, 100K Potable Water Treatment Facility Contract No. 36534 Release No. 031, Submittal

Register No. 13125-02, Version 03, Date Prepared August 30, 2010,
August 31, 2010 PAGE 380

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U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE SURVEILLANCE REPORT NUMBER S-11-EMD-PRC-001[1], SUPPLEMENTAL ANALYSIS

CONTRACTOR'S FACTUAL ACCURACY REVIEW AND FINAL DETERMINATION BY THE RICHLAND OPERATIONS OFFICE

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
Concern: S-11-EMD-PRC-001-C01. The discussion of the concern states in part: "....The CHPRC 100K Infrastructure Utilities Upgrade Project (herein after "100K IUUP or "Project") failed to meet contractual requirements and other obligations during design and construction of the 100K Water Treatment Facility and the Fire and Potable Water Distribution System. CHPRC's corrective action system failed to recognize or otherwise	CHPRC agrees that it did not plan and execute the 100K Water Treatment Facility and the Fire and Potable Water Distribution System project in full compliance with contractual, procedural, and environmental/ regulatory requirements. CHPRC disagrees that there is or was a pattern of conduct or intentional or knowing disregard for compliance with contractual, procedural and environmental requirements particularly when this project is placed in the proper context of the legal requirements of CERCLA. CHPRC disagrees that the project design failed to meet contractual or other obligations as reflected in the fact that the project has been completed and accepted by DOE. CHPRC disagrees that it made unilateral decisions to proceed at risk CHPRC disagrees that its corrective action system failed to recognize and address the key	CH2M HILL Plateau Remediation Company, (CHPRC) appreciates the opportunity to review and provide comment to the draft Surveillance Report No. S-11-SED-PRC-006 ("Report"). We have examined the facts and created what we believe is an accurate recreation of the timeline of events that took place surrounding the events discussed in the surveillance report. As a general proposition, CHPRC agrees that it's planning and execution of the project should have been better. This is not what CHPRC strives for in its execution of the contract. Having said that, the project was executed safely, the work was accepted by DOE, and directly supported the demolition and removal of the two Columbia River water intake structures at the 100-K complex. That new water system operates successfully and has all appropriate endorsements from the Washington Department of Health, without modification from the condition in which it was constructed.	CHPRC's request to modify Concern C01 is granted to the extent that the language was rewritten to focus more narrowly on the specific nature of the departures from requirements identified in the Report, and to avoid needlessly harsh or inflammatory statements. Some portions of the comments on ISMS requirements were determined to be non-substantive and were removed. CHPRC's requests are otherwise rejected. DOE acknowledge in footnote 2 of Surveillance Report S-11-EMD-PRC-001 (Surveillance Report) that this project might have been entitled to the regulatory permitting exemptions of CERCLA § 121(e)(1), but that apparently the steps necessary to secure such entitlement were not all taken. CHPRC's asserts that: "... there is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes ...." However, the very OSWER Directive #9355.3-22 cited by CHPRC in it comments contradicts that assertion. More

[1] Surveillance Report Number S-11-EMD-PRC-001was originally assigned report number S-11-SED-PRC-006. The report number was changed to S-11-EMD-PRC-001 at the time the Report was finalized and responsibility for tracking corrective actions was assigned to the Environmental Management Division of the Richland Operations Office.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
address this pattern of conduct and extent of condition. CHPRC made unilateral decisions to "proceed at risk" in contravention of contractual requirements and State environmental statutory obligations…."	planning and execution deficiencies associated with the project. **Concern: S-11-SED-PRC-006-C01 Rewrite** CHPRC did not plan and execute the 100K Water Treatment Facility and the Fire and Potable Water Distribution System project in full compliance with all contractual requirements, procedures, and environmental regulations. **Discussion:** The CHPRC planned and performed the CHPRC 100K Infrastructure Utilities Upgrade Project in a "fast track" mode to take full advantage of Recovery Act funds made available for the project. . Estimated total project costs were $23, 380,700 for FY2009 and FY2010 (see finding F013). From the beginning of the project, CHPRC proceeded "at risk" with the full knowledge and communication with WDOH and DOE representatives. WDOH in meetings held to discuss the progress of the project, confirmed that while it could not formally approve proceeding with construction prior to completion of the permitting process, it acknowledged that it would exercise its regulatory discretion and not take enforcement action. This acknowledgment was consistent with how WDOH has dealt with other commercial and Hanford projects. It was fully understood by Project Management that "at risk" meant that some work may have to be re-done at CHPRC's expense if the WDOH or DOE found the work to be unacceptable. CHPRC viewed this to be reasonable particularly in light of the dual purpose nature of the project, which was to provide both fire protection as well as potable water. The outcome was that permits	CHPRC was able to proceed in an expedited manner with obtaining necessary concurrences from the multiple regulatory agencies with oversight authority over construction activities affecting the Columbia River and its protected species, including the US Army Corps of Engineers, the US Fish & Wildlife Service, the National Marine Fisheries Service, and the Washington Department of Natural Resources. We prevented or mitigated negative environmental impacts by laying foundational stone at the base of the structures during the short period identified by USFWS and NMFS as having minimal impact on endangered species passing up or down the river, and used silt curtains to prevent particulate pollution of the river and spawning grounds. We coordinated with USFWS to mitigate the presence of migratory birds at the intake structures, including turning over a nest of owls to an owl rehabilitation center permitted by USFWS. While, in many instances we agree with the facts stated in the report, there are two kinds of omissions which we find in the draft report. First, many relevant and important facts are missing and leave the incorrect and unwarranted impression that CHPRC took these actions without the awareness of either the Department of Energy project managers and of the principle regulatory agency that provided oversight for this project, the Washington Department of Health. Second, the Concern set forth in the report (S-11-SED-PRC-006-CO1) ignores the proper assessment of these facts against CERCLA requirements. While the report provides a passing reference to CERCLA in a	specifically, the OSWER Directive states: "The decision to provide an alternative water supply need to be documented in the appropriate decision document, such as a Record of Decision (ROD) or Explanation of Significant Differences (ESD) for remedial projects or an Action Memorandum for removal projects." Other facts confirm that CHPRC was not seeking the exemptions offered by CERCLA § 121. CHPRC's EASF checklist states this Project is not a CERCLA project and requires NEPA documentation. The Project's conduct of ultimately applying for multiple approvals from WDOH does not suggest it was proceeding pursuant to CERCLA. The Project produced no evidence that it evaluated any ARARs that would be applicable and documented findings in a CERCLA decision document. DOE acknowledges that CHPRC is entitled to its opinion regarding the methods and practices employed in conducting the Surveillance, but respectfully disagrees with CHPRC's conclusions. With regard to CHPRC's comments on pattern of conduct, failure recognize extent of condition, and failure to comply with contractual obligations, DOE believes the multiple and varied failures to meet regulator or contractual conditions documented in the Surveillance Report are accurate and speak for themselves. DOE points out however that the terms "intentional," "reckless" and "knowing disregard" as used by CHPRC in its Factual Accuracy Analysis are terms invented by

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	were issued and no regulatory action was taken by WDOH. CHPRC engaged in the permitting process with WDOH from the start of the project and showed good faith effort to keep all parties informed.[2] However, the engineering program, project management, construction, project control, and work management, did not fully integrate contractual requirements into work activities. Some contractual requirements identified in CHRPC Procedures and Policies were not followed. During the100K Water Treatment Facility and the Fire and Potable Water Distribution System Project, CHPRC self-identified non-compliance with environmental requirements, company and project procedures, implementation of the PEP process, and fire protection requirements. Also, CHPRC initiated a work stoppage as requested by the CHPRC EP&SP VP on 5/18/10 when it was brought to his attention that the project was proceeding with construction activities prior to obtaining required approvals. A second work stoppage was issued by 100K Senior Management on 9/28/10 on the 100K Fire Suppression System pending comprehensive design document review and approval. A similar Concern was stated in the previous DOE-RL *Assessment of the CH2M Hill Plateau Remediation Company Fire Protection Program* (S-10-SED-PRC-23) of May 27, 2010, which stated "CHPRC Procedures and Policies, D4	footnote, a complete evaluation of the facts leads to the conclusion that no environmental laws or regulations were violated. Rather, the more appropriate conclusion is that CHPRC only failed to recognize and plan the project in light of CERCLA requirements **Omitted Material Facts** First, we believe the complete factual record demonstrates that cognizant DOE officials and WDOH officials were fully informed and well aware of activities being taken, and concurred with each of the critical steps that were taken to complete this project in a manner that met the substantive standards of relevant requirements. We believe these additional material facts make clear the inaccuracy of the allegation in the Report that CHPRC intentionally or recklessly "engaged in a pattern of conduct that failed to recognize or otherwise failed to implement contractual requirements, failed to follow established procedures, and failed to meet statutory obligations". More importantly, this "surveillance report" departs from traditional standards for conducting audits and assessments that normally focus on evaluating compliance with standards and requirements, while they avoid personalization, innuendo and implication. We believe this Report fails that general standard. Consistently absent from the report is any reference to the many meetings that CHPRC held with both DOE and WDOH. This included	CHPRC as they do not appear in the Draft or Final Surveillance Report.

[2] The DOE Project disagrees that it was kept fully informed about environmental violations.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	activities, and subcontractor activities, have not fully integrated FPP requirements. The CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." S-10-SED-PRC-23 was transmitted to the Contractor by DOE-RL letter 10-SED-0128 of August 19, 2010. In response to this assessment, CHPRC issued 10 CRRS items which addressed each issue identified in the report. Four of the CRRS reports are not closed. Four were closed while this new surveillance, S-11-SED-PRC-006 was being performed.	a meeting at which both DOE and WDOH were informed the urgency to proceed with construction of the replacement water system so that demolition of the old system could proceed under the time limit of ARRA funding. WDOH stated that, although it would be sending correspondence that specifically affirmed the agency's authority to impose administrative penalties for commencement of construction before WDOH approval of the design, it orally affirmed that it intended to exercise its regulatory discretion and would only require necessary corrections to already constructed water system components, rather than impose penalties just for commencing construction early. It affirmed that its primary focus was on ensuring that no water system began to operate and deliver water before it was approved by WDOH. CHPRC's project in fact received eventual approval by WDOH, no corrective reconstruction was necessary, and the system was not used to deliver water until final WDOH approval was received. Consistent with its statements to CHPRC, WDOH has not ordered any corrective actions, nor has it taken any enforcement action against DOE or CHPRC. The report similarly fails to put decisions that were made with the knowledge of the DOE in the proper context of the dual nature of the project being for both fire protection as well as potable water. Proceeding with construction of the fire protection system before permits were obtained from the WDOH did not violate any environmental laws or regulations. Another example is in an opening paragraph in Finding F01, where reference is made to a Value	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		Engineering Study that was held by the project. This paragraph further notes that the 100K Area Environmental Compliance Officer (ECO) was not invited and did not attend. Yet there is no reference to any procedural, statutory or contractual requirement that calls for the attendance of the ECO at a Project Chartering study, and consequently this mere fact is as irrelevant as reciting that the Safety and Radcon managers were not present at the meeting. The Report is written to give the impression that this fact is somehow a noncompliance with a standard, when no such standard exists. It appears this innocent fact is being recited so as to imply that absence of the ECO was evidence of an intent to avoid compliance with environmental requirements. This surveillance report is full of similar deficiencies, which depart from an objective recounting of the facts, which is the DOE standard for such assessments. **Legal Significance of the Facts** Second, a more complete legal understanding of the context of the project materially alters the significance of the facts and further reflects the incorrect conclusion of Concern CO1, that CHPRC "failed to meet statutory requirements" Specifically, Page 9, Footnote 1 of the Report states that "The 100K IUUP provided upgrades to infrastructure that was [were] necessary to support a variety of ongoing response actions performed in the 100K Area pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC § 9601, et seq. The Project may have been entitled to exemption from Federal, State or local laws requiring obtaining permits or approvals if	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		the Project had elected to proceed under CERCLA. *See* 42 USC § 121(e) [CERCLA § 121(e)(1), 42 USC § 9621(e)(1)]." This is largely correct, except that there is no requirement for any special documentation that the new water system is being constructed for CERCLA purposes in order to trigger the regulatory preemption authority of CERCLA Section 121(e)(1). The CERCLA remedial and removal action decision documents required the demolition of the 100-K water supply intake structures, which supplied river water to the 100-K West Basin, and supplied both fire suppression, dust suppression, and potable water for the CERCLA remediation of the 100-K complex. The only way that the required demolition of the intake structures could be accomplished was to first provide an alternate system supplying water for those purposes. Therefore, the new water supply system was an essential part of the 100-K CERCLA response action, and met the prerequisites of CERCLA § 121(e)(1), which simply states "No Federal, state, or local permit shall be required for the portion of any removal or remedial action conducted entirely on site, where such remedial action is selected and carried out in compliance with this section." This preempted the legal requirement for both a permit from WDOH and for a NEPA decision document. (DOE's policy to "incorporate NEPA values" into CERCLA documents focuses on the pre-decision analysis of an RI/FS or EE/CA, and does not require documentation in post-ROD or post-Action Memorandum workplans.) The 100-K IUUP	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		project was fully within the authority of CERCLA § 121(e)(1). The construction of new water systems to replace those water systems which are made unavailable in the course of CERCLA remedial investigation and response action is extremely well established. "Provision of alternative water supplies" is defined in the CERCLA statute and the NCP regulations as a standard part of remedial and removal actions. The water does not have to be used just in cleanup, and includes water substituting for supplies made unavailable by CERCLA investigation and cleanup, water which is used for all the usual purposes of households, business, schools, and other government facilities. On September 24, 2010, in OSWER Directive # 9355.3-22, the EPA Director of the Office of Superfund Remediation and Technology Innovation and the EPA Director of the Federal Facilities Restoration and Reuse Office updated the EPA *Guidance Document for Providing Alternate Water Supplies,* EPA/540/G-87/006, OSWER Directive 9355.3-03. They note that "Alternative water supplies are included in response actions for both Federal facilities and non-federal sites", and that a 2007 EPA report had found that alternative water supplies providing permanent new sources of "clean, drinkable water", including "connecting to a municipal water system" had been provided at 298 response actions across the US since the inception of CERCLA in 1980. These include dozens of Federal facilities.	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		Corrective Actions These criticisms of aspects of the Report should not be construed to mean, however, that CHPRC is fully satisfied with its execution and performance of this project. We have examined in detail the facts and have implemented corrective actions to avoid the potential for non-compliance with applicable requirements and improve efficiency in resolving regulatory and safety issues. The report incorrectly recites that this was a Value Engineering Study. Rather this was a structured Project Charter Workshop that was set up to preliminary define scope and deliverables for the project.	
Finding: S-11-EMD-PRC-001-F01. CHPRC failed to apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC **agrees** final approvals were not obtained prior to the start of construction. **DISAGREEMENT STATEMENT** CHPRC disagrees that there was a failure to apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System. The permitting process with the WDOH was initiated from the start of	The Surveillance Report states that water system construction began on April 13, 2010 (p.13), and the project report was submitted to the Washington Department of Health on June 1, 2010 (p. 15). However, the CRD M 231.1-1A, Chg 2 (Supp Rev 1) has no requirements directly pertaining to Safe Drinking Water Act (WDOH) approval requirements for public water systems.[4] CHPRC had engaged in the permitting process with the WDOH from the start of the project. The statement insinuates that the contractor did not intentionally undergo the process of acquiring the necessary permits.	CHPRC's request to modify Finding F01 is granted in part. The language of F01 is modified to read " . . . did not apply . . . for approvals . . . ." Were possible, language of Finding F01 was modified to be less harsh or inflammatory (e.g., "did not" was substituted for "failed to" in a number of locations). Similar global language modifications were made to the other Findings and Observations contained in the final Report. Irrelevant statement about ECO's involvement in planning meetings was removed. The paragraph describing conversations on May 18, 2010 was abbreviated to remove reference to cell phone use. CHPRC's other requests for modifications are rejected.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	the project. Communications with DOH were inclusive but informal.[3] • The Project proceeded at risk, in communication with WDOH representative and DOE Approvals were subsequently obtained, water plant is appropriately permitted. • Meetings (both in person and via telecom) with the WDOH were held. • Emails regarding this issue were transmitted to the WDOH with DOE on distribution. • Letters between CHPRC and WDOH	This is consistent with what CHPRC self-identified.[5] Communications with DOH were cordial, inclusive but informal.[6] • Project proceeded at risk, in communication with a WDOH representative. • Approvals subsequently obtained, water plant is appropriately permitted. • Corrective action included personnel briefings held on proceeding "at risk" and obtaining environmental approvals have been held.[7]	While CHPRC has as part of its corrective action process formally repudiated the practice of "proceeding at risk," that is, initiating construction activities without first obtaining all permits required by State and federal law, it now raises this very practice as a defense in the instant matter. CHPRC apparently ignores the fact that neither the WDOH, nor the federal project staff has authority to grant immunity from complying with applicable law. Furthermore, even if compliance with applicable law could be excused, CHPRC was expressly bound by its obligations in its contract with the

[3] The statement made here and those below are misleading. While WDOH knew of and was consulted on various aspects of the project on several occasions, WDOH also warned in writing on at least two occasions that permits were needed BEFORE constructions was commenced, and that failure to obtain required permits could result in civil and criminal penalties. *See* Report Exhibit 32, para. 8.

[4] The content of CRD M 231.1-1A, Chg 2 (Supp Rev 1) is entirely irrelevant to CHPRC's compliance obligations. The lack of specific citation to the Safe Drinking Water Act in this CRD does not relieve CHPRC from complying with its contract obligations, specifically table J.2, which includes WAC 246-290, and Section H.19, which requires compliance with all applicable environmental requirements.

[5] This statement is only partially correct. It is factually accurate that CHPRC self-discovered and reported to DOE through an occurrence report (some two weeks thereafter) that it had failed to file a Project Report required by State regulations with WDOH prior to commencing construction of the potable water treatment facility. CHPRC **did not** self-discover a second violation of State regulations by failing to obtain a required construction approval from WDOH prior to commencing construction. CHPRC did self-discover and report that it commenced construction without obtaining a NEPA CX determination, but did not report that it hadn't even applied for the determination prior to commencing construction. CHPRC failed to self-discover that it did not verify existence of a valid cultural resources review prior to commencing construction.

[6] It's difficult to conceive how communications can accurately be characterized as "inclusive." This implies that CHPRC informed the WDOH that it had commenced construction in April, as has been factually established. Why then would the WDOH write its July 8, 2010 letter stating that it appeared that construction had began without required permits, and warning that this was illegal?

[7] It is factually accurate that CHPRC as part of the corrective actions it undertook in October 2010 to address the then known violation of State drinking water regulations, briefed members of its management staff and informed them that "proceeding at risk" could not include doing work that violated law. Curiously,

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	relating to this issue also had DOE on distribution. Supporting e-mails and meetings: • Weekly 100K Project Schedule Meeting-Tuesdays at 11:00 AM w/DOE in attendance • Weekly 100K Infrastructure Project Schedule Meeting-Thursdays at 12:00 • 10/6/09 - Meeting: CHPRC w/WDOH & DOE – Discuss Permitting Requirements • 4/12/10-PNL approves via email extension of existing blanket Biological Review to 5/15/10 • 4/21/10-Email Balone (DOE-RL) to Kennedy and Edington (CHPRC)-direction from DOE for CHPRC to draft up Notice to Proceed for the Import Water Line • 5/18/10-CHPRC EP Management meets with WDOH to discuss 100K Potable Water Treatment Facility. If Project begins construction prior to approval, doing so is "at risk" of rework. • 5/24/10-PNL notifies CHPRC via email that ECR #2010-10-073 Biological Review is valid through 4/15/11	A. The assessor states that in interview with the Project Manager, during a teleconference it was agreed to continue working on the potable water system. Also, it was not stated that this decision was unilateral. The Project Manager did not know. This is an interpretation the assessor inferred from the interview with the Project Manager.[8] In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessors that the results of the discussion was to <u>not</u> work on the potable water system further until coordination with WDOH. However, it was explained to the assessor that work would continue on the non-potable components of the system. Therefore, the statement in the report is inaccurate. In the interview, the assessor stated that his interpretation is that even the raw water delivery system is part of the potable system. Despite the assessor's interpretation, the paragraph is nonfactual as written. Management directed the project to <u>not</u> work on the potable water system.	federal government to comply with the requirements of WAC Chapter 246-290. DOE acknowledges, and it is memorialized in the Surveillance Report that CHPRC self-identified and reported its failure to submit a project report to WDOH and obtain that agency's approval prior to commencing construction of the potable water system. However, CHPRC assertion that it self-discovered and reported all violations suggest that it still fails to acknowledge that it failed to obtain the required construction permit from WDOH until well after it had resumed construction activities. This is a separate and distinct violation from that of having failed to obtain project report approval. CHPRC's assertion that it stopped all construction activities on the potable water system on May 18, 2010 and did not resume those activities until it obtained all required approvals and permits is completely inaccurate. Central to this assertion appears to be the notion that the cross-site raw water delivery line and 750,000 gallon water storage tank constructed by the 100K IUUP Project were not part of the potable water system. This is a notion that has been rejected by the State and CHPRC's own legal counsel (see Surveillance Report Exhibit

having previously acknowledged the impropriety of "proceeding at risk," CHPRC seems to now offer the same improper practice as justification for, or somehow excusing its actions identified by this Surveillance Report. *See* answers at S-11-EMD-PRC-001-C01, and S-11-EMD-PRC-001-F01.

[8] The project manager referred to was interviewed on two separate occasions, and on both occasions in response to questions stated that only he and several other CHPRC managers participated in making the decision to resume work on the potable system. All three interviewers present recollect hearing this statement on both occasions. If CHPRC wants now to assert that some member of the teleconference did seek permission from DOE, they should identify the person and attending facts so they might be verified rather than making the bare assertion that the project manager interviewed was mistaken in his statements.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	• 5/26/10-DOE NEPA Compliance Officer signs CX and confirms that cultural and ecological reviews are current CHPRC further acknowledges that this issue was self-identified through CR-2010-1657 and ORPS EM-RL-CHPRC-GENLAREAS-2010-0013. **PROPOSE COMBINING FINDINGS** CHPRC engaged the WDOH in the permitting process prior to construction, and with WDOH's full knowledge, permit approval was not gained prior to construction. However CHPRC concurred that if WDOH had an issue re-work would be required. Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.	The raw water delivery system is a requirement of the fire protection system and therefore would be constructed with or without concurrence from WDOH. The assessor states that construction continued. However, he does not state that construction on the potable water system was stopped.[9] In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessor(s) that the results of the discussion was to not work on the potable water system further until coordination with WDOH. However, it was explained to the assessor that work would continue on the non-potable components of the system.[10] The project stopped work on the potable water system. The raw water delivery system is a requirement of the fire protection system and therefore would be constructed with or without concurrence from WDOH.	28, and 2006 letter from WDOH to DOE River Corridor Project). The fact that off-site construction activities were continuing on the skid mounted water treatment system, and on-site construction activities were continuing on the raw water delivery system and tank are clearly documented in the Surveillance Report and its Exhibits. *See* Exhibit 23, et al. CHPRC's request to consolidate Findings 1, 2, 3, 4, 5, 9, 10, and 13 is rejected. Each of the Findings document separate and distinct violations of contractual or other obligations. Combining the Findings could lead to a failure to adequately evaluate and address each deficiency during the corrective action process.

[9] This is an inaccurate and disingenuous statement. CHPRC's stopping and then restarting work on the potable water system is clearly documented on pages 14 and 15 of the Report. CHPRC further misleads the reader by relying on its incorrect definition of what constituted the portable and the non-potable portions of the water delivery system. CHPRC would have the reader believe that the raw water import line, 750,000 gallon storage tank and portions of lines that deliver water to both the fire water delivery system and the potable water treatment plant and distribution system are not subject to State drinking water regulations. This is a proposition that the State WDOH and CHPRC's own legal counsel disagree with, and that is fully documented in the Report. *See* Report Exhibits 23, pg.s 6-15 (in particular, pg. 8), 28, and 29, para. 3. Perhaps more significantly, CHPRC knew it was in construction without required permits as evidenced by its written response to a July 8 2010 notification from the state expressing that unlawful construction was ongoing. *See* Report Exhibits 32 and 34.

[10] This statement is inconsistent with CHPRC's weekly ARRA reports that photographically record and expressly report that work was continuing on the potable water system at all times beyond the stoppage of several hours on May 18, 2010. In reality, the entire potable water piping system had been fully installed by the end of the week of August 20, 2010. The permit to construct the system wasn't received until September 15, 2010, almost a month later. *See* Report Exhibits 23, pg. 14, and 37.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
Finding: S-11-EMD-PRC-001-F02 CHPRC failed to apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that it obtaining DOE NCO approval prior to commencing construction was not timely **DISAGREEMENT STATEMENT** CHPRC disagrees that there was a failure to apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of 100K IUUP facilities. Discussions with the DOE NCO were initiated before January 27, 2010. Further, The application of the NEPA process is initiated early on in the decision making process. In this case the preliminary NEPA strategy (i.e., preparation, submittal, and approval of an activity-specific categorical exclusion [CX]) was discussed with the DOE NEPA Compliance Officer in December/January, 2010 (the first two bullets below). The development of a CX includes a description of the activity, as well as evaluation of potential cultural and ecological impacts (third bullet). The submittal of the CX for approval (April 28, 2010) occurred shortly after receiving the necessary additional input regarding cultural impacts (April 22, 2010) (last bullet). Support e-mails • Jansky to Prendergast-	A CX was not submitted for approval prior to start of construction (CX submitted April 28, 2010). However, the necessity of a CX was discussed with the DOE NCO before January 27, 2010. The application of the NEPA process is initiated early on in the decision making process. In this case the preliminary NEPA strategy (i.e., preparation, submittal, and approval of an activity-specific categorical exclusion [CX]) was discussed with the DOE NEPA Compliance Officer in December/January, 2010 (the first two bullets below). The development of a CX includes a description of the activity, as well as evaluation of potential cultural and ecological impacts (third bullet). The submittal of the CX for approval (April 28, 2010) occurred shortly after receiving the necessary additional input regarding cultural impacts (April 22, 2010) (last bullet). Support e-mails • Jansky to Prendergast-Kennedy/Rodriguez January/12/2010 Asking about APE for CX • Jansky to Russell January 27, 2010 mentioning CX development and waiting for CRR • Jansky to Prendergast-Kennedy April 12, 2010 asking about CRR • Rodriguez to Jansky April 22, 2011 CRR approval	CHPRC's request to modify Finding F02 is rejected. By its own admission in its Factual Accuracy Analysis (see column immediately at left), CHPRC did not submit its CX application until April 28, 2010, a date by which construction had already began on portions of the water treatment facility. CHPRC's proposed rewording of the finding language is troubling. It appears to contemplate that the failures involved only failing to obtain signatures on documents, and completely ignores that the actions taken circumvented the NEPA analysis process and WDOH review of designs of a public drinking water system. These are both processes that serve as checks and balances calculated to protect human health and the environment and that should have occurred before construction activities began.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Kennedy/Rodriguez January/12/2010 Asking about APE for CX • Jansky to Russell January 27, 2010 mentioning CX development and waiting for CRR • Jansky to Prendergast-Kennedy April 12, 2010 asking about CRR • Rodriguez to Jansky April 22, 2011 CRR approval **PROPOSE COMBINING FINDING** Using the Fast Track Project process, CHPRC did not gain final signatures for the WDOH permit and the DOE NCO approval for NEPA Categorical Exclusion in a timely manner. Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.		
Finding: S-11-EMD-PRC-001-F03 Upon discovery of its failure to meet environmental regulatory requirements, CHPRC failed to recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that these activities (the analysis of causes) were not completed in a timely manner. Meaning that they were not completed within 45 days per CHPRC procedures. **DISAGREEMENT STATEMENT** CHPRC disagrees that there was a failure to recognize the extent of condition, perform analysis of causes, or to implement corrective actions. CR-2010-11340, Initiation of Potable Water Line	It took nearly 5 months to publish the final report. However, preliminary corrective actions were entered into CRRS within approximately 3 months (see CR-2010-1657). Delays were encountered in presenting this issue to the ESRB. Root Cause Analysis EM-RL-CPRC-GENLAREAS-2010-0013 was completed on 10/19/10. The finding implies a broader scope than the Discussion section. Additionally, no evidence is provided about failure to recognize the extent of condition. Several actions were taken to determine if similar issues with drinking water systems were present. The report does not support a conclusion that CHPRC failed to	The paragraphs that describe the significance of Root Cause #2 were rewritten to sound less accusatory and factually more accurate as to quotations used. Language suggesting that CHPRC reevaluate its root cause determinations was removed. CHPRC's requested modifications of language were otherwise rejected. CHPRC's analysis did not, and to date still has not acknowledged its failure to identify WAC 246-290-120 (submit and obtain approval of construction documents prior to start of construction) as part of the extent of condition. Thus, CHPRC continues to not fully understand and appreciate the extent of condition and

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Construction Prior to WDOH Approval, was initiated on 5/3/2010; CR-2010-1608, Initiation of 100K Area Water Treatment System Construction Prior to Completion of Environmental Compliance Reviews/Approvals, initiated 5/18/2010; CR-2010-1657, Potential Adverse Trend-Environmental Requlatory [sic] Requirements for Construction Projects Not Met, initiated 6/7/2010. This last CR resulted in the initiation of Occurrence Report: EN-RL-CHPRC-GENLAREAS-2010-0013. In each of these self-initiated, self –identified reports CHPRC procedures were followed. In each of these reports extent of condition was evaluated, analysis of causes was performed and the corrective actions were identified and implemented. **PROPOSE COMBINING FINDINGS** CHPRC did not complete in a timely manner the analysis of cause(s) for the identified self-reports relating to the 100K IUUP. Meaning that they were not completed within 45 days per CHPRC procedures. Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.	recognize the extent of condition. The assessor states that construction was not discontinued during the period of April 14, 2010 to July 21, 2010, except for a few hours on May 18, 2010. Again, the assessor fails to acknowledge that work on the potable water system was stopped beginning May 20 through June 7, 201, due to communication with WDOH.[11] • Basis: In multiple discussions, email evidence, and the project schedule it was demonstrated to the assessor(s) that work on the potable water system was stopped on or about May 20, 2010 until further coordination with WDOH on June 7, 2010. However, it was explained to the assessor that work would continue on the non-potable components of the system. In interviews the assessor stated that his interpretation is that even the raw water delivery system is part of the potable system. The project stopped work on the potable water system for the demonstrated period of time.	consequently has not taken corrective action to remedy that oversight.

[11] This statement is in direct conflict with documentary evidence contained in the Report's exhibits, including, but not limited to weekly ARRA reports submitted to RL by CHPRC. *See* Report Exhibit 23, pg.s 6-15.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
Finding: S-11-EMD-PRC-001-F04 After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and did not accurately categorize the event.	CHPRC concurs that this finding is partially accurate **AGREEMENT STATEMENT** CHPRC **agrees** that the root cause analysis was not timely. This is the same issue as documented In Finding 3. **DISAGREEMENT STATEMENT** CHPRC disagrees that the report was not filed timely, contained inaccurate information, and did not accurately categorize the event. The Occurrence Report (ORPS report) was filed to document management's concern associated with multiple examples of beginning work on projects without the appropriate permitting documents in place. Individually, neither of the two incidents cited in this management concern meet the criteria for ORPS reporting. DOE RL Facility Representative was notified and did not disagree with SC 4. The reporting criteria used to report this event is: PRC-PRO-EM-060, Reporting Occurrences and Processing Operations Information, Appendix C, Group 10 Management Concerns/Issues, Subset 2: *An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manger or line management to be of safety significance or of concern to other facilities or activities in the DOE complex.* PRC management determined that the *series* of	The Occurrence Report (ORPS report) was filed to document management's concern associated with multiple examples of beginning work on projects without the appropriate permitting documents in place. Individually, neither of the two incidents cited in this management concern meet the criteria for ORPS reporting. DOE RL Facility Representative was notified and did not disagree with SC 4. The reporting criteria used to report this event is: PRC-PRO-EM-060, Reporting Occurrences and Processing Operations Information, Appendix C, Group 10 Management Concerns/Issues, Subset 2: *An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manger or line management to be of safety significance or of concern to other facilities or activities in the DOE complex.* PRC management determined that the *series* of issues was of sufficient concern to warrant submittal of a management concern ORPS report. The determination of significance level was based not on a single event (not reportable into ORPS) but rather on the concern that there had been a series of related issues. Designation of significance level is at the discretion of the contractor management team. 2. The finding is also incorrect in identifying timeliness issues. As stated above, the issue reported was NOT an individual event but rather the determination by management that a series of	CHPRC's request to combine Findings 1, 2, 3, 4, 5, 9, 10, and 13 is rejected. On further analysis, RL concludes that when an event is classed as a Management Concern, the assignment of Significance Category level is a highly subjective matter, and that considerable deference should be paid to the contractor's judgment. RL agrees that timely filing was addressed by Finding F03. This Finding was therefore reduced to an Observation and incorporated in the final Report as Observation O04. CHPRC's procedure PRC-PRO-EM-060 requires notification to the DOE-RL facility representative within twenty four hours of any applicable event. In this case there were two similar events which involved installation of new drinking water systems. The first event occurred on or about May 4, 2010 involving installation of the new water line and associated equipment at the 200 East Area Unsecured Core Area. The second event occurred on May 18, 2010 with the discovery of the installation of the water line and treatment system for the 100K IUUP. Each of these events involved a suspected violation of an environmental law and thus required its own Occurrence Report to be timely filed. In the case of the 100K IUUP the finding asserts that this did not occur. CHPRC's assertion that it had no duty to report until its senior management learned of multiple violations is inconsistent with DOE orders and contractual obligations.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	issues was of sufficient concern to warrant submittal of a management concern ORPS report. The determination of significance level was based not on a single event (not reportable into ORPS) but rather on the concern that there had been a series of related issues. Designation of significance level is at the discretion of the contractor management team. 2. The finding is also incorrect in identifying timeliness issues. As stated above, the issue reported was NOT an individual event but rather the determination by management that a series of events were of sufficient concern to warrant submittal of an Occurrence Report under the Management Concern criteria. The date and time of discovery is reflective of when this series of events were vetted to Sr. Management and the determination made that an ORPS report was appropriate. This is consistent with the expectations of the order and implementing procedure for the criteria used. 3. ALL Occurrence Reports are entered into the CHPRC Issues Management process, as required by PRC-PRO-EM-060. The issue identified in the ORPS report was entered into the CHPRC Issues Management process. It was screened as a Significant Issue, a formal Root Cause Analysis was performed and a Corrective Action Plan developed, the analysis and CAP were vetted through the Executive Safety Review Board, and actions entered into the Condition Reporting and Resolution System (CRRS) for tracking. This information is available upon request from anyone in the DOE complex. Although level of reporting into ORPS may force a certain level of analysis in the Issues	events were of sufficient concern to warrant submittal of an Occurrence Report under the Management Concern criteria. The date and time of discovery is reflective of when this series of events were vetted to Sr. Management and the determination made that an ORPS report was appropriate. This is consistent with the expectations of the order and implementing procedure for the criteria used. 3. ALL Occurrence Reports are entered into the CHPRC Issues Management process, as required by PRC-PRO-EM-060. The issue identified in the ORPS report was entered into the CHPRC Issues Management process. It was screened as a Significant Issue, a formal Root Cause Analysis was performed and a Corrective Action Plan developed, the analysis and CAP were vetted through the Executive Safety Review Board, and actions entered into the Condition Reporting and Resolution System (CRRS) for tracking. This information is available upon request from anyone in the DOE complex. Although level of reporting into ORPS may force a certain level of analysis in the Issues Management System, it does not prevent the contractor from performing a higher level than required by ORPS. 4. A Significance Category 4 ORPS report is submitted as a Notification/Final report. The issue description provided meets the requirements and expectations of a Significance Category 4 report in the level of information provided. If this report had been filed as a Significance Category 3 report, the description would have remained the same. Contact names	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Management System, it does not prevent the contractor from performing a higher level than required by ORPS. 4. A Significance Category 4 ORPS report is submitted as a Notification/Final report. The issue description provided meets the requirements and expectations of a Significance Category 4 report in the level of information provided. If this report had been filed as a Significance Category 3 report, the description would have remained the same. Contact names are provided if additional information is needed by the reader. (The Issues Management process also requires the RCA/CAP development within 45 days of screening. Regardless of whether this was reported at a higher level in ORPS or not, the analysis was completed. See response to Finding 3) The finding is technically inaccurate and in some sections contains opinions and conclusions bases on inaccurate understanding of what was actually reported. Although the assessor may choose to disagree with the significance category, the RL POC, who is the entity who actually has a say in 1) category and 2) SC level, agreed with the determination. As for performance of analysis – the statement is correct – no analysis is required on an SC 4 report. An SC4 report is required to be put into the Issues Management system, screened, and addressed appropriately. That was done, and in fact it received a Root Cause Analysis	are provided if additional information is needed by the reader. The finding is technically inaccurate and in some sections contains opinions and conclusions bases on inaccurate understanding of what was actually reported. Although the assessor may choose to disagree with the significance category, the RL POC, who is the entity who actually has a say in 1) category and 2) SC level, agreed with the determination. As for performance of analysis – the statement is correct – no analysis is required on an SC 4 report. What IS required is that an SC4 report is required to be put into the Issues Management system, screened, and addressed appropriately. That was done, and in fact it received a Root Cause Analysis demonstrating the process worked. Date and time of discovery is correct – this is consistent with interpretations of how to apply this criteria.	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	demonstrating the process worked. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.		
Finding: S-11-EMD-PRC-001-F05 CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it failed to include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** This is a timeliness issue and is based on Fast Track Project initiation. **DISAGREEMENT STATEMENT** CHPRC disagrees that this is a stand-alone finding. The following constitutes an error in development of the implementing documents and is a contributing factor to Findings 3 and 4. • 100K IUUP FES documents included schedules for obtaining approvals for the construction of the drinking water system from the WDOH. The EAS form completed in July 2009 identified the requirement for a NEPA clearance and approvals from WDOH, yet the method of complying with these requirements were not passed down into the PEP. • Actions necessary to timely comply with the NEPA requirements were not included in the PEP or FES. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding		CHPRC's requested modifications of language are rejected. CHPRC's response suggests that it seeks to justify or excuse its non-compliance with the NEPA requirements because the project had an "accelerated schedule." There is no applicable contract modification which could have allowed the non-compliance to which CHPRC has hereby admitted. CHPRC's suggestion to combine the three findings based on the common element of "timeliness" is rejected. While this Finding, involves timeliness, it is primarily concerned with the lack of compliance with NEPA requirements. Fundamental compliance with NEPA obligations is separate and distinct from timeliness of other activities and for that reason this Finding will not be combined with the others suggested by CHPRC.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	timeliness should be combined.		
Finding: S-11-EMD-PRC-001-F06 CHPRC proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment Facility, as designed, did not comply with applicable contract standards, and was otherwise defective.	CHPRC does not concur that this finding is accurate. This finding is inaccurate. **AGREEEMENT STATEMENT** None. **DISAGREEMENT STATEMENT** CHPRC disagrees that it proceeded with fire protection system construction activities knowing that the fire protection system for the Potable Water Treatment Facility, as designed, did not comply with applicable contract standards, and was otherwise defective This project was a Fast Track Project. At the conclusion of the project the installation was completed, as designed, complying with applicable contract standards and was not otherwise defective. **PROPOSED FINDING** None. Delete this finding.		The language of this finding was rewritten to sound less accusatory and to be factually more accurate. CHPRC's requested modifications of language were otherwise rejected. The response suggests that if a project is proceeding on an accelerated schedule, that compliance with applicable contract requirements can be waived provided that at the conclusion of the project it meets all requirements and is not otherwise defective. This is incorrect. All applicable CHPRC contract requirements must be met unless a contract modification, signed by the DOE-RL Contracting Officer or other individual with contracting officer authority, has been effected. This, of course includes such requirements which apply during the construction phase of a project. CHPRC's response does not deny the factual accuracy of the finding that contract requirements were not met during the construction of the fire protection system for the 100K potable water treatment facility. The statements of CHPRC's own fire protection engineering firm and its fire protection engineer/deputy fire marshal assigned to this project clear established that the designed on which construction was initiated was defective in multiple ways, and that management was informed of the defects prior to commencement of construction.

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Finding: S-11-EMD-PRC-001-F07 The CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.	CHPRC does not concur that this finiding [sic] is accurate. This finding is inaccurate. **AGREEMENT STATEMENT** None. **DISAGREEMENT STATEMENT** CHPRC disagrees that the work stoppage was not properly executed. A formal Stop Work in accordance with DOE-0343 was never invoked.[12] CR-20101-3049 was written to document issues with the 100K – Fire Suppression System. At all times the CHPRC followed procedure PRC-PRO-QA-052 *Issues Management*. Actions were developed such that once complete that portion of the fire system upgrade could be restarted. **PROPOSED FINDING** None. This finding should be deleted.	Premise of finding seems to be that approved revisions to CRRS actions cannot occur, and judgment cannot be applied by senior management in executing or revising "necessary corrective or compensatory actions". • Note that project was reassigned a DFM, obtained a contract FPE, resubmitted design media for each system, obtained approval and remedied issues on each system prior to resuming construction on that system. • Finding premise seems to be that a change to a CRRS item equates to violation of DOE stop work procedure.	The language of the last paragraph of this Finding was rewritten. The term " . . . prior to completion . . . " was substituted for " . . . in violation of the terms . . . ". CHPRC's requested modifications of language were otherwise rejected. The CHPRC website directs readers to DOE-0343 regarding stop work orders and implementation thereof. No other CHPRC procedure appears to exist regarding stop work orders. DOE-0343 contains language that allows a certain amount of flexibility and discretion and the assessors recognize that fact. The assessors also acknowledge that CHPRC uses its management procedure in addressing this issue. One part of the "premise" of this Finding, however, is that although CHPRC used its applicable procedure it apparently did not follow it in this case. Appendix H of PRC-PRO-QA-052 is a template for those individuals needing to perform an apparent cause analysis. Section 6.0 of that appendix states, in relevant part, "Remedial Actions* Identify action(s) that address the identified issue." In the Apparent Cause Analysis prepared as part of CR-2010-3049 it states near the bottom of page 2 of 3, "Closure of the Corrective Actions outlined in CR-2010-3049 is required to lift the Stop Work Order and resume work on the Fire Suppression System Upgrade Project." During the course of this surveillance one of the assessors met in a

[12] The deputy fire marshal referred to stated she understood that work was stopped pursuant to DOE-0343, and that was certainly what she had requested. If it can be determined that, as CHPRC states above, that it actually didn't stop work pursuant to DOE-0343 after being requested to do so, this may constitute a new and separate finding.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
			one on one meeting with the former CHPRC Chief Operating Officer (COO) concerning this surveillance. Among other matters this stop work order was addressed. Regarding the quote above the assessor asked the former CHPRC COO "is this a qualified statement?" The CHPRC COO stated "no." The assessors share the former COO's view of the statement and believe that it was intended, as written, to mean that CHPRC could not restart any portion of the work on this project until all the items identified in the Apparent Cause Analysis Recommended Corrective Action Items were completed. If that was not the case then why was it worded in such a broad and all inclusive manner? In support of this position is the language of Section 5.0 Step 3 paragraph 3 of DOE-0342 which states, "Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented* in accordance with Contractor procedures (*logbook or other established method of reporting/tracking/communicating safety issues and corrective actions management).
Finding: S-11-EMD-PRC-001-F08 The CHPRC 100K IUUP did not follow DOE, CHPRC and 100-K procedures during the design review process.	CHPRC concurs that this finding is accurate. **AGREEMENT STATEMENT** CHPRC agrees that in implementing the Fast Track Project not all procedures were explicitly followed. **DISAGREEMENT STATEMENT** None	The integration of safety and environmental management is outlined in PRC-MP-MS-003, *Integrated Safety Management System / Environmental Management System Description.* Per, that document, ISMS stands for the Integrated Safety Management System. PRC-MP-MS-003 explicitly calls for identification of requirements and controls related to fire protection. The discussion identifies more of an implementation problem than a system problem.	The language of this Finding was rewritten to be technically more accurate. Paragraphs that originally discussed the results of field reviews of installed systems was determined to be irrelevant and was removed. CHPRC's requested modifications of language were otherwise rejected. The principle question at issue here is why procedures were not followed during the design

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	PROPOSED FINDING None. Finding statement is factually accurate but could be more specific by stating "Fire Protection procedures…"	Accuracy could be improved by using the intended program title and characterizing the issue as one of implementation rather than one of inadequate program. Revise the first sentence on page 37 to read: Integration of fire protection requirements is a weakness in the implementation of the CHPRC Integrated Safety Management System (ISMS). Alignment of MSA fire protection procedures and expectations for approvals prior to construction were not consistent with CHPRCs procedure set that includes flexibility for procurement and construction at risk. Project was intentionally executed as a fast track project with management endorsement of risk. Cascade fire protection, a sub to Grant construction, installed the building sprinkler line and heads in an unapproved fashion. This was remedied. The 100K IUUP FPE/Deputy Fire Marshal participated in the reviews of the installation documents. That individual served as a liaison between the project and the HFMO. A meeting with the HFMO to discuss the change the fire line from 12-inches to 8-inches was conducted in March 2010 timeframe. In addition, the 100K IUUP and HFMO conducted a follow-up meeting with Dale West (DOE-RL Fire Protection Engineer) to further discuss the issue for approval. Design document was submitted to DOE. The project relied on DFM for direction.	review process. Procedures that were not followed involved more than just fire protection procedures, and hence the request to narrow the language on procedures is rejected. Therefore, this finding will remain as a stand-alone finding. The 100K water distribution system was installed without a recorded 100% design review by the HFMO. A twelve inch diameter water main is required by SCRD 420.1B. The HFMO does not have the authority to waive this requirement. Only a contracting officer or person with contracting officer authority may waive such a requirement.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		FPE's assistance to the 100K IUUP was provided with any/all information available at that time.	
Finding: S-11-EMD-PRC-001-F09 The CHPRC 100K IUUP did not follow DOE and CHPRC procedures during the permitting process.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that procedures were not completely followed in that signatures were not obtained prior to the start of construction. **DISAGREEMENT STATEMENT** CHPRC disagrees with this statement in that it makes it appear the whole procedure was ignored. This is inaccurate. In reality only the signatures were not obtained. Once identified, the Project responded with a very detailed, systematic, and rigorous compliance process prior to the Facility going into operation. This is discussed in the response to Finding 1. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.		The language of this Finding was rewritten to be more technically focused and accurate. The language of the discussion section of this Finding was expanded to provide a more objective analysis and clearer explanation of relevant facts. CHPRC's requested modifications of language were otherwise rejected. The response admits the finding but downplays the significance of following applicable procedures and contract requirements. It suggests the construction manager had completed all applicable forms as required by MSC-RD-8589 and MSC-PRO-24889 except for obtaining necessary signatures prior to starting construction. The response provides no explanation, by way of factual accuracy, as to why these forms were not filled out prior to construction. Following the applicable procedures that would have lead to obtaining approval signatures provides for completing important reviews of proposed construction activities to assure compliance with critical safety standards. Failing to follow procedures and obtain signatures denies protections that would otherwise be afforded human health and the environment. The principle issue addressed by this finding is

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
			"why the construction manager did not get the necessary **reviews** and signatures on these forms and chose to proceed to construction without them?" That question is left unanswered by CHPRC's response.
Finding: S-11-EMD-PRC-001-F10 The CHPRC 100K IUUP installed water distribution system piping that did not meet contractual requirements previous to applying for and receiving approved exemptions and equivalencies from RL.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that the installation of the water distribution system approvals were not obtained in a timely manner. **DISAGREEMENT STATEMENT** CHPRC disagrees that contractual requirements were not met. In applying the Fast Track Project process, the water distribution system piping has been installed and meets all contractual and regulatory requirements including obtaining the approved exemptions and equivalencies. **PROPOSE COMBINING FINDINGS** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding timeliness should be combined.	Discussions with the HFMO and the FPE/DFM took place to discuss the issue The assessor states that the decision for the fire water distribution system was unilateral to CHPRC. However, the author was informed in interviews that a meeting with HFMO was held and concurrence gained to proceed with both the 8" fire loop around 105KW and the non-looped system around 105KE. No minutes were provided from the meeting. The Project Engineer provided testimony to the assessor(s) that a meeting was conducted with HFMO and concurrence was gained for the exceptions to the fire distribution system as described above.	The language of this Finding was rewritten to to be more technically accurate. CHPRC's requested modifications of language were otherwise rejected. The CHPRC response suggests a lack of understanding or disregard for contractual obligations. The response suggests that since the project was "accelerated" CHPRC somehow met all contractual and regulatory requirements including obtaining the approved exemptions and equivalencies. Simply taking the position that the water distribution system now complies with all applicable requirements (a position that has yet to be verified) does not equate to complying with regulatory requirements to obtain exemptions and equivalencies at the appropriate times. The CHPRC response also fails to mention that a DOE FPE and the DOE-RL Contracting Officer both informed CHPRC of the HFMO's lack of authority to grant any deviation from CHPRC contract requirements.
Finding: S-11-EMD-PRC-001-F11 The CHPRC proceeded in the	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC concurs that construction proceeded	Initial building finish schedule did not involve FPE/DFM for approval. Note that this finding should be combined with 6, 8, 9, 10, as they all deal with construction	The language of this Finding was rewritten to to be more technically accurate. CHPRC's requested modifications of language were otherwise rejected.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
construction of the Potable Water Treatment Facility structure prior to the review and approval of the design by a qualified FPE /DFM.	prior to the complete review and approval of the design by the FPE/DFM. DCNs had FPE sign offs, but DFM approvals were not obtained in all cases as required by MSC-RD-9118, *Fire Protection Design/Operations Criteria.* **DISAGREEMENT STATEMENT** CHPRC disagrees that this is a stand- alone finding. **PROPOSED FINDING** None.	activities being executed too early.	CHPRC's response fails to acknowledge that each of these findings involves separate fundamental issues. All three findings noted deal with "procedure compliance" as do all sixteen findings, three observations and the overarching concern. Specifically, though, this finding addresses the issue of the lack of required review and approval of the Potable Water Treatment facility structure by a qualified Fire Protection Engineer/Deputy Fire Marshall prior to start of construction. The basic question of this finding is "Why did CHPRC choose to start construction without obtaining required review and approval? For CHPRC to take the position that this finding only deals with "procedure compliance" strongly suggests that CHPRC does not comprehend the essence of the finding. Failure to comply puts worker safety at risk.
Finding: S-11-EMD-PRC-001-F12 CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing	CHPRC does not concur that this finding is accurate. This finding is inaccurate. **AGREEMENT STATEMENT** Page 46: CHPRC **agrees** with the comment in the discussion in Chapter 2 that the FSAR needs clarification on the description of the new Water Treatment Facility to ensure consistency with the design as built configuration. **DISAGREEMENT STATEMENT** CHPRC **disagrees** that construction proceeded without identifying and resolving all appropriate USQs.	Page 45: The text used in the surveillance report contains four separate issues summarized below: Issue 1: The timeline of application of USQ products to the project demonstrates appropriate implementation of the USQ process. This timeline of USQ process application shows that only site preparation work was performed prior to receipt of RL approval of a safety basis addressing the installation and operation of the new fire water system. The site preparation work was addressed in the USQ process under USQ number 0110-2010. The safety evaluation report from RL (10-SED-0080) approving the installation and operation of the new fire water	CHPRC's requested modifications of language were rejected. CHPRC was unable to provide the USQ review which was required. On September 13, 2011 CHPRC declared positive USQ 0225-2011 for this issue. Therefore, Issues #1, 2, and 3 remain valid, as noted below. CHPRC has re-analyzed the water leakage rate in report DD-50551, which concludes that maximum credible water flow is 6, 693 gallons per minute – an increase of 446 percent. This is a discernable increase and should have received a USQ Evaluation.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
radioactive materials, has not been evaluated for USQs.	Basis (Page 45): Issue 1: "This Team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review." We disagree. Records available that demonstrate that all work was appropriately evaluated under the USQ process. Issue 2: "Can the new system provide excessive water, such that any leaked water could enter the K West Basin and cause an overflow?" We disagree that changes associated with the fire water system flow capability can create the postulated event. Issue 3: "Further, the CHPRC nuclear safety staff stated that no USQ screenings or evaluations address these issues." We agree that USQ determinations or screenings were not performed for the Issues identified in Issue 2, but we believe that no such USQ screening or determination was required because the scenario postulated by RL was not judged to be possible because of the topography. Issue 4: "Since being informed of the issue, CHPRC has not provided evidence of entering the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203(g). We agree that the potential inadequacy of safety analysis (PISA) process was not entered, but we believe that entry into the PISA process was not required, in this case, as allowed for by the RL-approved PRC-PRO-NS-062, Unreviewed Safety Question Process, since the scenario was not judged to be possible because of the topography.	system stated: "The update reflects planned electrical and water distribution system upgrades to improve safety, and allow for the existing systems to be demolished. These upgrades have been reviewed and will support fire protection and suppression, and electrical safety issues." Conclusion Based on the above, the Review Team concludes that the annual update appropriately describes the 1 05-KW Basin, and residual hazards are within RL guidelines. Therefore, the Review Team recommends that the RL Manager, as the designated approval authority for this facility, approve the submittal, as amended by KBC-45852, Revision 0." Revisions to the system subsequent to the receipt of the SER were evaluated under the USQ process when inside the 100K fence area demarcating the nuclear facility and by the management of change process when outside of this fence line. A cross-walk demonstrating that that all revisions to the design were considered under the USQ process was provided to a member of the RL assessment team on 4/28/2011. Prior to tie-in another USQ was performed as documented in USQ 216-2010. The approach implemented through this time-line is consistent with the RL-approved USQ process (PRC-PRO-NS-062) which states: "Design Change Notices (DCN) and Facility Modification Packages (FMP) that will be either 1) USQ reviewed prior to implementation at the	While topography, and careful placement of the water tank, will prevent overflow events from the water tank, this issue was not addressed for the water lines. Topography near the southeast corner and near the west wall of the Basin would direct any leaked water toward the Basin. The event is possible, and should have received a USQ Evaluation. Further, this judgment was not developed until after RL issued the draft Surveillance. On September 13, 2011, CHPRC declared positive USQ 0225-2011 for this issue. CHPRC did not enter this into the PSIA process until after they received this draft Surveillance for factual accuracy review. The issue regarding adequacy of USQ review is one of timing – USQ -0025-2011 was done against Revision 0 of DD-47929 that was approved on 12/27/2010. Yet, the USQ screen which relied on this calculation was completed on 10/20/2010. Further, DD-47929 Revision 0 actually has four dates: Originated 12/27/2010, Checked 10/13/2010, and the last page has a notation for Revision 0 of 12/28/2010. This discrepancy in dating means that RL cannot determine what issues actually received the USQ Evaluation.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	Basis (Page 46): The USQ (0025-2011, Rev. 0) was completed for several DCN's that had been issued during installation of the water system. Consistent with PRC-PRO-NS-062, initially these changes were exempt from the USQ process. Upon completion of the installation a document review of all the DCNs was performed and captured in DD-48931. As stated above both the document and USQ was provided to RL. RL stated they were not sure that the USQ really specifically addressed the change; subsequently the USQ was revised to Revision 1 and provides further clarification of the review. Basis (page 47): The actual calculation in question DD-47929 was approved on 10/11/2010. The USQ screen on this calculation was completed on 10/20/2010. The ECR for the calculation was not issued until two months later on 12/28/2010. The USQ screener reviewed the calculation on the release date and signed the form as required by the process. In addition, there is no basis for the footnote discussion. **PROPOSED FINDING** None. Delete this finding.	facility, or 2) incorporated into a facility modification or new facility design that will be authorized by RL in a SER so long as the DCN or FMP do not modify an existing hazard category 1, 2, or 3 nuclear facility prior to RL issuance of the SER. Changes to the facility or partial installations made prior to the receipt of the SER are subject to the USQ process." Using this provision of the RL-approved PRC-PRO-NS-062, the 100K Area Infrastructure Upgrade Hazards Analysis (KBC-43475, Rev. 1) and a KW Basin FSAR revision (HNF-SD-WM-SAR-062, Rev. 15) were developed to support this facility modification. These documents address the potential for water releases that result in an overflow from the K-Basin. The FSAR revision was reviewed and approved by DOE-RL with a SER (10-SED-0080). The system did not begin operating prior to DOE-RL approval of the revised safety basis. Since the USQ records and timeline show appropriate implementation of the USQ process, CHPRC requests that this issue be removed from the report. Issue 2: In accordance with 10 CFR 830, a review of the supporting Hazards Analysis, KBC-43475, Rev. 1, 100K Area Infrastructure Upgrade Hazards Analysis (HA), was performed. There were no new accident scenarios identified by the HA Team so the Team believed that the FSAR accident scenarios remained bounding and there was no need to carry forward any additional analysis. This analysis specifically identified in the event related to a large leak from the 750,0000 gallon water supply tank (Event 3.3)	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		that the general terrain would preclude water from such ruptures from entering the K Basin and causing an overflow. The HA also identified other smaller events that potentially could cause some water to flow into the basin, but such external ruptures were judged to not create a flow into the basin greater than the overflow accident already evaluated in the safety basis caused by the rupture of an 8-inch line internal to the facility. (The internal line feeding the basin resupply line was not modified as a result of the work, and its flow remains limited to the flow rate of 8-inch piping.) Based on the hazards analysis developed to support the 100K fire water project, and referenced in the approved safety basis, CHPRC judged that the event described by RL could not create an overflow condition from the basis that would exceed the already analyzed condition. Subsequent to the raising of this concern, CHPRC at the request of RL has prepared additional analyses to evaluate several subsequently postulated potential concerns raised by the RL staff. These analyses confirm (DD-50496, DD-50551 and DD-50618) that the initial judgment of the hazards analysis is correct that fire loop water breaks would not create a flow into the basin greater than that already postulated to result from the internal supply line break. This conclusion was also documented in two subsequent USQ determinations performed at CHPRC management request. (USQ 205-2011 and 0220-2011). Since the original hazards analysis considered multiple types of water breaks and concluded that these breaks would not provide a water flow	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		into the basin exceeding that already postulated, and since all subsequent analysis confirms the conclusions of the hazards analysis were sound. CHPRC requests that this issue be removed from the report. Issue 3: As stated in the response to Issue 2 above, there was no mechanism identified in KBC-43475 to create an excessive water flow condition that could result in overflowing the basin at a rate that exceeds that already postulated for an internal line break. Moreover, changes were evaluated in the USQ process as identified in the response to Issue 1. As such, there is no basis in the RL-approved USQ process (PRC-PRO-NS-062) for performing a USQ on this issue. Issue 4: This issue was not entered into the PISA process as allowed for under the RL-approved USQ process. This process allows for facility management to determine if the condition could represent a PISA. If facility management determines that there is no potential for a PISA to exist, then PRC-PRO-NS-062 allows that the PISA process may be exited. Based on the information from the original hazards analysis developed in support of the 100K project, and referenced in the safety basis, CHPRC facility management determined there was no PISA potential and exited this process in accordance with PRC-PRO-NS-062. Since performance of the PISA process was not required, in this case, in accordance with the RL-approved USQ process, CHPRC requests that is	

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		issue be eliminated from the report. Page 46: The USQ (0025-2011, Rev. 0) was completed for several DCN's that had been issued during installation of the water system. Consistent with PRC-PRO-NS-062, initially these changes were exempt from the USQ process. Upon completion of the installation a document review of all the DCNs was performed and captured in DD-48931. As stated above both the document and USQ was provided to RL. RL stated they were not sure that the USQ really specifically addressed the change; subsequently the USQ was revised to Revision 1 and provides further clarification of the review. To support closure of the issues identified above, a review of the supporting Hazards Analysis, KBC-43475, Rev. 1, 100K Area Infrastructure Upgrade Hazards Analysis, was performed. Section 2.1, states that the Water Line and Filtration Subproject will provide a new water supply for the 100K Area. This new pipeline will transfer water from the 600 Area export water line. A new 750,000-gallon raw water storage thank will be installed, and equipment will be installed to provide potable water, fire protection and service water for fire protection, and 105-KW Basin makeup water (for nuclear safety) from this new supply. New underground piping distribution systems will be installed to supply the potable water and the fire water/service water throughout the 100K Area, and will include a fire water main loop around the 105-KW Basin and tie into the existing system at CVDF.	

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		Section 2.1.1 of KBC-43475 states that the design flow rate of raw water originates from Helens Junction to the Water Treatment Plant at 100K. The water treatment plant provides a water flow rate of 1,500 gpm for potable water, service water for fire protection, and service water for emergency 105-KW Basin water makeup. It goes on to state that service water for emergency 105-KW Basin makeup water demand shall be 1,500 gpm, as specified in HNF-SD-WM-SAR-062, Section 5.5.3.3.6. The HA tables in KBC-43475 identify several scenarios with the potential to impact the basin overflow event, including flooding and pipe breaks outside the facility. Noting that the new fire loop could be fed from two directions, any flooding of the outside terrain would have to overcome slope, spreading, infiltration of the soil and the height of the basin foundations before it could dilute the basin water and cause an overflow. Any flooding immediate adjacent to the facility would come from the 8" supply line. If this line breaks some of the water would be released to the water column, and as such the total flow into the basin would be reduced in comparison to a break of the 8" line inside the facility. Another postulated event could include the new water supply loop around the facility that could suffer a double-ended shear. This newly installed loop at its closest to the building is over 100 feet from the exterior of the 105-KW Building. This loop remains physically buried in the ground. As identified in the HA a more likely scenario would be impact to a fire hydrant by a vehicle. The closest fire hydrant is ~ 105 feet from the building with the majority being	

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		150 to 400 feet from the facility. It would be a tortuous path for the water from a broken fire hydrant to reach the basin; for example, it would have to flow over various mounds, flow around other outside facilities, and over the facility foundation (which includes a 4" curb). Therefore, there is no identifiable mechanism to cause the water flow from such a double-ended shear to provide a flow into the basin at a rate exceeding the already postulated 2000 gpm associated with the existing accident analysis. Section 2.6 of the 105-KW Basin FSAR states that a large demand for water make-up is supplied through an 8-in. water make-up line from the service water, which can supply approximately 1,500 gal/min. This is consistent with the previous water supply system entering the 105-KW Building. Section 3.4.2.9, Overflow of Radioactive Water From 105-KW Basin, describes an accident scenario where a pipe breaks, or off-normal operation results in an overflow of the fuel storage basin water. In this analysis, a flow rate of 2,000 gal/min is assumed to go unchecked for 8 hours, resulting in a total overflow (assuming an initial, nominal basin level of 16 ft.) of approximately 606,000 gallons. HNF-SD-NR-TA-011 is the supporting analysis for this event and provides the detail of the scenario discussed in Section 3.4.2.9 of the FSAR, where an overflow accident begins with a complete break of a backup water supply line. This break adds 2000 gal/min to the basin for a period of 8 hours, resulting in a total of 960,000	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		extra gallons added to the basin, causing 606,000 gallons of overflow. This accident results in the formation of a shallow lake about 3.5 inches deep on the average with a surface area of about 5.4 acres outside the basin building. The consequence calculation for this scenario was divided into two parts. The first part is the discharge to the Columbia River and the second part includes the aerodynamic entrainment from the shallow lake. This release is assumed to last for 1 day. The discharge to the Columbia River assumes that all the activity in the pool water enters the river over a 24 hour period. The results of this analysis determine that even if the entire volume that overflows entered the Columbia River, the bounding doses would be no more than 3.3 x 10-3 rem. The airborne emission due to the entrainment and resuspension from the 5.4 acre shallow lake is also assumed to last for 24 hours. The shallow lake could be larger or smaller than was assumed. A portion of the water will soak into the ground. Since the air emissions doses are proportional to the lake area, these doses could be large or smaller. The dose to the Hanford Site boundary includes contributions from both the airborne release and the discharge to the Columbia River. Since the two receptors are actually in opposite directions from the 100K area, this analysis overestimates the site boundary dose. A summary of the dose consequences from the overflow accident is provided on Table 3. For the Hanford Site boundary the calculated dose is 6.51 x 10-6. Additionally, doubling the surface area of the lake would increase the onsite dose to 0.0088 rem; a value below any risk evaluation	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		guidelines. In summary, although it is recognized that the new system has different supply redundancies than the previous system; including electric pumps, a bypass pressure regulating valve and diesel fire pump that provide supply pressure and flow redundancies. However, they do not constitute a parallel flow increase as they share a common distribution system and are staged based on pressure, which remains nominally the same as the previous system. To address the 8 inch vs. 12 inch comment, the following discussion is provided. The issues were addressed through the USQ process. Note that the USQ log is a management tool to track walk-in work of USQs, and is not a comprehensive record of the USQ process. The Hazard Analysis process and Safety Basis Change process are not recorded in the log. The following documents, consistent with the USQ process, addressed the issues raised. Note that several of these documents would not appear in the log. • KBC-43475 100K Area Infrastructure Upgrade Hazards Analysis rev 0 • KBC-43475 100K Area Infrastructure Upgrade Hazards Analysis rev 1 • HNF-SD-WM-SAR-062, Rev 15, K Basins Final Safety Analysis Report • USQ Determination 0025-2011 performed a comprehensive evaluation of design changes. • USQ Determination 0216-2010 evaluated the connection of the fire and potable lines, over several revisions to match	

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		proposed changes. • USQ screening 0245-2010 (Rev. 0 and 1) evaluated the calculation associated with the change to use an existing 8" line in place of the proposed 12" between the CVDF and 105KW loop. Page 47: The actual calculation in question DD-47929 was approved on 10/11/2010. The USQ screen on this calculation was completed on 10/20/2010. The ECR for the calculation was not issued until two months later on 12/28/2010. The USQ screener reviewed the calculation on the release date and signed the form.	
Finding: S-11-EMD-PRC-001-F13 CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.	CHPRC concurs that this finding is partially accurate. **AGREEMENT STATEMENT** CHPRC agrees that the Fast Track Project did not get final signatures in a timely manner. And further, CR-2010-1080, Deficiencies in the Implementation of the Project Execution Process as Required by PRC-PRO-PM-24889, Project Initiation and Execution. This was a self identified issue that followed procedure PRC-PRO-QA-052 *Issues Management*. **DISAGREEMENT STATEMENT** CHPRC disagrees that this is a stand -alone finding. **PROPOSED FINDING** Findings 1, 2, 3, 4, 5, 9, 10, and 13 regarding		CHPRC's requested modifications of language were rejected. It is acknowledged that CHPRC identified this non-compliance in an independent assessment conducted of the CHPRC EPC organization in January-March 2010. (See Surveillance Exhibit 51). This assessment was formally transmitted to the EPC on April 14, 2010 and identified, among other deficiencies, that EPC had not completed the required PEP by that date. One day prior CHPRC placed this item into its corrective action system. Interestingly enough, EPC also started construction and continued construction on that date apparently knowing it had no PEP authorizing any construction activities. The essential question of this finding is "Why did EPC commence and continue construction knowing it had no PEP in effect?"

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	timeliness should be combined.		(NOTE: The corrective action item CR-2010-1080 dated April 13, 2010 allowed EPC until July 22, 2010 to complete and finalize the PEP. ECP completed the PEP on July 22, 2010 and the action item was closed out of the corrective action system on July 29, 2010.) A reading of CHPRC's response to this finding suggests that CHPRC still believes that having a draft PEP during construction of the 100K IUUP was adequate to fulfill contract requirements and that the completion and approval of the required final version was a mere formality. CHPRC's response demonstrates a significant lack of understanding of a critical CHPRC contract provision which unequivocally requires compliance with DOE Order /CRD O 413, 3A. The response also contradicts Section 5.8 of PRC-PRO-PM-24889 Project Initiation and Execution which states, in relevant part, "The PEP is a living document and should be kept current such that the project team and others (e.g., Sr. Management, Client) can read the PEP and know how the project is being executed, not how it was originally planned to be executed. <u>It shall be at a minimum updated prior to the start of each phase of project execution.</u> Emphasis added. This project was nearly completed by the time the PEP was completed and was certainly never updated during any phase of execution. And, there is no provision in these requirements for relaxation or exemption thereof just because a project is "accelerated."

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
			This is a stand-alone issue and the finding will not be combined with others on the basis of "timeliness" as suggested by CHPRC.
Finding: S-11-EMD-PRC-001-F14 CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to completion of cultural resources reviews.	A Hanford Site Excavation Permit for 100K IUUP was approved prior to approval by the Hanford Site NEPA Compliance Officer of the NEPA categorical exclusion.[13] **Discussion** PRC-RD-EP-15332 requires that NEPA review be completed prior to start of construction activities. DOE-0344, Section 5.3 and Appendix E requires that all necessary environmental approvals are in place before the environmental approval of an excavation permit (permit block 11). On March 18, 2010, the 100K-Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP. The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." At the time of the ECO approval of CHPRC Hanford Site Excavation Permit # DAN-3913 (Exhibit 19), the NEPA categorical exclusion for	CHPRC agrees that excavation permits were issued prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer (a signed NEPA categorical exclusion determination). CHPRC disagrees that excavation permits were issued and soil disturbing activity began before completion of the cultural resource reviews. Excavation permits issued for work inside the fence were signed based in part on a valid blanket cultural resource review for the 100 K Area (e-mail, Ellen-Prendergast-Kennedy, PNNL to Michelle Chamness, et al, "FW: BLANKET CERR EVALUATION FOR THE 100-K PROJECT" dated March 30, 2010). Earth disturbance was not begun on the import raw water line outside of the 100 K fence line until after the relevant cultural resource review was completed on April 22, 2010 (See Exhibit 54, e-mail, Annabelle Rodriguez, RL, to Scott Story and Colburn Kennedy, CHPRC, "Notice of Cultural Clearance for the Installation of the 100-K Area Raw Waterline," HCRC # 2009-600-	The content of Finding S-11-SED-PRC-F14 was revised to reflect that CHPRC was relying upon a blanket cultural resources review prepared by PNNL for construction activities performed inside the 100K perimeter fence, and a second cultural resources review also performed by PNNL that supports the NEPA CX determination issued for construction of the cross site raw water supply line outside the 100K perimeter fence. The analysis of the facts in light of this new information does not however, result in elimination of Finding S-11-EMD-PRC-001-F14. The language of the Finding is however modified to read: " . . . and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review." This modification of language more accurately reflects the facts as RL now understands them. It is undisputed fact that on March 18, 2010 the 100K ECO signed an excavation permit that allowed construction activities to begin any time thereafter on the new potable water system inside

[13] CHPRC's comments on Finding S-11-EMD-PRC-001-F014 were revised and submitted to RL by CHPRC's General Counsel on September 1, 2011. CHPRC's original comments discussed ecological resources reviews rather than the relevant cultural resources review. The comments presented above are those provided on September 1, 2011.

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	the activity was not yet approved. The categorical exclusion was approved by the Hanford Site NEPA Compliance Officer on May 26, 2010 (DOE/CX-00015, see Exhibit 48).	018).	the fence. In doing so, the ECO was apparently relying on a blanket cultural resources review prepared in support of CERCLA remedial activities at the 100K Area, and originally issued by PNNL on May 17, 2004. The e-mail documents cited and provided by CHPRC clearly establish that the ECO signed the excavation permit prior to receiving confirmation of the continuing validity of the blanket cultural resources review by PNNL on March 30, 2010. As discussed under Finding S-11-EMD-PRC-001-F01, construction of the potable water treatment facility was not identified as a CERCLA project. Quite to the contrary, CHPRC's EAS Form describing this project explicitly states it is not a CERCLA project. Furthermore, the NEPA CX determination issued in support of the water systems construction explicitly identifies the water treatment system, both inside and outside the fence, as the subject of the CX determination. Given that a CX determination, supported by its own cultural resources review was issued, it is difficult to understand way CHPRC relied upon the older blanket cultural resources review. In any event, the excavation permit at issue was signed prior to confirming a valid review existed, and that act does not comply with CHPRC's procedures.
Finding: S-11-EMD-PRC-001-F15	CHPRC concurs that this finding is partially accurate.	While the finding statement is partially accurate, this issue had been self-identified by the CHPRC. Corrective actions are being addressed	The language of this Finding was revised to be present a more technically correct recitation of facts. The paragraph discussing the

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
The CHPRC does not have an active Memorandum of Understanding (MOU) with the HFMO which has resulted in confusion of the authority, responsibilities, and duties of the HFM.	**AGREEMENT STATEMENT** CHPRC concurs that the finding statement is partially accurate, this issue had been self-identified by the CHPRC. Corrective actions are being addressed through CR-2010-3375 to clarify the roles and responsibilities of the Site Fire Marshal, Fire Marshal's Office, Deputy Fire Marshals, and Qualified Fire Protection Engineers. Corrective action #2 of CR-2010-3375 includes writing a new Administrative Interface Agreement "Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement between the CHPRC, WCH, and MSA. Actions are scheduled for completion by 9/30/11. **DISAGREEMENT STATEMENT** Since the finding issue was already self-identified, this finding should be deleted. **PROPOSED FINDING** None. The finding should be deleted.	through CR-2010-3375 to clarify the roles and responsibilities of the Site Fire Marshal, Fire Marshal's Office, Deputy Fire Marshals, and Qualified Fire Protection Engineers. Corrective action #2 of CR-2010-3375 includes writing a new Administrative Interface Agreement "Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement between the CHPRC, WCH, and MSA. Actions are scheduled for completion by 9/30/11. MOU MSA-CHPRC-0800081, revision 0, *Memorandum Of Understanding, Rev. 0, Between The Hanford Fire Marshal's Office And Other Contractors With Fire Protection Engineers Designated As Deputy Fire Marshals* (CHPRC-080081) was issued on July 17, 2009. The blue sheet cover page on the MOU stated that it should be updated and re-issued in one year. The MOU between the CHPRC and the HFM expired on 7/17/10 and was never reinstated. The MOU described the functions of the Hanford Fire Marshal's Office (HFMO). It also specified activities and responsibilities of the project/facility FPE's and defined the interface role between the HFMO and those FPE's designated as project/facility Deputy Fire Marshals. The RL Supplemental Contractor Requirements Document (SCRD) 0 420.1 B delineates the general functions of the HFMO. The SCRD also references the Fire Marshal roles and responsibilities as contained in the Authority, Responsibilities, and Duties of the Hanford Fire Marshal (a.k.a. Fire Marshal Charter), and requires RL contractors to recognize and	circumstance under which the MOU expired was rewritten to state " . . . as a result of inaction expired one year later." vs. " . . . was allowed to expire one year later.". CHPRC's requested modifications of language were otherwise rejected. An uninformed reader could reasonably conclude that CHPRC has timely, appropriately, and successfully concluded this matter. However, the response completely fails to acknowledge that this action item was originally identified in September 2010 during the stop work associated with the 100K IUUP fire system construction activities. It also fails to acknowledge that this item has been rolled over from its initial corrective action (CR-2010-2597) to a second corrective action (CR-2010-3049) to now yet a third corrective action (CR-2010-3375). As of this writing it is nearly a year since this issue was identified and still it has not been resolved. A fundamental issue of this finding is "Why has it taken a year to successfully close out this action? And, "Upon completion will the action satisfactorily eliminate the confusion of the authority, responsibility, and duties of the HFMO?" CHPRC's response does not come close to answering these questions. RL acknowledges that CHPRC self-identified (and memorialized in CR-2010-3375) the need to clarify the roles and responsibilities of the HFMO. CHPRC assigned the CR a significance level of "opportunity for improvement," which suggests the Contractor does not recognize it obligation to execute a memorandum of understanding with other contractors that

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
		institutionalize the HFM's authority.	addresses the roles and responsibilities deficiencies.
Observation: S-11-EMD-PRC-001-O01 CHPRC had not ensured a complete Lockout/Tagout (LOTO) program for the 100-K Potable Water Treatment Facility construction site.	CHPRC does not concur with this observation. This observation is inaccurate. **AGREEMENT STATEMENT** None. Delete the Observation. **DISAGREEMENT STATEMENT** The safety representative in question was not the LOTO point of contact and was not required to take the training. The CHPRC Safety Representative had completed all required training as required by the Hanford Site LOTO program and was involved throughout with all construction activities. **PROPOSED OBSERVATION** None. Delete the Observation.	The CHPRC Safety Representative had completed all required training as required by the Hanford Site LOTO program and was involved throughout with all construction activities.	CHPRC's request to delete this Observation is rejected. Given the potential adverse worker safety consequences that could have resulted, this Observation should have been originally classified as a finding. The observation states in the opening sentence of the discussion: "CHPRC had not ensured that the prime subcontractor safety representative for the 100-K potable water treatment facility construction site had completed the training requirements of the Hanford Site LOTO program prior to start of work. Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1 Paragraph I. states in part 'prior to start of work the contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RK-92-36 Rev 1 and certification that all training is current." The CHPRC assertion that its safety representative had the applicable training is not relevant. The issue here is that the subcontractor safety representative did not have the requisite training. *This Observation was combined with Observation S-11-EMD-PRC-001-O02 and appears in the final Surveillance Report as Finding S-11-EMD-PRC-001-F15.*

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
Observation: S-11-EMD-PRC-001-O02 CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate briefings.	CHPRC concurs that this observation is accurate. **AGREEMENT STATEMENT** CHPRC agrees with this observation with comment. The CHPRC Responsible Manager provided constant oversight and was maintaining a current JSA in accordance with PRC-PRO-SH-40078. The JSA observed by the assessors had not been updated. No LOTO issues had been identified, no lost construction time, and no recordable issues had been noted. The prime subcontractor's Safety Manager has ensured that safety is a high priority at all times **DISAGREEMENT STATEMENT** **None**	The CHPRC Responsible Manager provided constant oversight and was maintaining a current JSA in accordance with PRC-PRO-SH-40078. The JSA observed by the assessors had not been updated. No LOTO issues had been identified, no lost construction time, and no recordable issues had been noted. The prime subcontractor's Safety Manager has ensured that safety is a high priority at all times.	CHPRC's request to delete this Observation is rejected. CHPRC's response completely sidesteps addressing the issue of the observation. The issue here is the subcontractor did not maintain its JSA according to its contractual requirements. The CHPRC's response does not address that issue. Failure to maintain and provide job briefings from current JSAs constructively denied workers the protection of a functional LOTO program when systems being worked on were energized and presented a significant risk of serious injury or death. *This Observation was combined with Observation S-11-EMD-PRC-001-O01 and appears in the final Surveillance Report as Finding S-11-EMD-PRC-001-F15.*
Observation: S-11-EMD-PRC-001-O03 CHPRC's central environmental management organization failed to respond to and provide environmental compliance analysis and technical advice timely requested by the	CHPRC does not concur that this observation is accurate. This observation is inaccurate. **AGREEMENT STATEMENT** None. Delete this observation **DISAGREEMENT STATEMENT** CHPRC disagrees that the central environmental management organization failed to respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO)	The referenced June 18, 2009 e-mail from the ECO to the NEPA SME does not support the observation. The e-mail was sent specifically to initiate the NEPA process, and the attached environmental activity screening form was provided for its NEPA content. It did not request an evaluation for other environmental requirements. The NEPA review, including necessary cultural and ecological reviews, was initiated in a timely fashion.	CHPRC's request to delete this Observation is rejected. The fundamental question here is did the CHPRC central environmental group respond to the ECO and provide help? If the answer is yes then the next question is what was the extent and form of the help? If the answer is no then the next question is why was no assistance rendered? CHPRC's factual accuracy comments notwithstanding, it is a fact that the ECO stated he received no response to requests for help and

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
100K Environmental Compliance Officer (ECO).	The assessors cannot identify that a timely response was not provided (verbal or otherwise) in response to the referenced August 24, 2009, email from the ECO to the FS&NF Monitoring Manager. **PROPOSED OBSERVATION** None. Delete the Observation.		CHPRC has provided no evidence that suggests otherwise. It is the CHPRC central environmental group's responsibility to find documentation of any response(s) to the ECO's request for its assistance. DOE-RL is under no duty to search for such information beyond those efforts which were made during the course of this assessment (i.e., a request to produce such evidence if it exists). *Due to consolidation of Observations 01 and 02 that originally appeared in the draft Surveillance Report into Finding S-11-EMD-PRC-001-F16, this Observation appears as Observation S-11-EMD-PRC-001-O01 in the final Surveillance Report.*
Observation: S-11-EMD-PRC-001-O04 Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.	CHPRC does not concur that this observation is accurate. This observation is inaccurate. **AGREEMENT STATEMENT** None **DISAGREEMENT STATEMENT** CHPRC **disagrees with this observation. There** is no requirement for the mentioned assessment. Delete this observation **PROPOSED OBSERVATION** None. Delete the Observation. Discussion in report states that "During the Assessment Team's interview with the	A quality assurance (QA) assessment was not completed prior to start of construction, however an assessment was not required. If a QA assessment had been planned and conducted prior to start of work, environmental requirements would have been reviewed only if they were included in the scope of the assessment; e.g. there is no guarantee that the assessment would have included an evaluation of compliance with applicable environmental requirements. The reference for an independent QA Assessment is miss-stated by the authors. During interview with the assessment team, a question was asked about adequate QA support. The	CHPRC's request to delete this Observation is rejected. The assessors have reviewed their notes from the interview with the individual occupying the role of project manager during construction. All three assessors present during the interview agree the project manager stated he requested a QA assessment be done prior to construction and was denied. One assessor's notes state that the project manager was told by the project director that no QA assessment would be undertaken before or during construction of the project. *Due to consolidation of Observations 01 and 02 that originally appeared in the draft Surveillance*

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	individual occupying the role of IUUP Project Manager from November 2009 to April 2010, he stated that he verbally requested that an independent quality assurance inquiry be done of the project prior to start of construction." Factual accuracy review by CHPRC determined that the assessors misunderstood the individual's response to interview questions.	individual being interviewed responded by stating that a request for QA support was initiated via an ICWEA, but the request was not granted. No one is aware of a request for an IA. The project did do a PRB which is discussed in the assessment.	*Report into Finding S-11-EMD-PRC-001-F16, this Observation appears as Observation S-11-EMD-PRC-001-O02 in the final Surveillance Report.*
Observation: S-11-EMD-PRC-001-O05 CHPRC's Project Review Board process failed to evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.	CHPRC does not concur that this observation is accurate. This observation is inaccurate. **AGREEMENT STATEMENT** CHPRC agrees that the PRB process could be improved. **DISAGREEMENT STATEMENT** CHPRC disagrees that the PRB process failed to evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities. On April 7, 2010 a PRB for the 100K IUUP was conducted for work that included "Inside the Fence" activities. The materials presented to the PRB on April 7 contained no mention of applicable environmental or other regulatory requirements. On April 21, 2010 a second PRB was convened to review 100K IUUP work scope not reviewed by the first PRB on April 7. The materials presented on April 21 contained no mention of applicable environmental or other regulatory requirements.		CHPRC's request to delete this Observation is rejected. Without offering reference to any new supporting information, CHPRC first states that it disagrees it failed to evaluate the environmental and fire safety regulatory compliance status before approving construction activities, and then seems to completely contradict this assertion in the paragraph that immediately follows. In that paragraph CHPRC seems to unequivocally admit that no evaluation of either environmental or fire safety compliance status was done at either the April 7, or the April 21 PRBs. RL continues to believe that it would be a rational and useful act for the PRB to use a checklist that evaluates regulatory compliance posture as part of its deliberations, and is surprised that CHPRC is apparently rejecting such an approach. *Due to consolidation of Observations 01 and 02 that originally appeared in the draft Surveillance Report into Finding S-11-EMD-PRC-001-F16, this Observation appears as Observation S-11-*

SURVEILLANCE REPORT STATEMENT	CONTRACTOR'S COMMENTS	SUPPORTING INFORMATION CITED BY CONTRACTOR	RICHLAND OPERATIONS OFFICE DETERMINATION
	PROPOSED OBSERVATION None. Delete the observation.		*EMD-PRC-001-O03 in the final Surveillance Report.*
Contractor Self-Assessment The CHPRC did not perform a formal self-assessment of the issues at the 100K IUUP that eventually resulted in the CHPRC Senior Management issuing a Stop Work.			Although not raised by CHPRC as an issue, after further consideration it was determined that references to Condition Reports and root cause analysis in the original language of this section was non-substantive and otherwise irrelevant. The language was therefore removed.

Jackson, Dale E

From: Jackson, Dale
Sent: Tuesday, November 08, 2011 9:21 AM
To: Nelson, Amy C
Subject: Memo For Finalization
Attachments: Shoop Memo re S-11-EMD-PRC-001.doc

Amy:

This is the memo I mentioned to you a short time ago. The ESTARS concurrence chain should be Jackson/Weil/Corey (or Frey). I will drop an attachment off to you in hard copy.

Thanks,

DEJ

Weil, Stephen R

From: Teynor, Thomas K
Sent: Wednesday, February 29, 2012 12:43 PM
To: Jackson, Dale E
Cc: Corey, Ray J; Dowell, Jonathan A; Weil, Stephen R; Bryson, Dana C
Subject: RE: Rejection of CHPRC's 100K Surveillance Corrective Action Plan

Thank you Dale for the heads up. I will read through the attachment provided and email my comments to you should I have any. Thank you for the opportunity to review.

R/Tom

From: Jackson, Dale E
Sent: Wednesday, February 29, 2012 11:31 AM
To: Teynor, Thomas K
Cc: Corey, Ray J; Weil, Stephen R
Subject: Rejection of CHPRC's 100K Surveillance Corrective Action Plan

Tom:

The 100K IUUP Surveillance Team has reviewed a Corrective Action Plan (CAP) submitted by CHPRC in response to the 100K IUUP Surveillance (S-121-EMD-PRC-001). As explained in the enclosed letter that will enter ESTARS concurrence today, (b)(5) We made substantial comments (for RL use only) (b)(5) and I am available to brief you on those details as well as the enclosure in general if you so desire. Give me a phone call, or you may respond to this e-mail if you like.

Regards,
Dale Jackson
RL-EMD
376-8086
948-5540

Riehle, Dorothy C

From: Jackson, Dale E
Sent: Wednesday, May 02, 2012 9:56 AM
To: Riehle, Dorothy C
Subject: FW: Supplemental Information on CHPRC Incremental Fee Award for 100K IUUP

From: Shoop, Doug S
Sent: Saturday, November 19, 2011 10:44 AM
To: Jackson, Dale E
Cc: Corey, Ray J; Frey, Jeffrey A; Weil, Stephen R
Subject: RE: Supplemental Information on CHPRC Incremental Fee Award for 100K IUUP

Thanks Dale. I appreciate you providing the information and will provide it to Matt McCormick who is the designated Fee Determining Official such that he and the Contracting Officer can take this into consideration in the final fee determination. We appreciate the thorough review by you and the rest of the surveillance team.
Thanks
Doug

Sent with Good (www.good.com)

-----Original Message-----
From: Jackson, Dale E
Sent: Friday, November 18, 2011 01:56 PM Pacific Standard Time
To: Shoop, Doug S
Cc: Corey, Ray J; Frey, Jeffrey A; Weil, Stephen R
Subject: Supplemental Information on CHPRC Incremental Fee Award for 100K IUUP

Deputy Manager Shoop:

At the close of our meeting last month with CHPRC's Chief Operating Officer, you requested that I provide additional information supporting the recommendation that all Incremental Fee available to the 100K Area Infrastructure and Utilities Upgrade Project (Project) be withheld. The information contained in this message is provided in response to that request.

The Project, PSB RL-0041b, was the subject of a surveillance jointly performed by the Environmental Management Division and the Safety Engineering Division of the Richland Operations Office during fiscal year 2011. The Project consisted of three sub-projects each of which was assigned a Performance Objective (PO). The sub-projects were installation of new fire and potable water systems (PO 5a), relocation of an electrical substation (PO 5b), and upgrading the HVAC system for the KW Basin (PO 5c). The Contract provides for award of Incremental Fee for the successful completion of each sub-project, and an additional

Incremental Fee in the event all three sub-projects are timely completed (PO 5d). *See* Contract No. DE AC06-08RL14788, Section J, Attachment J.4, p. 75-76.

Based upon the results of the surveillance, the surveillance team made several recommendations to RL management, including, but not limited to withholding all Incremental Fee available to the Project. While the surveillance and resulting report focused mainly on the activities that occurred under Performance Objective 5a, as explained below, at least four Findings and two Observations that were made are applicable across all of the sub-projects and are thought therefore to justify the recommendation to withhold all Incremental Fee.

S-11-EMD-PRC-001-F04: CHPRC identified environmental compliance requirements (NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan and Field Execution Schedule.

Surveillance Team Comments: *The PEP and FES applied to all three sub-projects. Even if the PEP had been approved (which it was not), it did not sufficiently address environmental regulatory compliance issues in a manner that would satisfy Contract CRD requirements.*

S-11-EMD-PRC-001-F12: CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Surveillance Team Comments: *The required PEP applied to the activities conducted under all three sub-projects and is consequently a departure from CRD requirements applicable to each sub-project.*

S-11-EMD-PRC-001-F14: The CHPRC does not have an active Memorandum of Understanding with the Hanford Fire Marshal's Office which has resulted in confusion of the authority, responsibilities, and duties of the Hanford Fire Marshal.

Surveillance Team Comments: *While arguably less important to the electrical substation relocation and HVAC upgrade sub-projects, the absence of the MOU generally adversely affects safety and is a contractual requirement applicable to all sub-project activities.*

S-11-EMD-PRC-001-F15: CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate Lockout/Tagout (LOTO) notification and briefings.

Surveillance Team Comments: *CHPRC's internal audit of the HVAC upgrade and electrical substation relocation sub-projects (performed after completion of RL's surveillance) confirmed LOTO insufficiency across all three sub-projects. See copy of CHPRC's self assessment attached hereto.*

S-11-EMD-PRC-001-O02: Although requested by a member of the Project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

Surveillance Team Comments: *The request for an independent QA review was global to all three sub-projects and was denied for all three. Had the independent QA review been performed, it is reasonable to expect that some if not all of the deficiencies identified during the RL surveillance would have been self-discovered by CHPRC and prevented. Furthermore, had federal "Reliability Standards for Bulk Electrical Systems" compliance obligations been recognized, reported significant delay of the electrical substation relocation sub-project might have been prevented.*

S-11-EMD-PRC-001-O03: CHPRC's Project Review Board (PRB) process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

Surveillance Team Comments: *The PRB's review made little or no inquiry with respect to environmental, safety, and other regulatory compliance responsibilities. The PRB's review applied to the entire Project (i.e., all three sub-projects).*

RL has received a November 8, 2011 letter from CHPRC requesting payment of Incremental Fee for completion of POs 5b, 5c and 5d. The letter recites CHPRC's intent to not request payment for meeting PO 5a as mitigation for errors it admits it made on planning and executing the 100K IUUP. Since full completion of POs 5a, 5b and 5c are the criteria for payment of Incremental Fee under 5d, CHPRC apparently believes it completed PO 5a in a satisfactory manner (although according to its letter, perhaps not optimally), and is thus entitling it to claim fee for 5d. RL should reject this proposition.

The letter goes on to claim as fact, inter alia, that the completed work met goals that facilitated accelerating clean-up of the 100K Area, and that the government was not harmed by any CHPRC performance lapse. These claims seem at best, disingenuous. While a properly planned and executed project was capable of doing so, none of the 100K IUUP POs were completed by the original deadline of September 30, 2010. Only the one year extension of that deadline has enabled CHPRC to claim any Incremental Fee. The planning and execution errors that CHPRC admits in its November 8 letter resulted in several months of schedule delays, and several million dollars in extra project costs. CHPRC's failure to obtain required environmental permits created substantial contingent liability for the government. Under these circumstance, it is difficult understand how CHPRC can claim its performance resulted in no harm to the government.

While CHPRC arguably met the performance revised deadlines for POs 5a through 5d, it did not do so without the significant and material departures from contractual and other requirements discussed above, and in report S-11-EMD-PRC-001. Under these circumstances,

it is not believed that Incremental Fee is merited for any of the Performance Objectives discussed herein, and certainly not for 5a and 5d.

Respectfully submitted,

Dale E. Jackson
DOE-RL EMD
(509) 376.8086

Attachment: CHPRC Self Assessment, SHS&Q-2011-WSA-10713

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

February 2, 2012

CHPRC-1200377

Ms. Jenise C. Connerly, Contracting Officer
U.S. Department of Energy
Richland Operations Office
Post Office Box 550
Richland, Washington 99352

Dear Ms. Connerly:

CONTRACT NUMBER DE-AC06-08RL14788 – TRANSMITTAL OF REVIEW OF THE 100K INFRASTRUCTURE UTILITIES UPGRADE PROJECT SURVEILLANCE S-11-EMD-PRC-001

Reference: Letter, D. S. Shoop and J. C. Connerly, "Contract No. DE-AC06-08RL14788 – Transmittal of Review of the 100K Infrastructure Utilities Upgrade Project Surveillance S-11-EMD-PRC-001," 12-EMD-0015, 1105957 A, dated December 9, 2011.

This letter transmits the Corrective Action Plan (CAP), per the referenced letter, for RL Surveillance Report S-11-EMD-PRC-001, *Review of the 100K Infrastructure Utilities Upgrade Project*.

This CAP has been reviewed with RL, and their comments have been incorporated.

The following documentation is provided:

- Attachment 1: CAP - Part 1, Actions Taken by CHPRC Prior to Transmittal of the RL Surveillance

- Attachment 2: Root Cause Evaluation Report, including:
  - CAP - Part 2, Cause/Action Reconciliation Matrix (Additional Actions Identified During the Root Cause Evaluation)
  - Barrier Analysis
  - Why Analysis
  - Barrier Analysis Summary (flow chart)

Technical questions should be directed to J. A. Meeker at 372-1509, and contractual questions should be directed to M. V. Bang at 372-0528.

Sincerely,

John G. Lehew III
President and
Chief Executive Officer

jam/llk

Attachments 2

RL - R. J. Corey
R. L. Long Jr.
M. S. McCormick
D. S. Shoop
S. A. Sieracki
D. H. Splett

Electronically Approved by:

UserName: Lehew III, John (h0041746)
Title: President and Chief Executive Officer
Date: Thursday, 02 February 2012, 04:16 PM Pacific Time
Meaning: Sign as John G. Lehew, III

==========

ATTACHMENT 1

CHPRC-1200377
CONTRACT NUMBER DE-AC06-08RL14788

January 30, 2012

CORRECTIVE ACTION PLAN (CAP) – PART 1 – ACTIONS TAKEN BY CHPRC PRIOR TO TRANSMITTAL OF THE RL SURVEILLANCE

J.A. Meeker

Consisting of 42 pages,
including this cover page

ATTACHMENT 1 – CORRECTIVE ACTION PLAN (CAP) – PART 1 – ACTIONS TAKEN BY CHPRC PRIOR TO TRANSMITTAL OF THE RL SURVEILLANCE – (ARRANGED BY DOE-RL SURVEILLANCE ISSUE)

Revision: 0

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation. NOTE: The corrective actions listed in this column are tracked in CR-2011-3840.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
C01: The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100OK IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.	CR-2011-3840 Significant	*NOTE: The DOE-RL Surveillance indicated that "Findings 1 through 15 support this concern." Therefore, to address the concern, CHPRC has provided a specific, detailed response to each Finding (and Observation) in the remaining table below. This C01 row in the table is used to summarize the gaps and new corrective actions the Root Cause Evaluation team recommends to address the gaps.* *NOTE: The DOE-RL Surveillance also indicates that a similar concern was stated in the previous RL Assessment of the CH2M Hill Plateau Remediation Company Fire Protection Program (A-10-SED-PRC-23) of 5/27/10, which stated "CHPRC Procedures and Policies, D4 activities, and subcontractor activities have not fully integrated FPP requirements." This concern was evaluated and corrective actions were tracked in CR-2010-1693 This CR was reviewed as part of this evaluation.* *NOTE: The table that follows indicates that the majority of the issues identified in DOE Surveillance S-11-EMD-PRC-001 were previously identified by CHPRC and corrective actions were taken. The CRRS was reviewed and no similar occurrences were identified since corrective actions for the previous events were completed.*	Refer to F1 through F15 below.	Refer to F1 through F15 below.		CA-1: Communicate the Project Management Lessons Learned generated from CR-2011-2665 (100K IUUP), to the CHPRC Projects. This may be accomplished through use of the CHPRC Continuous Improvement or other process. CA-2: Provide training to functional organization SMEs on identification and documentation of requirements (e.g., regulatory, fire protection, contractual) related to construction, and practices established to ensure these requirements are included in the Project Execution Plan (PEP) and on the Field Execution Schedule (FES). The training should include aspects of change management related to changing requirements, staff, and roles responsibilities accountabilities and authorities. CA-4: Conduct a CHPRC Management Assessment evaluating: PEP content, SME input, and approvals, PRB adequacy, participation and documentation, transfer of requirements to the FES, and QA input to the Project planning, design and construction phases. Focus on FPE, ECO, NS and subcontractor involvement, and include low risk, low complexity, and fast track projects where applicable. CA-5: Revise PRC-PRO-PM-25000, Project Execution Plans, to: •Clearly define roles, responsibilities, accountabilities, and authorities (R2A2).

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S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation. NOTE: The corrective actions listed in this column are tracked in CR-2011-3840.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
						•Include the requirement that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M. This requirement is currently included in PRC-PRO-PM-24889, Project Initiation and Execution, but absent from PRC-PRO-PM-25000. •Include a requirement that appropriate SMEs must review and sign the PEP for the respective subject matter area. •Include a requirement that the CHPRC Chief Operating Officer (COO) will perform routine project reviews for medium and/or high-risk projects. •Include a requirement to use the Environmental Activity Screening (EAS) form as input to development of the Field Execution Schedule (FES). •Require review by the PRB when key personnel (e.g., Project Manager) are changed during project execution. CA-6: Brief personnel, as appropriate, on the requirement that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M. CA-9: Revise PRC-PRO-EP-15333, Environmental Protection Processes, to require use of the Environmental Activity Screening (EAS) form (Site Form A-60004-962) for activities subject to PM requirements per PRC-PRO-PM-24889.

ATTACHMENT 1 – CORRECTIVE ACTION PLAN (CAP) – PART 1 – ACTIONS TAKEN BY CHPRC PRIOR TO TRANSMITTAL OF THE RL SURVEILLANCE – (ARRANGED BY DOE-RL SURVEILLANCE ISSUE)

Revision: 0

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation. NOTE: The corrective actions listed in this column are tracked in CR-2011-3840.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
						CA-14: Brief IM Administrators and central IM staff on the issue described in the Surveillance (duplicate Stop Work CR cancelled), and best practice's to close duplicate Condition Reports. CA-15: Present a recommendation to the CHPRC Executive Safety Review Board (ESRB) for consideration, to revise the appropriate CHPRC procedures to expand and clarify the criteria used to determine project risk (e.g., low, medium and high risk). Ensure the recommendation includes appropriate links to Project Management and Risk Management procedures, as appropriate. Factors to consider could include: •When a project is on a fast track, or the risk determination should be higher based on that fact alone. •Impact of failure to meet regulatory or contractual requirements. CA-16: Perform an effectiveness review of the actions identified in CR-2011-3840, per PRC-PRO-QA-052, *Issues Management*, utilizing the Performance Assurance organization.

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CARS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F01: CHPRC did not apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code prior to commencing construction of the 100K IUUP Potable Water System.	CR-2011-3846 Track Until Fixed	**CHPRC agrees with finding F01.** This issue was identified by CHPRC on 5/18/10. Below is a discussion of the CHPRC response.				
Ref #1		On 4/29/10, a new potable water system installation at the 200 East Unsecured Core Area was found to have begun construction prior to obtaining required written project report approval from the WDOH. The required application materials had been submitted by the project through the MSA Water Purveyor to WDOH, had been reviewed by WDOH with one minor concern, and approval was pending. Upon discovery, work on the drinking water system was stopped, WDOH was contacted, and approval was immediately obtained. CR-2010-1340 was submitted to track corrective actions for this condition. The following two immediate actions were taken: 1. The issue was communicated to the Central Engineering Manager, the EPC Vice President, EP, the EPC Project Manager., and MSA. 2. On 5/4/10, WDOH issued an email approval which allowed work to restart. *Note: The drinking water system was not hooked up or put into service prior to obtaining the required approvals.*	CR-2010-1340 Adverse	*NOTE: Corrective actions for CR-2010-1340 were completed and the CR was authenticated on 8/13/10.* On 6/18/10 the Extent of Condition (EOC) and Apparent Cause Evaluation (ACE) for CR-2010-1340 (unsecured core issue) was completed. The EOC referenced the two nearly "simultaneous" events. The EOC identified the extent of this condition as potentially occurring in other projects. The Apparent Cause Analysis identified two causes: Individual underestimated the problem by using past events as basis; and, Management policy / guidance / expectations not well-defined, understood or enforced. Corrective Actions: CR-2010-1340 CA-1: Participate in MSA sponsored Lessons Learned session to discuss this issue. Complete 6/10/10. CR-2010-1340 CA-2: Based on the results of the Lessons Learned from action 1, discuss with CHPRC ECOs addressing WDOH pre-construction requirements for approvals of potable drinking water system construction and modification. Include in the discussion the excavation permit review process. Completed 6/30/10.	No gap identified	No new actions required
Ref #2		During discussions with the CHPRC environmental compliance staff regarding CR-2010-1340, it was discovered that 100K area water treatment system construction was begun prior to approval of the National Environmental Policy Act (NEPA) Categorical Exclusion (CX) submittal had not yet been obtained. This CX approval was immediately obtained, and the project report submitted to WDOH for approval. CR-2010-1608 was submitted to track corrective actions for this condition. The following four immediate actions were taken: 1. The Vice President of Environmental Programs and Strategic Planning elevated the concern to the Vice President, D&D, and evaluations of the compliance posture of the D&D project were started.	CR-2010-1608 Adverse	*NOTE: All corrective actions for CR-2010-1608 were completed and the CR was authenticated on 11/5/10.* On 9/18/10 an Apparent Cause Evaluation was completed for CR-2010-1608. Two causes were identified and four corrective actions were selected to address the concern. Causes identified in CR-2010-1608: 1. Management policy guidance / expectations not well-defined understood or enforced. Individuals relied on past experience with WDOH regulators and previous drinking water installation projects, that WDOH would informally allow the simultaneous preparation and review of the Project Report while construction commenced. Individuals believed that a regulatory "at-risk" position was acceptable to the regulators and the	No gap identified	No new actions required

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		2. The DOE NEPA Compliance Officer was notified of the situation and the CX paperwork was submitted. He signed the categorical exclusion on May 27, 2010, thereby completing the NEPA review, but requested that this issue be addressed in a CHPRC management assessment or equivalent. 3. Additionally, two review meetings have been held with the project to identify any other outstanding environmental requirements. A request was made to the CHPRC Environmental Protection Clean Air SME to evaluate air permitting requirements for the diesel generator. 4. During the week of June 1, 2010, work was suspended on portions of the project that clearly required WDOH approval. On 6/2/10, the project report (PEP) was formally transmitted to WDOH for review and approval. *Note: The drinking water system was not hooked up or put into service prior to obtaining the required approvals.*		CHPRC, and necessary for the fast-track project. WDOH confirmed to CHPRC that they know and may informally allow projects to proceed at-risk even though the regulations do not allow for this interpretation. 2. Individuals underestimated the problem using past events as a basis. This analysis is a subset of the Root Cause analysis documented in CR-2010-1657 which addresses the condition as it applies across the CHPRC. Corrective Actions: CR-2010-1608 CA-1: Evaluate extent of condition at 100K. This was documented on CR-2010-1657. CR-2010-1608 CA-2: Notify the DOE NEPA Compliance Officer of the incomplete NEPA review and have the DOE NEPA Compliance Officer complete the NEPA review. He signed the CX on 5/27/10 completing the NEPA review. CR-2010-1608 CA-3: Notify the NEPA Compliance Officer that the CX authorization was addressed as part of the CHPRC corrective action system. CR-2010-1608 CA-4: Management to reinforce that formal Department of Health approval is expected prior to the start of new work. NOTE: The central Environmental group also provided a presentation (training) expressing this same expectation.		
Ref #3		On 6/7/10, CR-2010-1657 was submitted to document a potential adverse trend: Environmental regulations/ requirements for construction projects not met. The following four immediate actions were taken: 1. Met with WDOH to clarify regulatory definitions and provide update on ARRA scope. 2. Provided training to CHPRC ECO's on drinking water regulations and requirements. 3. Initiated changes to PRC-PRO-EP-15333 to strengthen and clarify drinking water requirements. 4. Arranged for a Lessons Learned session with MSA on joint issues pertaining to the 200E Core Area water system construction 5. Submitted an ORPS report EM-RL—CPRC-GENLAREAS-2010-0013) on 6/4/10 to document and communicate this management concern. CR-2010-1657 is also discussed in relation to Finding	CR-2010-1657 Significant	*NOTE: All corrective actions for CR-2010-1657 were completed and the CR was authenticated on 2/15/11.* On 9/16/10, CHPRC completed an Extent of Condition (EOC) review and a Root Cause Evaluation for CR-2010-1657. Project planning did not clearly identify the specific environmental permits and authorizations required. Also not clear was the approval need dates as compared to contract commencement and construction activities. This was due in part to the fact that project personnel were not familiar with the requirements for water tie in construction activities as this is a relatively infrequent activity at the projects. Furthermore, individuals relied on WDOH regulators past actions of informally allowing the simultaneous review of the project report while construction has commenced. Individuals believed that a regulatory "at-risk" position was	Gap identified: An Effectiveness Review was not planned relative to the corrective actions planned for CR-2010-1657. All actions on this CR have been completed so the ER should be conducted as soon as resources are available. *NOTE: The project planning/scheduling issue is addressed below as a gap in the CHPRC response to F02.* *NOTE: A Lesson Learned will be generated based*	CA-12: Conduct an Effectiveness Review, per PRC-PRO-QA-052, Issues Management, for the corrective actions implemented for CR-2010-1657, Potential Adverse Trend – Environmental Regulatory Requirements for Construction Projects not met. Justification: PRC-PRO-QA-052, Rev. 4, Chg. 0, published 10/11/11 requires an ER to be performed for issues screened in the CRRS system as "significant". This issue was screened as "significant" and the RCE team was agreed that an ER should be performed to determine whether the actions taken have resolved the issue identified in the

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S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		F02, below.		acceptable to the regulators and the CHPRC, and necessary for the fast-track project. Extent of Condition Review was performed and documented. A Worksite Assessment (SHS&Q-2011-WSA-10713) was performed based on the issues identified associated with fire protection and water permitting for the water system upgrade. The WSA team was lead by the Director of Performance Assurance and included external independent CH2M Hill Corporate resources. The team reviewed the other subprojects associated with 100K and found no issues associated with fire protection, nuclear safety or environmental permitting with the other subprojects. The team did identify an issue with project management that will be documented in CR-2011-2665, Lessons Learned from 100K Utilities Upgrade Project. CHPRC has instituted a tracking system, referred to as "Request for Services" to assist support organizations in tracking requests from the CHPRC Projects, such as the request for NEPA CX. CR-2010-1657 CA-1: Develop training for project management personnel regarding expectations to ensure that all required permits/documents are identified, in place and approved as necessary prior to starting construction or execution of activities. Emphasize that proceeding at risk is not an allowable or acceptable approach with regard to regulatory documents. Impacts of Proceeding "At-Risk" in Potential Noncompliance with Regulatory Requirements training was provided to all Project Vice Presidents for presentation to all Project Lead Personnel. Closure evidence attached to the CR indicates that this course #600080 was completed by a large number of individuals during the October and November 2010 time-frame. CR-2010-1657 CA-2: Issue material for the purpose of briefing/informing project managers regarding management expectations that environmental documents must be complete and approvals received prior to the execution of the project activities. 154 CHPRC project management and other personnel were trained. The briefings reinforced that strict adherence to regulatory compliance, as well as comprehensive planning and identification of environmental requirements must be performed. An at-risk posture for environmental	*upon results of this Root Cause Evaluation report. This action was previously identified and is being tracked in CR-2011-2665.*	CR.

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		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
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				requirements is not allowed. CR-2010-1657 CA-3: Evaluate current environmental procedures and identify changes needed to ensure that there is a clear requirement for environmental requirements screening documents (e.g., Environmental Activity screening forms - see Section 5.1, PRC-PRO-EP-15333) to be updated as project design and development evolves. Evaluation must also consider other relevant procedures that govern activities listed in Table 1 (e.g. project management procedures) for potential changes that would facilitate such updating. An evaluation was prepared and documented. CR-2010-1657 CA-4: Propose changes to Environmental Protection procedures and forms per the recommendations resulting from Action #3; resolve comments and publish final changes. Provide written recommendation of changes to non-Environmental Protection procedures to procedure owners. The only Environmental Protection procedure recommended for change was PRC-PRO-EP-15333. A revision incorporating the recommended changes was published on January 31, 2011 (Rev. 0-8). Other procedure changes were recommended in the Work Management and Engineering Projects and Construction areas. These recommendations were provided earlier in writing to Work Management, and Engineering Projects and Construction. CR-2010-1657 CA-5: Hire additional personnel to ensure sufficient resources are available to address the environmental needs of the project. Two additional environmental leads were hired in the May – July 2010 timeframe. CR-2010-1657 CA-6: Lessons Learned Information Bulletin 2010-RL-HNF-0048, Titled "Initiation of Water System Tie-In Construction Activities without Regulatory Approval" was issued by the Mission Support Alliance. CR-2010-1657 CA-7: CHPRC will develop and issue a Lessons Learned that addresses the adverse trend identified in CR-2010-1657. Submitted Lessons Learned to HILLS database on 11/18/2010. CR-2010-1657 CA-8: CHPRC EP will develop and give a briefing/training for Environmental Compliance Officers		

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				concerning appropriate procedure usage, subject matter expert support, and unacceptability of proceeding "at-risk". Five slides were added to the Proceeding at Risk presentation developed for Project Managers and others. The five slides addressed appropriate procedure usage and SME support. A briefing on the original presentation was provided to Environmental Compliance Officers (ECOs) by Allan Cawrse and the new slides were discussed by Brian Dixon at the ECO Meeting on November 5, 2010. Makeups were completed on November 8. *NOTE: The action pending for CR-2011-2665(CA-1) is to develop a lessons learned that can be incorporated into project management learning activities and the project review board process on the value of fully describing the roles and responsibilities associated with project interfaces and how project risk is managed. This lesson learned will be generated based upon the content of this Root Cause Evaluation report.*		
Ref #4		See also Ref #5 below	CR-2011-2665 Opportunity for Improvement	One corrective action has been identified for CR-2011-2665: CR-2011-2665 CA-1: Develop a lesson learned that can be incorporated into project management learning activities and the project review board process on the value of fully describing the roles and responsibilities associated with project interfaces and how project risk is managed. This action is planned to be completed by 3/15/2012.	GAP identified that training should also be developed and provided to Environmental Professionals who support the CHPRC with respect to providing project input on specific environmental tasks at both the Project Execution Plan development stage, the field execution schedule development stage and that it should be reviewed if project staff change during a project. The training should include the important role that SMEs provide to a project manager to ensure all activities are included in the project. Gap identified that the PRC-PRO-EP-15333, step 5.1 specifically notes that an environmental	Action: Provide training for environmental personnel to identify and document regulatory requirements related to construction, and to ensure these requirements are included in the Project Execution Plan (PEP) and on the Field Execution Schedule (FES). Provide direction that the input provided and documents generated (e.g., PEP, FES) must be reviewed if project staff assignments change during a project. The training should include the important role that SMEs provide to a project manager to ensure all activities are included in the project, including the PEP and the FES. Action: Modify PRC-PRO-EP-15333 to require use of the Environmental Activity Screening (EAS) form.

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					screening form is not required.	

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		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F02: CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of the 100K IUUP facilities.	CR-2011-3849 Track Until Fixed	**CHPRC agrees with finding F02.** This issue was identified by CHPRC on 5/18/10. Below is the sequence of the CHPRC response. See discussion of CR-2010-1340 (Ref #1) and CR-2010-1608 (Ref #2), above.				
		On 6/7/10, CHPRC submitted CR-2010-1657, documenting a Potential Adverse Trend - Environmental Regulatory Requirements for Construction Projects not met. *NOTE: Immediate actions from CR-2010-1657 are listed under F01.* CHPRC completed an Extent of Condition and a Root Cause Evaluation for CR-2010-1657 on 9/16/10. Project planning did not clearly identify the specific environmental permits and authorizations required. Also not clear was the approval need dates as compared to contract commencement and construction activities. This was due in part to the fact that project personnel were not familiar with the requirements for water tie in construction activities as this is a relatively infrequent activity at the projects. Furthermore, individuals relied on WDOH regulators past actions of informally allowing the simultaneous review of the project report while construction has commenced. Individuals believed that a regulatory "at-risk" position was acceptable to the regulators and the CHPRC, and necessary for the fast-track project. Upon receipt of a "draft" DOE Surveillance, S-11-SED-PRC-006, an Extent of Condition (EOC) Review of the 13.8 kV Substation and HVAC system for 105KE (both subprojects of the IUUP) was performed and documented on 8/29/11. A Worksite Assessment (SHS&Q-2011-WSA-10713) was performed (based on the issues identified associated with fire protection and water permitting for the water system upgrade). The WSA team was lead by the Director of Performance Assurance and included external	CR-2010-1657	*NOTE: Causal factors and corrective actions for CR-2010-1340, CR-2010-1608, CR-2010-1657, and CR-2011-2665 apply to both F01 and F02, are stated above and are not repeated here.*	*Gap identified:* *Two main factors contributed to the NEPA CX Determination issue. First, this activity was not tracked on the Field Execution Schedule. Second, CHPRC did not have an administrative system to track the request when it was presented by the Project. The latter issue has been addressed while the former has not.* *NOTE: A "Request for Services" process to track the status of environmental permitting requests from the Projects has been instituted and communicated to CHPRC ECOs by EP senior management.* *Gap identified: insufficient detail was included in the PEP and the FES to ensure timely application for this NEPA CX.*	Action: 1. Modify Project Initiation and Execution Procedure to require the use of the environmental screening form as input to development of the field execution schedule. CA-3: Institutionalize a method to track and close requests for services from field environmental support staff to the central environmental group. CA-5: Revise PRC-PRO-PM-25000, Project Execution Plans, to: •Clearly define roles, responsibilities, accountabilities, and authorities (R2A2). •Include the requirement that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M. This requirement is currently included in PRC-PRO-PM-24889, Project Initiation and Execution, but absent from PRC-PRO-PM-25000. •Include a requirement that appropriate SMEs must review and sign the PEP for the respective subject matter area. •Include a requirement that the CHPRC Chief Operating Officer (COO) will perform routine project reviews for medium and/or high-risk projects. •Include a requirement to use the

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		Independent CH2M Hill Corporate resources. The team reviewed the other subprojects associated with 100K (e.g., the 13.8 kV Substation and HVAC system for 105KE) and found no issues associated with fire protection, nuclear safety or environmental permitting with the other subprojects. The team did identify an issue with project management that was documented in CR 2011-2665 (See Ref #4). CHPRC has instituted a tracking system, referred to as "Request for Services" to assist support organizations in tracking requests from the CHPRC Projects, such as the request for NEPA CX.				Environmental Activity Screening (EAS) form as input to development of the Field Execution Schedule (FES). *Require review by the PRB when key personnel (e.g., Project Manager) are changed during project execution.

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
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F03: Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.	CR-2011-3867 Track Until Fixed	**CHPRC agrees with finding F03 as it pertains to CR-2010-1657.** This finding refers to the processing of CR-2010-1657. Processing of this CR from identification of the issue to approval of the CAP (including EOC and causal analysis) did not meet the performance goal listed in PRC-PRO-QA-052, Issues Management, of 45 days. The sequence of events below illustrates how EOCs on related issues were conducted in a timely manner, communicated, and produced desired results (e.g., no recurrence). CHPRC first discovered a failure to meet environmental regulatory requirements on 4/29/10 (CR-2010-1340, Adverse). On this date CHPRC Environmental Protection was notified by MSA that the 200 Area Unsecured Core potable water line extension project had been initiated without approval by the WDOH. The EOC and Causal Analysis were completed 50 calendar days after discovery. During this EOC, lessons learned discussions with CHPRC environmental compliance officers led to the discovery of a similar condition with the water system project in the 100-K Area (5/18/10) (CR-2010-1608, Adverse). As in the case of the other project, the excavation permit had been signed prior to WDOH approval. The EOC further concludes that the nearly simultaneous occurrences indicate such conditions could be occurring in other projects. In both cases, it appears the environmental and water signers of the excavation permits were unaware of the WDOH regulatory requirement, as well as CHPRC contractual requirement, that the WDOH approval occurs before start of construction. Evaluation of CHPRC-PRO-EP-15333 also indicated that the requirement was not explicit. Evaluation of the EOC for CR-2010-1340 (Ref #1) and CR-2010-1608 (Ref #2) resulted in CHPRC's submittal of CR-2010-1657 on 6/7/10 (Ref #3) to document a potential adverse trend, environmental regulations/	CR-2010-1340 CR-2010-1608 CR-2010-1657	See Ref #1 See Ref #2 See Ref # 3 The Integrated Corrective Action Plan completed in 2011 evaluated and enhanced the CHPRC Issues Management process. Training was conducted for Project Administrators.	None.	None.

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			CR #	Action #/Action Statement		
		requirements for construction projects not met. This CR was screened as Significant, requiring a Root Cause Evaluation, more extensive EOC, and corrective actions designed to prevent recurrence of each cause. See Ref #3 for further information.				

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRAS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F04: CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).	CR-2011-3869 Track Until Fixed	**CHPRC agrees with F04.** This issue was documented by CHPRC on 2/22/10 in CR-2010-0502, *Review project management procedures with emphasis on contractor/project coordination.* Below is a discussion of the CHPRC response.				
Ref #5		CR-2010-0502 was submitted to document a lesson learned (HNF-10-LL02) related the slightly irradiated fuel relocation project. Corrective actions included revisions to the Project Initiation and Execution procedure and the Project Execution Plan procedure. It was determined that neither discusses inter-contractor/project coordination nor requires that these interfaces be defined by the Project Manager. Several Cleanup Subproject Project Execution Plans (PEPs) were reviewed to evaluate whether inter-contractor/project interfaces were discussed. It was noted that some PEPs did discuss or define these interfaces, but not all did. The Project Execution Plans procedure (PRC-PRO-PM-25000) was revised to expand the scope of project interfaces in Section 1.5 requiring the project manager to evaluate necessary project interfaces to include inter-contractor/project communications. The PM is now required to define those interfaces in their PEP along with a discussion of how the interfaces will be managed. Work Site Assessment SHS&Q-2011-WSA-10713 (8/3/11) identified that the 100K Utilities Upgrade Project Execution Plan did not describe the regulatory aspects, and interfaces, and roles and responsibilities beyond the immediate project staff. The only risk described was industrial risk, not project regulatory risk.	CR-2010-0502	*NOTE: Corrective actions for CR-2010-0502 were completed and the CR was authenticated on 6/1/11.* CR-2010-0502 CA1: Review the CHPRC Project Initiation Procedure (PRC-PRO-PM-24889) and Project Execution Plan procedure (PRC-PRO-PM-25000) to verify that inter-contractor/project coordination is discussed/required as part of project planning. Completed 5/6/10 CR-2010-0502 CA2: Modify the Project Execution Plans procedure (PRC-PRO-PM-25000) to expand the scope of project interfaces in Section 1.5. The Project Manager will be required to evaluate other required interfaces for the project, including inter-contractor/project interfaces. Where inter-contractor or inter-project interfaces are essential to project success, the PM should define those interfaces in the PEP along with a discussion of how the interfaces will be managed. Submitted procedure revision for review/approval via CHPRC procedures on 4/18/2011. Completed 6/1/2011	No gap identified	No gap identified
		CR-2011-2665 (Ref #4) to address this issue. The PEP failed to describe the regulatory aspects, and interfaces, roles and responsibilities, the risk only described industrial risk, not project regulatory risk. Close coupled EPC approach not described. The Field Execution Schedule (FES) did include line items related to the WDOH approval prior to operations, but did not include an item for WDOH	CR-2011-2665	CR-2011-2665 CA1: Develop a lesson learned that can be incorporated into project management learning activities and the project review board process on the value of fully describing the roles and responsibilities associated with project interfaces and how project risk is managed. This action in planned to be complete by 3/15/2012.	*Gap identified:* *Though CHPRC identified in CR-2011-2665 an opportunity for improvement to publish a LL related to the 100K IUUP, additional actions are recommended to*	Actions: CA-1: Communicate the Lessons Learned generated from CR-2011-2665 (100K IUUP), to the CHPRC Projects. This may be accomplished through use of the CHPRC Continuous Improvement or other process.

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap Identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		approval prior to construction nor for the NEPA CX Determination. Both regulatory and change management issues were not addressed in the PRB process. This was early in the PRB process and as the process evolved additional expectations and rigor were added based on lessons learned. The PRB Chairman determined this project to be low risk. At the time of this report, CHPRC is also evaluating project management concerns related to premature cancellation of the 209E DSA. CR-2011-3187 was submitted to track resolution of this issue.			*ensure the LL are incorporated in project management learning activities and the EPC PRB process.* *NOTE: A LL will be generated based upon results of this Root Cause Evaluation report. This action has previously been identified and will be tracked in CR-2011-2665.* Gap identified: The Field Execution Schedule tied the WDOH approval to the operations but did not include WDOH approval for the start of construction.	CA-9: Revise PRC-PRO-EP-15333, Environmental Protection Processes, to require use of the Environmental Activity Screening (EAS) form (Site Form A-60004-962) for activities subject to PM requirements per PRC-PRO-PM-24889. CA-10: Revise PRC-CHRT-PM-40249, Project Review Board Charter, to: •Include discussion of Lessons Learned as an integral part of each PRB, •Include a list of project SMEs to be considered for invitation to each PRB meeting. •Include an expectation that a PRB will be conducted when key personnel (e.g., Project Manager) are changed during project execution. CA-2: Provide training to functional organization SMEs on identification and documentation of requirements (e.g., regulatory, fire protection, contractual) related to construction, and practices established to ensure these requirements are included in the Project Execution Plan (PEP) and on the Field Execution Schedule (FES). The training should include aspects of change management related to changing requirements, staff, and roles responsibilities accountabilities and authorities.

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRWS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F05: CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.	CR-2011-3870 Track Until Fixed	CHPRC agrees with finding F05. Below is a discussion of the CHPRC response.				
		A business decision was made to proceed at risk of rework to minimize the impact on schedule. CHPRC proceeded knowing that it was probable that field changes would be necessary. These changes would be formally handled via the DCN/ECN processes. During the design phase of the IUUP fire sprinkler system, CHPRC encountered resource limitations at both ARES and MSA. Support from the contractor providing system design was less than adequate, affecting both timeliness and quality. Multiple iterations of design correction were experienced. While attempting to resolve design issues, CHPRC contracted with another firm to review and correct the ARES design so that it met current criteria. This was a [1]fast track project and the design delays impacted procurement, permitting, and construction activities/schedule. A business decision was made to proceed at risk of rework to minimize the impact on schedule. The contractor performing the installation of the fire sprinkler system also made unauthorized changes to the design during field installation.	CR-2010-1657	See Ref #3		
Ref #6		September 29, 2010 100K Senior Management issued a Field Work Stop Work on the 100K Fire Suppression System Upgrade pending a comprehensive Design Document review and approval. CR-2010-3049, Adverse, was submitted to document the stop work and to conduct a cause analysis and develop a corrective action plan. Extent of Condition was performed and found to be caused by an oversight in the BTR procedure PRC-	CR-2010-3049	*NOTE: All corrective actions for CR-2010-1657 were completed and the CR was authenticated on 2/15/11.* CR-2010-3049 CA3: Reconcile the MSA and CHPRC procedures so the approval requirements are clearly identified in the PRC-PRO-AC-186 Procedure. Action completed on 12/17/2010 PRC-PRO-AC-186, *Statements of Work*, describes the process and includes templates for the preparation of Statements of work. PRO-AC-186 and the referenced	No gap was identified	No gap was identified

[1] Fast Track Construction: A method of project delivery in which the sequencing of construction activities enables some portions of the project to begin before the design is completed on other portions of the project.

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		PRO-AC-186. The oversight deals with the interface with the Hanford Fire Marshal and design reviews. Other portions of the D&D Project are not affected by this oversight but other CHPRC projects could be. Corrective Action #3 will address this oversight.		templates include numerous references to identification of hazards and inclusion of supporting organizations in making sure SOWs and the resulting contract completely address hazards. Section 3.3.6 specifically addresses fire protection engineering: When procuring services that involve any activity listed in Sections 2.2 and 2.3 of MSC-RD-8589, *Hanford Fire Marshal Permits*, contact the Fire Prevention organization to determine whether a Hanford Fire Marshal Permit is required. Document as applicable in the SOW. Similarly, if any Fire Protection design features, egress, combustibles, protection systems will be potentially impacted by Contractor activities, coordinate requirements with the Project Fire Protection Engineer Section 4.8 of the Hazardous SOW template modified to include the following language: "When the contract includes significant design or construction activities or any items that require a fire protection/code interpretation the Deputy Fire Marshal for the facility shall be contacted for interpretation and required permits in accordance with MSC-RD-8589, Hanford Fire Permits. CR-2010-3049 CA5: Per the requirements of MSC-RD-9717, Section 2.1.2, complete a Hanford Fire Department Construction/Demolition Fire Safety Inspection Checklist, Site Form A-6002-692, (reference OA33896 Finding #2).Action completed on 12/16/2010 Per the requirements of MSC-RD-9717, Section 2.1.2, a Contractor Fire Plan Request was prepared and submitted to the Hanford Fire Department. Per the requirements of MSC-RD-9717, Section 2.1.3, a Construction/Demolition Fire Safety Inspection Checklist was prepared and submitted to the Hanford Fire Department.		
Ref #7		CR-2010-1693, Significant, submitted 5/14/2010, documented an RL-identified concern that CHPRC had not fully integrated fire protection program requirements into CHPRC procedures and policies, D4 activities, and subcontractor activities. A root cause analysis report was issued 10/6/2010	CR-2010-1693	*NOTE: All corrective actions for CR-2010-1657 were completed and the CR was authenticated on 2/15/11.* CR-2010-1693 CA1: Reviewed CHPRC documents for opportunities to include and clarify direction and information that will enable users to identify and implement fire protection program requirements. Outlined revisions	Potential gap identified. An opportunity for improvement exists to ensure that company level fire protection procedures are aligned with project	**CA-16: Evaluate company and project level fire protection procedures to ensure these procedures are appropriately aligned.**

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		identifying A separate extent of condition evaluation was not performed because the issue was identified as a company-wide issue. One root and four contributing causes were identified: RC-1: The CHPRC Fire Protection Program relies on qualified Fire Protection Engineers to ensure compliance with applicable codes and standards. As such not all applicable code requirements have been fully incorporated into CHPRC procedures. This level of expert-based reliance, as opposed to a standards-based reliance, exceeds the level to which the Authority Having Jurisdiction feels is appropriate. CC-1: CHPRC does not completely and accurately incorporated applicable NFPA fire protection requirements in level 1, 2, and 3 procedures. CC-2: CHPRC does not have a documented process specifying necessary action to be taken and when to transition a facility from an unoccupied status to a status to support D4 activities. CC-3: In some cases applicable procedures fail to specify when Fire Protection Permits, FPE involvement and FTE approval is required and fail to establish roles responsibilities, authorities, and accountabilities to ensure that all require actions are performed. CC-4: Interaction between subcontractors and CHPRC was not sufficient to convey expectations of, or monitor, performance. Seven of the eight assigned actions were completed by 12/2011. The last action, to determine if the CR has been adequately completed is planned for 2/1/2012.		recommended to enhance usability of the documents. Recommended revisions will alert users of existing FP Program requirements and direct the user to applicable references. Recommendations are based on 10CFR 851 and NFPA requirements as implemented through the MSA Fire Protection program documents endorsed by CHPRC. The developed revisions will be peer reviewed by FP management and submitted to cognizant parties for inclusion in the documents as part of the closeout of Corrective Action 3 of this CRRS item, expected 3/31/2011. CR-2010-1693 CA3/4: CHPRC Level 1 and 2 procedures were reviewed and recommended changes were submitted and completed. CR-2010-1693 CA5: Established a position to provide oversight/mentoring for project and construction activities. Personnel performing the mentoring function shall be Qualified Fire Protection Engineers familiar with the requirements and processes in place at the Hanford site.	level fire protection procedures.	
			CR-2010-3255	*DOE-RL Surveillance A-10-SED-PRC-023, 001,stated that "Several Instances where Fire Marshal Permits were incorrectly filled out or issued without required input documentation. In addition, the permit program does not*	No gaps were identified.	

ATTACHMENT 1 – CORRECTIVE ACTION PLAN (CAP) – PART 1 – ACTIONS TAKEN BY CHPRC PRIOR TO TRANSMITTAL OF THE RL SURVEILLANCE – (ARRANGED BY DOE-RL SURVEILLANCE ISSUE)

Revision: 0

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
				adequately assign revision numbers nor are all permits available through the records program. *CA-1: Assign and track required reading to all CHPRC FPEs that specifically includes Observation 001.* *CA-2: Assign and track required reading to all CHPRC FPEs that specifically includes MSC-RD-9717, paragraph 2.3 (Demolition/Deactivation/Decommission Requuirements).* *CA-3: Verify that the Hanford Fire Marshal Permitting System has been modified to be capable of maintaining a history of all permitted actions so that they can be electronically obtained.* *CA-4: Resolve specific issues pertaining to existing permits, and new permits required, as listed in the third paragraph of the discussion associated with Observation 001.*		
			CR-2011-1278	*Description of Issue: This CR as generated following development of a CHPRC Nuclear Safety Quality Process Improvement Plan (CHPRC-NS-11-012. The CR identified Fire protection procedures that require revision. 11 actions are included in this CR. Some of these actions required preparation and implementation of CHPRC specific fire protection program procedures. Roles and responsibilities for FPE functions were defined. The requirement for peer and functional review of FHA's and fire protection related analyses were proceduralized.* *PRC-STD-FP-40404, Fire Protection Program Standard has been approved.* *FPP implementing procedures(6) have been approved and published.*	No gaps were identified.	

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap Identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F06: CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.	CR-2011-3871 Track Until Fixed	CHPRC agrees with finding F06. Below is a discussion of the CHPRC response.			Gap identified: Two Condition Reports were generated for the same condition. When the second was submitted, the first was screened out. Some relevant information was lost in this process and, in retrospect, it would have been more appropriate to screen out the second CR submitted for this concern. Response to the initial CR was not timely.	CA-14: Brief IM Administrators and central IM staff on the issue described in the Surveillance (duplicate Stop Work CR cancelled), and best practice's to close duplicate Condition Reports.
Ref #8		August 24th, 2010, the 100K Fire Protection Engineer was notified by facilities operations personnel that the scope of work for the day for the 100K new water treatment facility was to include installation of the fire suppression system. The design for this system had unresolved comments from 100K Fire Protection Engineering and had not been reviewed and approved by the Fire Marshal's Office. A walk down of the facility showed that additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes. The following immediate action was taken: The EPC construction manager was notified that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. The EPC construction manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the Fire Marshal's Office. CRs 2010-2597/3049 were written to address the Stop Work (CR 2010-2597 was a duplicate of CR 3049 and was screened out as a duplicate).	CR-2010-2597/ 3342, Adverse	*NOTE: All corrective actions for CR-2010-1657 were completed and the CR was authenticated on 2/15/11.* 1/4/2011. Two actions were documented in the CR: CR-2010-3342 CA1: A formal meeting was held with subcontractor personnel and the CHPRC Project Lead to reiterate DOE-0343 to ensure work is not performed until stop work is resolved and that potential safety concerns are reported and assigned. CR-2010-3342 CA2: Project manager for 100K Infrastructure Project sent an email to 100K construction management personnel clarifying the expectation that when a stop work is issued, there is follow up to ensure the stop work is being implemented by subcontractor.		

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		CR-2010-3049should have been the CR that was screened out as a duplicate of an existing CR. The Issues Management procedure PRC-PRO-QA-052 requires that CRs be screened out if they are a duplicate of an existing CR. The actions taken to screen out the existing CR to the new CR was an error made by the Issues Management organization. The apparent cause analysis concluded that subcontractor safety personnel did not have a clear understanding of stop work and believed that the condition of the pipe support/restraint posed a safety concern, which could be corrected. However, a stop work was in effect on 100K fire protection related systems. Also, the CHPRC Project Lead Engineer indicated a lack of understanding the scope of work included in the stop work as he believed the work (i.e., fixing the pipe support/restraint) was part of general clean up and not subject to the stop work. The recommended actions listed in the cause analysis that was performed did not align with the approved corrective action plan. Specifically, the approved actions outline a sequential approach to lifting the stop work while the cause analysis specified that all the actions should be completed before lifting the stop work. NOTE: The Hanford contractor unification towards a common Stop Work procedure was directed by DOE (DOE-RL, DOE-ORP, and PNSO). DOE-0343, *Stop Work*, is endorsed by CHPRC and replaces PRC-PRO-SH-3468, Stop Work Responsibility. Revision 2 was Effective January 18, 2010.				
Ref #9			CR-2010-2424 CR-2010-1315 ICAP Corrective Actions	*NOTE: All corrective actions for CR-2010-1657 were completed and the CR was authenticated on 2/15/11.* CR-2010-2424, Significant, documented work management and conduct of work performance recurring issues at PFP. On 8/5/2010, PFP categorized a recurrent event occurrence based upon a review of several similar type events related to work management and conduct of work performance. When viewed as a whole, the events or conditions could indicate a failure of corrective or compensatory actions from previous	No gap was identified	No gap was identified

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
				events that, if left uncorrected, could lead to a serious event. CR-2010-1313, Significant, documented numerous examples where issues and conditions were not screened or categorized in accordance with established requirement or consistent with their level of important. Extensive cause evaluation and revision to the work management and issues management programs resulted from these two CR. A total of 47 actions were taken, including effectiveness reviews, and the CRs were authenticated 8/10/2011 and 9/13/2011, respectively. The actions included extensive procedure revisions and training. The process revisions and training address the ensuring that cause analysis and corrective action develop and associated implementation are in alignment. Process revisions include: Revise the Issues Management (PRC-PRO-QA-052) process to provide the necessary guidance to ensure appropriate cause analysis and corrective action plans are developed. Specific changes included: a. Defined minimum training requirements b. Re-defined process for extent of condition and extent of corrective action taking into account derived causes and risk including minimum expectations for apparent and root causes activities c. Process steps to develop factually based cause analysis approaches and minimum cause analysis tool expectations d. Defined criteria for corrective actions to prevent recurrence e. A defined template for apparent cause analysis with minimum performance expectations f. A defined template for root cause analysis with minimum performance expectations g. Development of an Effectiveness Review Plan for all root cause analysis activities, at a minimum h. Defined criteria and a process for a Corrective Action		

ATTACHMENT 1 – CORRECTIVE ACTION PLAN (CAP) – PART 1 – ACTIONS TAKEN BY CHPRC PRIOR TO TRANSMITTAL OF THE RL SURVEILLANCE – (ARRANGED BY DOE-RL SURVEILLANCE ISSUE)

Revision: 0

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
				Review Board at each project to focus on the adequacy of causal analysis and corrective action plan development activities for significant/adverse issues at the project level. This board will include a review of emerging project level trends and provide management direction for project assessment activities i. Define the oversight role of the Issues Management organization including the performance of an annual assessment of program implementation j. Define the expectation that root cause efforts have a charter approved by the appropriate vice president and that Root Cause Team Leaders are provided by the Issues Management organization and that they report to the appropriate Vice President for conducting the root cause k. Develop a cause evaluation checklist as an attachment that has all the critical/salient points of the process as a tool management tool for helping ensure effective implementation Corrective actions were completed and effective reviews performed in May 2011.		

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F07: The design review process applied to 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.	CR-2011-3885 Track Until Fixed	CHPRC agrees with finding F07, as defined: While the finding calls out the design review process, the discussion in the surveillance relates to procuring and installing equipment without obtaining prior Fire Marshall approval.				
			CR-2010-3049 (Ref #6)	See Ref #6		
		Discussion with the D&D Chief Engineer indicated that no equipment was authorized for installation that was not understood to be in accordance with approved design media. However, the issue with approval from the Hanford Fire Marshall Office was not clear in that there were many cases in which approvals were obtained from either the Deputy Fire Marshall or the Fire Marshall's manager and the project engineer assumed that theses approvals were sufficient. Additional confusion as to who was authorized to provide the approvals was generated because roles and responsibilities in MSA procedures differed from and conflicted with CHPRC roles and responsibilities. For example, CHPRC's Fire Protection Engineer, Deputy Fire Marshall, the Manager Fire Protection Program, or the MSA's HFMOs. As a result it was determined in October 2010 that CHPRC Fire Protection Roles and Responsibilities with h HFMO needs to be developed and associated procedures and processes developed to clarify who actually has authority. This issue was resolved in CR-2010-3375	CR-2010-3375 Opportunity for Improvement	*NOTE: All corrective actions for CR-2010-3375 were completed and the CR was authenticated on 10/31/11.* CR-2010-3375 CA#1 A revision to the 420.1B SCRD Revision 4 (Facility Safety), has been submitted by the Site Fire Marshal as requested by the RL Fire Protection SME. The revision is under review with an uncertain approval date by both DOE-RL and Site contractors. Once the SCRD is in place, appropriate procedure revisions will be completed. A new action was added to this CR to update status of the revisions. CR-2011-3375 CA2 A revision to the 420.1B SCRD Revision 4 (Facility Safety) has been submitted by the Site Fire Marshal as requested by the RL Fire Protection SME. The revision is under review with an uncertain approval date by both DOE-RL and Site contractors. Once the SCRD is in place, appropriate procedure revisions will be completed. A new action will be added to this CRRS item to update status of the revisions.	No gap was identified	No gap was identified

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F08: Construction permits were not obtained from the Hanford Fire Marshall's Office by the 100K IUUP prior to commencing construction. Note: Mutual understanding of roles and responsibilities and associated accountabilities and authorities, scope of project, and ongoing interface management issues pervaded the project.	CR-2011-3886 Track Until Fixed	CHPRC agrees with finding F08. Below is a discussion of the CHPRC response.			No gap was identified	No gap was identified
		September 29, 2010 100K senior management issued a Field Work Stop Work on the 100K Fire Suppression System Upgrade pending a comprehensive Design Document review and approval. An adverse CR was written to document the stop work and to conduct a cause analysis and develop a corrective action plan.	CR-2010-3049 (Ref #6)	See Ref #6		
			CR-2010-3375 (Ref #10)	See Ref #10		

ATTACHMENT 1 – CORRECTIVE ACTION PLAN (CAP) – PART 1 – ACTIONS TAKEN BY CHPRC PRIOR TO TRANSMITTAL OF THE RL SURVEILLANCE – (ARRANGED BY DOE-RL SURVEILLANCE ISSUE)

Revision: 0

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
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			CR #	Action #/Action Statement		
F09: The 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction.	CR-2011-3887 Track Until Fixed	CHPRC agrees with finding F09. Below is a discussion of the CHPRC response.			No gap was identified	No gap was identified
		September 29, 2010 100K Senior Mgmt issued a Field Work Stop Work on the 100K Fire Suppression System Upgrade pending a comprehensive Design Document review and approval. An adverse CR was written to document the stop work and to conduct a cause analysis and develop a corrective action plan.	CR-2010-3049 (Ref #6)	*NOTE: All corrective actions for CR-2010-3049 were completed and the CR was authenticated on 4/28/11.* CR-2010-3049 CA#6 Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the supply portion for the new 100K water treatment facility. DCN-KUP-163 documents the action and approvals by the Deputy Fire Marshal. CR-2010-3049 CA#7 Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the sprinkler system for the new 100K water treatment facility. DCN documents the action and approvals by the Deputy Fire Marshal. CR-2010-3049 CA#8 In coordination with consultant fire protection engineer, design-build contractor, and the Deputy Fire Marshal, the 100K Infrastructure project has re-designed the fire alarm system for the new 100K water treatment facility. A DCN documents the action and approvals by the Deputy Fire Marshal. CR-2010-3049 CA#9 Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the distribution system for the new 100K water treatment facility. DCN-KUP-153	Note: Discussion with the project Chief Engineer indicated that CHPRC did not proceed knowing the design didn't meet requirements. CHPRC did know that field changes were going to be necessary as with any design build activity, which is why the DCN/ECN processes were used. There were resource limitations on both ARES and MSA.	

ATTACHMENT 1 – CORRECTIVE ACTION PLAN (CAP) – PART 1 – ACTIONS TAKEN BY CHPRC PRIOR TO TRANSMITTAL OF THE RL SURVEILLANCE – (ARRANGED BY DOE-RL SURVEILLANCE ISSUE)

Revision: 0

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
				and 09) document the action and approvals by the Deputy Fire Marshal. CR-2010-3049 CA#10 Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the fire pump portion for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal documents the action. C CR-2010-3049 A#11 In coordination with the consultant fire protection engineer, the Deputy fire Marshal, and the design-build contractor, the 100K Infrastructure project has re-designed the fire walls for the new 100K water treatment facility. A subcontractor submittal was approved by the Deputy Fire Marshal documenting the completed action.		

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		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F10: CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer/ Deputy Fire Marshal.	CR-2011-3891 Track Until Fixed	CHPRC agrees with finding F10. Below is a discussion of the CHPRC response.			No gap was identified	No gap was identified
Note: A corporate work site assessment (NUMBER) concluded that: Mutual understanding of roles and responsibilities and associated accountabilities and authorities, scope of project, and ongoing interface management issues pervaded the project.		This CR addresses interfaces with the MSA and roles and responsibilities with respect to Fire Protection Engineers and Fire Marshalls. This CR is related to CR 2010-3049 (Ref #6) The recommended actions in this CR were to: Develop Roles and Responsibilities with the CHPRC Fire Protection Engineers and the Hanford Fire Marshall's Office with respect to the duties associated with the Fire Protection Engineers, Hanford Fire Marshall's Office and new Project Design.	CR-2010-3049 (Ref #6)			
			CR -2010-3375 (Ref #10)			

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F11: CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question. The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.	CR-2011-3893 Track Until Fixed	CHPRC agrees with finding F11. Below is a discussion of the CHPRC response.				
Ref #11		CHPRC identified a Potential Inadequacy on the Documented Safety Analysis (PISA) on 7/27/2011 (CR-2011-2362). Root cause evaluation was completed on 11/30/11 and the following two root causes were identified: 1. The incorporation of the hazards analysis into the safety basis was not performed in accordance with PRC-PRO-NS-700, Safety Basis Development. During incorporation of the Hazards Analysis into the FSAR, it was incorrectly determined that the infrastructure upgrade (proposed safety basis activity) did not impact the FSAR. Instead, only a reference to the HA was added. The required peer review and functional review of the proposed change to the FSAR were less than adequate as they did not result in incorporation of the increase in frequency of a basin overflow event 2. A requirement of PRC-PRO-NS-700 was not understood or enforced. The HA team leader did not understand that a team review of the HA did not meet the PRC-PRO-NS-700 requirement for an independent "peer review". This requirement of PRC-PRO-NS-700 was not enforced. The fact that the discrepancy between the HA and the FSAR was identified later during an independent, critical	CR-2011-2362 Significant	Ten actions were identified to address this issue. Five of these actions are in progress and the effectiveness review is planned for 7/31/2012. CR-2011-2363 CA#1 - Completed USQ Determination. CR-2011-2363 CA#2 - The Root Cause Evaluation was provided to the D&D Project Corrective Action Review Board (CARB). The RCE was provided to the ESRB Chairman and was approved on 11/30/11. CR-2011-2363 CA#3 - Provide additional briefing/clarification of expectations for D&D Project Nuclear Safety personnel regarding following procedure PRC-PRO-NS-700 in the development of safety basis changes and the expected level of detail to be presented in hazards analysis tables. CR-2011-2363 CA#4 - Perform an Extent of Condition review at 105KW. A review will be conducted of a random sample of 105KW HA for issues similar to those discovered with the infrastructure Hazard analysis CR-2011-2363 CA#5 - CHPRC-1105856 transmittal of the 105k west basin evaluation of safety of the situation (ESS) for the basin overflow positive unreviewed safety question determination was transmitted to RL on 12/29/2011 CR-2011-2363 CA#6 - Revise HNF-SD-WM-SAR-062, K Basins Final Safety Analysis	No gap was identified	No gap was identified

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		review is evidence that it is possible, even likely, that a critical, independent review of the Infrastructure HA, conducted by a qualified individual who was not involved in the infrastructure HA process, would have resulted in recognition of the increase in frequency of the basin overflow event.		Report, with respect to the frequency of the 105-KW Basin Overflow Event due to the existence of a small section of piping in the service water loop to the west of the 105KW facility. CR-2011-2363 CA#7 - Revise KBC-43475, 100K Area Infrastructure Upgrade Hazards Analysis, to address the frequency of the basin overflow accident and to document the logic used during the HA process. CR-2011-2363 CA#8 - Submitted a Lessons Learned to the CHPRC LL Coordinator in accordance with PRC PRO-MS-067. CR-2011-2363 CA#8 - Brief CHPRC Nuclear Safety personnel on requirements and expectations for conducting a "peer review" when a hazards analysis is performed. Include specific lessons learned from this event. CR-2011-2363 CA#10 - Perform an Effectiveness Review of the corrective actions from this event, in compliance with PRC PRO QA-052, Issues Management, and in accordance with one of the assessment methods outlined in PRC-MP-QA-40092, CHPRC Assessment Program Plan.		

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		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F12: CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.	CR-2011-3984 Track Until Fixed	CHPRC agrees with finding F12. Below is a discussion of the CHPRC response.				
Ref #12		During a CHPRC Independent Assessment (CHPRC-PO-IA-10-02), deficiencies were identified in the implementation of the Project Execution Plan (PEP) process as required by PRC-PRO-PM-24889, *Project Initiation and Execution*. Specifically to this finding, the 100K Utilities Upgrade Project PEP was in continuous revision without issuance as a controlled document. This practice was out of compliance with PRC-PRO-PM-25000, Project Execution Plans, Rev 1, Chg 0. CR-2010-1080 was written addressing three Project Execution Plans that were not in compliance with PRC-PRO-PM-25000. Corrective Actions were taken to address each non-compliance.	CR-2010-1080	*NOTE: All corrective actions for CR-2010-1080 were completed and the CR was authenticated on 8/24/11.* CR-2010-1080 CA-3 100K Utilities Upgrade Project PEP was updated and issued.	Gap identified: A requirement in PRC-PRO-PM-24889 that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M, is not included in PRC-PRO-PM-25000, Project Execution Procedure, and key personnel may be unaware of the requirement.	CA-5: Revise PRC-PRO-PM-25000, Project Execution Plans, to: •Clearly define roles, responsibilities, accountabilities, and authorities (R2A2). •Include the requirement that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M. This requirement is currently included in PRC-PRO-PM-24889, Project Initiation and Execution, but absent from PRC-PRO-PM-25000. •Include a requirement that appropriate SMEs must review and sign the PEP for the respective subject matter area. •Include a requirement that the CHPRC Chief Operating Officer (COO) will perform routine project reviews for medium and/or high-risk projects. •Include a requirement to use the Environmental Activity Screening (EAS) form as input to development of the Field Execution Schedule (FES). •Require review by the PRB when key personnel (e.g., Project Manager) are changed during project execution. CA-6: Brief personnel, as appropriate, on the requirement that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M. 1. Brief/train personnel, as appropriate, to this requirement.

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CARS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F13: CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.	CR-2011-3896 Track Until Fixed	An Email from PNNL dated 4/12/10 states, in part, "In the meantime, the existing blanket ecological reviews for these four areas are set to expire on 4/15. By this message, these reviews are extended until May 15, 2010, with the following stipulations: 1) Contact us regarding any major actions, including activities related to building demolition, and we will try to provide you updated coverage for at least that portion of your blanket review as soon as possible. 2) Before starting new actions, look around the area and make sure all workers are observant for nesting migratory birds (on structures as well as on the ground), or other unusual species that might be of concern. Let me know if you observe any bird nests or other critters that you have questions about, and we will try to help you out as soon as possible. 3) Most wildlife (even snakes) should be left alone unless there is a clear health or safety risk, in which case animal control can remove the offending creatures. Michael Sackschewsky, PNNL Ecological Monitoring and Compliance Further an Email from PNL dated 5/24/10 states "This email extends coverage of ECR #2010-100-073 (100K Blanket Biological Review) to include the three projects described below, with the following recommendations: During the May 7, 2010 survey, one active house finch (*Carpodacus mexicanus*) nest was observed behind a light fixture at Door 607 on the north side of 105-KW near the proposed HVAC upgrade project. This species is protected under the Migratory Bird Treaty Act. It is recommended that any	N/A	N/A	Gap identified: CHPRC agrees with the finding. The ECO incorrectly applied the site wide NEPA CX in this instance. This was an incorrect application of the site wide CX.	None

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRPS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		activities involving alterations to the building exterior at this immediate location be avoided until the juvenile birds have fledged. The breeding season of local migratory birds extends through mid-July and the status of nesting activity can change quickly. Gravel substrates common throughout the 100-K Area may provide potential nesting habitat for ground-nesting migratory birds (e.g., killdeer) and buildings may provide potential nesting habitat for numerous structure-nesting birds (e.g. American robin, barn swallow, black-billed magpie, cliff swallow, common raven, house finch, Say's phoebe, western kingbird). Project staff should be advised to check for bird activity on ground surfaces and structures prior to initiating work tasks. If any active nests or birds exhibiting defensive behaviors (flying at workers, refusal to leave area, strident vocalizations) are encountered during work, please contact M. R. Sackschewsky for further consultation. Assuming compliance with these recommendations, no adverse impacts to species or habitats are expected to occur from the proposed project activities. This amendment to ECR #2010-100-073 is valid through April 15, 2011.				

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		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
F14: CHPRC did not meet contractual requirements requiring the maintenance of an active Memorandum of Understanding between CHPRC and the Hanford Fire Marshal's Office.	CR-2011-3897 Track Until Fixed					
		Corrective actions were addressed through CR-2010-3375 to clarify the roles and responsibilities of the Site Fire Marshal, Fire Marshal's Office, Deputy Fire Marshals, and Qualified Fire Protection Engineers. Corrective action #2 of CR-2010-3375 includes writing new program documentation to address the RL Supplemental Contractor Requirements Document (SCRD) O 420.1 B delineates the general functions of the HFMO. The SCRD also references the Fire Marshal roles and responsibilities as contained in the Authority, Responsibilities, and Duties of the Hanford Fire Marshal (a.k.a. Fire Marshal Charter), and requires RL contractors to recognize and institutionalize the HFM's authority. The "Memorandum of Understanding", Rev. 0, between Hanford Fire Marshal's office and other contractors with fire protection engineers designated as deputy fire marshals (CHPRC-0800081) was fully executed September 24, 2008. CHPRC formally maintained the MOU as an active (not cancelled) document within the CHPRC system until December 5, 2011. The MOU was cancelled on December 5, 2011 via Mission Support Alliance (MSA) letter MSA-1105736 from Dan Soura to Mr. Hansen. Administrative Interface Agreement (HNF-51041 Rev. 0) for Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement signing was completed	CR-2010-3375 (Ref #10)		Gap identified: The SCRD O 420.18 at section E.3.b states "...shall form an agreement or memorandum of understanding." The action at left states we use Administrative Interface Agreements which would be ok with respect to the CRD but there is no reference to that agreement signed between CHPRC and MSA.	CA-17: Conduct a Management Assessment (Gap Analysis) of current Interface Agreements (including CRDs) to identify and resolve any gaps.

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		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
		December 5, 2011. The cause evaluation team asked why CHPRC personnel behaved as if an active MOU between CHPRC and the Hanford Fire Marshal's Office was not in effect. It is surmised that the CHPRC staff believed the MOU could be cancelled as the roles and responsibilities were in place in revised procedures within both the MSA and the CHPRC systems. The MSA 'blue' sheeted the subject Memorandum of Understanding as part of their contract transition. On October 27, 2009, DOE provided a signed contract modification 065 for CHPRC use. The contract modification 065 changed CRD O 420.1B (Supp Rev 1) to CRD O 420.1B (Supp Rev 4). There was an email dated, September 9, 2009, to the CHPRC VP ESH stating that "Now that the MSA is on-board and with....the 'endorsed' fire protection procedures in-place....the interface agreement is no longer necessary..." However, the CRD issued in 2009 continued to require an agreement or Memorandum of Understanding. A new interface agreement between CHPRC and MSA was issued in December 2011. The CHPRC management team was not aware that MSA had allowed their version to expire at the end of the 'blue' sheet time duration.				

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			CR #	Action #/Action Statement		
F15: CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis and provided adequate Lockout/Tagout notification and briefings.	CR-2011-3898 Track Until Fixed					
Ref #13		CR-2010-3998 was initiated to document a recurring adverse trend related to Lockout/Tagout events across CHPRC between April and December 2010. CHPRC categorized a recurrent event based upon a review of recent reportable events related to Lock and Tag violation occurring at several CHPRC facilities.	CR-2010-3998	CHPRC evaluated the issues to identify any commonalities among the 11 events that had not been identified during the individual Causal Analyses and Corrective Action Plan (CAP) for the individual events. One Direct Cause (DC-01), one Root Cause (RC-01) and one Contributing Cause (CC-01) were identified: DC-01: Supervisors, Authorized Workers and Subcontractors have not demonstrated adequate formality in LOTO or other operations to the level that complies with critical safety programs. RC-01: CHPRC Management has not ensured demonstration, by field supervision and personnel, of formality in LOTO or other operations to the level that complies with critical safety programs. CC-01: CHPRC Management has not placed adequate emphasis on lower level hazardous energy control events / questions / concerns to adequately prevent recurrence. One Preventive Action (PA) was developed to address RC-01 and three actions were developed to address CC-01: PA 1: Revise the CHPRC Management Observation Program to specifically address LOTO work evolutions. The following actions were taken: • Developed and incorporated a checklist for managers performing / documenting observation/oversight in the field which addresses organization / individual behaviors in the area of hazardous energy control into PRC-PRO-QA-40099,	The actions taken in response to this CR are expected to resolve the issues identified in Finding F15. No gaps were identified.	

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		How CHPRC addressed this issue prior to 12/12/11- include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
				Management Observation Program. • Revised PRC-PRO-QA-40099 to set minimum expectations for oversight coverage of Hazardous Energy Control during the evolution of work, from pre-job, through the work evolution, to post-job, • Communicated the revisions to PRC-PRO-QA-40099 (new LOTO observation / oversight requirements) through completion of Required Reading (RR) by managers performing/documenting observation/oversight in the field of subcontractor and CHPRC The effectiveness review (SHS&Q-2012-WSA-11683) concluded that the actions taken are effective including consideration of run time since action completion. The actions are believed to have had adequate time and opportunity to mature.		
			CR-2011-2293, Action 10	As a corrective action to CR-2011-2293, the following changes were made to PRC-PRO-SH-40078 (Rev 1-6), which was published on 1/24/12: • Clarified CHPRC OS&IH responsibilities with regards to subcontractor work activities; • Provided direction to use Appendix I as an option for use by Contractors who do not have their own approved process or choose not to use the AHJHA process; • RevisedAppendix A, SOW Option 2 trigger to include work involving a Permit-required confined space entry; • Removed the trigger for elevated work activities that do not have a fall protection plan; • Updated referenced procedures		

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				throughout the document; • Included the OS&H approval of Contractor's hazard analysis documents in Appendix F; • Revised Appendix F requirements regarding Contractor performing lockout/tagout; • Provided additional guidance and direction for the job safety analysis process described in Appendix I to include reference to the K-3 JSA.		

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			CR #	Action #/Action Statement		
O01: CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer.	CR-2011-3901 Track Until Fixed	CHPRC agrees with Observation O01. The lack of response from CHPRC's central environmental management will be reviewed, addresses and documented in CR-2011-3901.	None	Increased awareness of the impact of the lack of response on project performance.	Gap identified: A system/method for tracking requests for services from field support personnel (e.g., ECO) was discontinued during the transition from Fluor Hanford, Inc. to CHPRC. This absence of a method to track requests is fundamental to this observation.	CA-3: Institutionalize a method to track and close requests for services from field environmental support staff to the central environmental group.
O02: Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.	CR-2011-3902 Track Until Fixed	CHPRC agrees with Observation O02. This observation resulted from the interview with "the individual occupying the role of IUUP Project Manager from November 2009 to April 2010". This Project Manager was re-interviewed to evaluate what occurred. During the interview the Project Manager stated that what he intended to communicate during the first interview was that he attempted to contract with a QA support person (external to CHPRC via an ICWEA), but the request was not granted. Review of the field execution schedule identified that no QA assessment was scheduled. Discussion with a CHPRC quality assurance (QA) SME revealed no requirement for an assessment to be completed prior to start of construction.	N/A	The projects were identified as General Service Quality Level-3. The Statements of Work were reviewed commented on and approved by Quality Assurance. Submittals from the vendors as identified by Engineering for QA review were reviewed commented on and approved by Quality Assurance personnel. For major equipment identified by engineering as important for operations, Quality Assurance and Engineering developed inspection plans to be used by Acquisition Verification Services personnel at the vendor's facilities these plans included witnessing of testing and record reviews. Additionally the equipment was receipt inspected on arrival at Hanford. Quality Assurance aided in the development of CHPRC generated test plans and approved the same. QA witnessed testing of components and systems on a random basis. The results of the inspections or observations were documented in surveillances or in the test documentation. These records as well as Acquisition Verification Services receiving reports and trip reports are included in project files.	Gap identified: The project manager did not have authority of the assigned project. One of the basic premises of a project manager is that they have the authority to deploy the resources they require for project success. The failure of the project manager to get 'approval' for a needed resource indicates that perhaps they were not fully the project manager.	Action: Develop and implement transfer of authority for the full range of roles and responsibilities to a project manager.
O03: CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.	CR-2011-3903 Track Until Fixed	CHPRC agrees with Observation O03.				
Notes from Corporate WSA: PEP failed to describe the regulatory aspects, and interfaces, roles and		A Management Assessment was performed and documented in EPC-STP-MA-10060 identifying a need to	2010-3029 (Ref #14)	JIM – I DON'T SEEM TO BE ABLE TO MATCH UP THE WRITEUP BELOW WITH THE WORDS IN THE CR, e.g. there's only	Gap identified: Lessons learned from other projects are not	CA-5: Revise PRC-PRO-PM-25000, Project Execution Plans, to: •Clearly define roles, responsibilities,

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Revision: 0

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions: How CHPRC addressed this issue prior to 12/12/11. Include reference.	Prior Actions: Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed. CR #	Prior Actions: Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed. Action #/Action Statement	Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
responsibilities, the risk only described industrial risk, not project regulatory risk. Close coupled EPC approach not described. Both regulatory and change management issues were not addressed in the PRB process. This was early in the PRB process and as the process evolved additional expectations and rigor were added based on lessons learned. This project was considered low risk.		Improve PRC-PRO-PM-24889, *Project Initiation and Execution*. PRO-PM-24889, Project Initiation and Execution, has incorporated into Appendix A all of the identified elements of integration of safety in design that were identified in the lines of inquiry for the management assessment. While the body of the procedure indicates applicability to all PRC projects subject to CRD 413.3A, the appendix A text indicates that it is applicable to EPC. The broader applicability is intended and may be clarified if the procedure is updated.		one action in 3029. CA#1 Revise PRC-PRO-PM-24889 to be a broader scope. Completed Action Procedure has broader applicability to CHPRC and not just EPC Need to check CA#1 In a forum where Construction Managers are present, include discussion or presentation discussing PRC-PRO-PM-24889, EPC Project Initiation and Execution, and its key elements. Completed action 6/23/2011 In the EPC all hands meeting conducted 6/23/11, key elements of PRC-PRO-PM-24889, *EPC Project Initiation and Execution*, was discussed during the presentation.	presently an integral part of each PRB review. Project Initiation and Execution procedure states in applicability section "This procedure applies to all personnel performing project planning and execution activities for designated EM Clean-up Subprojects." However, it also states that sub-projects are managed by EPC...this may lead to confusion that if the sub-project is not managed by EPC the procedure does not apply. Gap identified: Review of PRB records indicate that only 6 sub-projects have been reviewed in the past couple years. This implies that very few sub-projects were historically identified at CHPRC and the PRB process applied.	accountabilities, and authorities (R2A2). •Include the requirement that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M. This requirement is currently included in PRC-PRO-PM-24889, Project Initiation and Execution, but absent from PRC-PRO-PM-25000. •Include a requirement that appropriate SMEs must review and sign the PEP for the respective subject matter area. •Include a requirement that the CHPRC Chief Operating Officer (COO) will perform routine project reviews for medium and/or high-risk projects. •Include a requirement to use the Environmental Activity Screening (EAS) form as input to development of the Field Execution Schedule (FES). •Require review by the PRB when key personnel (e.g., Project Manager) are changed during project execution. CA-6: Brief personnel, as appropriate, on the requirement that the CHPRC President's office or the EPC Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M. CA-7: Develop and provide briefing to each PBS level project management team on the requirements and expectations for identification of and management of a sub-project. CA-8: Conduct a Management Assessment of each PBS to determine if activities would benefit from being established as a sub-project and provide results to the COO. CA-10: Revise PRC-CHRT-PM-40249, Project Review Board Charter, to: •Include discussion of Lessons Learned as an integral part of each PRB,

S-11-EMD-PRC-001 Concern, Finding, or Observation	New CHPRC CRRS Condition Report	Prior Actions			Gap identified by CHPRC between actions either in progress on 12/12/11 or completed, and the issue identified in S-11-EMD-PRC-001.	New actions planned as a result of this evaluation.
		How CHPRC addressed this issue prior to 12/12/11. Include reference.	Corrective actions identified prior to 12/12/11 by CHPRC and either in progress or completed.			
			CR #	Action #/Action Statement		
						•Include a list of project SMEs to be considered for invitation to each PRB meeting. •Include an expectation that a PRB will be conducted when key personnel (e.g., Project Manager) are changed during project execution.
Ref #15		A Worksite Assessment performed by the EPC organization (EPC-2011-WSA-9162) identified that a sampling of EPC Construction Managers were unaware of PRC-PRO-PM-24889, *EPC Project Initiation and Execution*. CR 2011-1599 was written to address the issue.	CR-2011-1599 (Ref #15)	In the EPC all hands meeting conducted 6/23/11, key elements of PRC-PRO-PM-24889, *EPC Project Initiation and Execution*, was discussed during the presentation.		
O04: After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorized the event.	CR-2011-3905 Track Until Fixed	CHPRC agrees with Observation O04 Evaluation of the timeline associated with the discovery and occurrence report filing found the following. The 5/18/2010 incident was reviewed and determined not reportable. On 6/4/2011 it was identified that there had been two incidents of a similar nature (one on 5/3/10 and one on 5/18/10) and thet this series of issues was determined to be of sufficient concern to warrant issue of an ORPS report under the Group 10(2) criterion. Report EM-RL–CPRC-GENLAREAS-2010-0013 Was filed on 6/8/10.	None	None	Gap identified: The DOE-RL Surveillance states that the "Description of Occurrence" in the Occurrence Report neither fully, nor accurately discloses all relevant information regarding the incidents. The report was generated with the information available at that time. As the analysis progressed, and new information was gathered, CHPRC did not review what was initially submitted and update the report to provide clarification/correction. An opportunity was missed to update this ORPS report once the cause evaluation had been completed.	CA-13: Update EM-RL- -CPRC-GENLAREAS-2010-0013 "Description of Occurrence" in the Occurrence Report to fully, and accurately disclose all relevant information regarding the incidents.

ATTACHMENT 2

CHPRC-1200377
CONTRACT NUMBER DE-AC06-08RL14788

ROOT CAUSE EVALUATION REPORT

Consisting of 63 pages,
including this cover page

A-6004-535 (REV 1)

ROOT CAUSE EVALUATION REPORT

Non-Compliance with Contractual and Regulatory Requirements Prior to Initiating Construction on the 100K Infrastructure Utilities Upgrade Project (IUUP)

(CRRS Condition Report CR-2011-3840)

January 30, 2012

Post-ESRB, Rev 0, Change 1

Root Cause Team Leader: James A. Meeker Date: 1/30/12

Responsible Manager: Kurtis L. Kehler or Joseph M. Swartz Date: 1/30/12

ESRB: John G. Lehew III or John A. Ciucci Date: 2/1/12

Table of Contents

1.0 PROBLEM STATEMENT ..... - 3 -
2.0 EXECUTIVE SUMMARY ..... - 3 -
3.0 EVENT DESCRIPTION/NARRATIVE ..... - 10 -
3.1 Background of the IUUP ..... - 10 -
3.2 Fast Track Construction ..... - 10 -
3.3 Event Time-Line ..... - 11 -
4.0 EVALUATION OF ASSESSMENT PERFORMANCE ..... - 11 -
5.0 PROBLEM EVALUATION ..... - 13 -
5.1 Root and Contributing Causes ..... - 13 -
5.2 Responses by Surveillance Finding/Observation ..... - 13 -
5.3 Issues Related to Lack of Integration of Fire Protection Program (FPP) Requirements ..... - 30 -
6.0 EXTENT OF CONDITION/GENERIC IMPLICATION ..... - 31 -
7.0 EFFECTIVENESS REVIEW CRITERIA ..... - 31 -
8.0 LESSONS LEARNED ..... - 31 -
9.0 ATTACHMENTS ..... - 32 -
Attachment 1 – Corrective Action Plan (CAP) – PART 1 – Actions Taken by CHPRC Prior to Transmittal of the RL Surveillance – (Arranged by DOE-RL Surveillance Issue) ..... - 33 -
Attachment 2 – Corrective Action Plan (CAP) – PART 2 – Cause/Action Reconciliation Matrix (Additional Actions Identified During the Root Cause Evaluation) ..... - 33 -
Attachment 3 – Barrier Analysis – Failed Barriers 37
Attachment 4 – Why Analysis 38
Attachment 5 – CHPRC 100K IUUP Barrier Analysis Summary 61

1.0 PROBLEM STATEMENT

CHPRC IUUP commenced construction, prior to obtaining regulatory agency required permits and necessary approvals. The Project accepted risk of regulatory agency enforcement actions without written authorization from the DOE. A DOE-RL Surveillance Report determined the Project actions to be non-compliant with contractual, State, and Federal requirements, and concluded the CHPRC's corrective action efforts did not recognize or otherwise address a pattern of non-compliance, revealing a weakness in the implementation of Integrated Safety Management and Project Management requirements for this Project.

Specific examples are documented in DOE-RL Surveillance S-11-EMD-PRC-001, *Review of the 100K Infrastructure Utilities Upgrade Project*, which was received by the CH2M Hill Plateau Remediation Company (CHPRC) on 12/12/11. The Surveillance activities resulted in identification of one Concern (stated in the paragraph above), fifteen Findings (that support the Concern), and four Observations.

The surveillance noted that while substantial [1]redesign and some rework of the fire protection system were required during Project execution, CHPRC delivered fully functional fire and drinking water systems at completion.

2.0 EXECUTIVE SUMMARY

On 12/12/2011 CH2M HILL Plateau Remediation Company (CHPRC) received a transmittal from the DOE-RL, of Surveillance Report S-11-EMD-PRC-001, *Review of the 100K Infrastructure Utilities Project Surveillance*. This surveillance evaluated the integration of environmental and safety requirements into the performance of the Project. One concern, fifteen findings, and four observations are documented in the surveillance report. This surveillance also noted that a similar concern was issued in a previous RL assessment (Surveillance Report A-10-SED-PRC-23) of 5/27/10, which stated in part: "CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated [2]FPP requirements".

IUUP Funding

In CY-2009, the CH2M Hill Plateau Remediation Company (CHPRC) received American Recovery and Reinvestment Act (ARRA) funding to support infrastructure projects intended to assist in the acceleration of closure activities at the 100K Area site. The purpose was to expedite Deactivation and Decommissioning (D&D) of existing 100K Area facilities in order to remove contamination that has caused or may cause further harm to the environment, and to reduce the overall footprint of the site. Completing the scope of the 100K Infrastructure Utilities Upgrade Project (IUUP) would allow 100K facility operations to continue uninterrupted, while minimizing the impacts to D&D operations. A detailed description of the IUUP is included in Section 3.0, Event Description/Narrative.

[1] Fire Protection System redesign included the diesel fire pump, fire walls, fire detection system, and fire suppression system. Estimated cost was $180,000.

[2] FPP: Fire Protection Program

IUUP Project Status

The IUUP was executed as a [3]fast track project Error Precursor: Increase in risk, which warrants additional planning/evaluation and construction was completed in CY-2010. [4]Fast-tracking a project can accelerate the schedule but requires that additional risks be taken. If the risks materialize, then either the end date will slip or expensive rework will be needed. During execution of the IUUP project, substantial redesign and some rework of the fire protection system were required Error Precursor: Departure from routine; however, CHPRC delivered fully functional fire and drinking water systems at project completion. All required approvals had been obtained prior to placing the constructed systems into operation. Additionally, completion of the IUUP made a significant contribution to later progress in D&D of facilities at 100K, resulting in a greater number of facilities being demolished than originally planned. During construction, ongoing 100K facility operations were essentially uninterrupted.

DOE-RL Concern: Contractual and Regulatory Requirements Were Not Complied With

Notwithstanding the facts listed in the preceding paragraph, the DOE-RL Surveillance Summary states: "This surveillance reveals that CHPRC did not meet all requirements applicable to 100K IUUP activities. Multiple examples of not meeting requirements involving several different disciplines were noted." The DOE-RL Concern states: "The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition." The discussion for this Concern included the following: "This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program."

The Root Cause Evaluation Approach

A multi-disciplined Root Cause Evaluation (RCE) team was chartered, in compliance with PRC-PRO-QA-052, *Issues Management*, to evaluate the issues communicated in the DOE-RL surveillance and to prepare a formal response. The team first compiled a detailed timeline. Then, in an effort to identify gaps, each issue presented in the DOE-RL Surveillance was evaluated against actions previously taken by CHPRC to address the issue. The results were documented in Attachment 1 to this report. Next, failed barriers were examined using a barrier analysis. A "why analysis" was then used to research answers to specific questions to determine why a particular event or condition had occurred. A diagram was prepared to display the grouped barriers with their related effects and causes. Finally, a corrective action plan was developed (comprised of both Attachment 1 and Attachment 2 to this report). The CHPRC Issues Management process required review by the D&D Project Corrective Action Review Board

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[3] Fast Track Construction: A method of project delivery in which the sequencing of construction activities enables some portions of the project to begin before the design is completed on other portions of the project.

[4] Project Management, a Systems Approach to Planning, Scheduling, and Controlling; by Harold Kerzner, PHD.

(CARB conducted on 13 January, 2012). In addition this evaluation and corrective action plan was selected to be presented to the Executive Safety Review Board (ESRB conducted on January 25, 2012). The CHPRC effort to develop and submit this report on schedule was delayed one week due to inclement weather that resulted in a facility closure day on the day the ESRB meeting was scheduled to be held. It was necessary to reschedule the meeting on a date when both CHPRC and DOE-RL participants could be present.

Results of this Root Cause Evaluation

This Root Cause Evaluation concluded that CHPRC inadequately managed the 100K IUUP in relation to the issues identified in the DOE-RL Surveillance, and based on realized risk and complexity. Management oversight was less than adequate to proactively identify and respond to emerging performance issues during IUUP planning and construction. Project performance to DOE-RL and CHPRC expectations for implementation of ISMS/EMS was unsatisfactory. The errors made during construction were not limited to environmental regulatory non-compliance, but involved lack of compliance to existing procedures and requirements including Nuclear Safety, Safety, Fire Protection, and Environmental.

Specific failed barriers are identified in the attached barrier analysis. These included a broad range of issues spanning from human performance through programmatic and management issues. The range of issues listed in the Surveillance span a period of time from the Spring of CY-2009 to the Fall of CY-2010. In some cases, gaps were identified between the issues identified in the DOE-RL Surveillance and the actions previously completed by CHPRC to address those issues when they were initially identified.

The following root and contributing causes were determined:

ROOT CAUSES:

NOTE: Only key actions designed to address root causes are listed in this section. A comprehensive list of actions is included in Attachment 1, *Corrective Action Plan (CAP) – PART 1 – Actions Taken by CHPRC Prior to Transmittal of the RL Surveillance*, and Attachment 2, *Corrective Action Plan (CAP) – PART 2 – Cause/Action Reconciliation Matrix (Additional Actions Identified during the Root Cause Evaluation)*.

Root Cause-1: Management did not perceive project risk as related to regulatory enforcement or contractual non-compliance. The management team did not recognize the potential regulatory and/or contractual implications and thought that the risk of proceeding with construction before receipt of required approvals was limited to possible project [5]rework. Error Precursor: Lack of knowledge/faulty mental model, unawareness of critical parameter.

Why this is designated a "root cause": *The decision to proceed "at-risk" would not have been made if management had correctly recognized the regulatory and contractual requirements, and if regulatory and contractual implications had been clearly communicated and understood.*

[5] "Rework" is defined in this context as removing and reinstalling a previously installed component(s) that did not meet approved design criteria. It was necessary to remove and reinstall this component(s) to bring the respective system into compliance with the approved design.

Root Cause Discussion: Based on criteria that existed at the time, the IUUP was considered a low risk, low complexity, industrial construction project. Discussions had been conducted with the regulator, Washington Department of Health (WDOH). Similar equipment/design had recently been approved, and there was a high degree of confidence that the design would be approved. A false mind-set existed that some regulatory approvals were required prior to starting operations only, and not prior to start of construction. Error Precursor: Lack of knowledge/faulty mental model, unawareness of critical parameter. Contributing to the management problem was a lack of continuity of leadership. In the early phases of the Project when risks (and opportunity) were highest, three separate Project Managers were assigned. Error Precursor: Changes/departure from routine. In this environment, strategic management decisions were made, on more than a single occasion, to proceed "at-risk". These decisions were based upon the perception that the risk was limited to rework of design/equipment and not a risk of unfavorable regulatory or contractual consequence. Error Precursor: Inaccurate risk perception. Though DOE-RL had been in attendance for multiple discussions about this project, including meetings with regulators; the decision to proceed "at-risk" was made without written authorization from DOE-RL. To achieve the aggressive project schedule, management was willing to accept the risk of rework. The effect was that Project management did not adequately identify or control the challenges associated with this fast track construction project.

At the start of construction of the water system, the environmental approvals were outstanding, and some systems were still in the design phase. In the case of the WDOH, the regulator had been engaged in previous discussions. Under these circumstances, CHPRC decided, inappropriately, to proceed "at-risk" of rework.

Key Corrective Actions for RC-1:

1. CHPRC training course 600080, *Impacts of Proceeding "At-Risk" in Potential Noncompliance with Regulatory Requirements*, has been developed and training has been completed. No CHPRC project shall proceed "at-risk" of an environmental non-compliance.

2. Provide training to functional organization SMEs on identification and documentation of requirements (e.g., regulatory, fire protection, contractual) related to construction, and practices established to ensure these requirements are included in the Project Execution Plan (PEP) and on the Field Execution Schedule (FES). The training should include aspects of change management related to changing requirements, staff, and roles responsibilities accountabilities and authorities.

3. Institutionalize a method to track and close requests for services from field environmental support staff to the central environmental group.

4. Conduct a CHPRC Management Assessment evaluating: PEP content, SME input, and approvals, Project Review Board (PRB) adequacy, participation and documentation, transfer of requirements to the FES, and QA input to the Project planning, design and construction phases. Focus on FPE, ECO, NS and subcontractor involvement, and include low risk, low complexity, and fast track projects where applicable.

5. CHPRC Project Management procedures will be revised and implemented. One change will be to expand and clearly define the criteria utilized to formulate the project risk determination, beyond estimated project cost, to include challenges such as fast-tracking a project (which increases project risk), and risks related to ensuring regulatory and/or contractual requirements are consistently met (see Attachment 2 for details). Additionally, the Project Execution Plan and Project Review Board processes will be improved to ensure requirements are clearly communicated and understood.

Root Cause-2: Established CHPRC ISMS/EMS processes were not adequately implemented during project planning and scheduling, or adhered to during project execution. Error Precursors: Planning was less than adequate.

Why this is designated a "root cause": *[6]Planning a project is the single most important activity that will influence the project, because successful project execution is not possible without a good project execution plan. This cause is identified as a "root cause" because adequate planning would have resulted in a clear understanding of project risk and an unacceptable sequence of project activities (construction before regulatory or contractual approval) would have been revealed and avoided. Regulatory requirements would have been tracked to completion (or shown approval of an exemption) on the Field Execution Schedule. Following project management procedures and processes would have resulted in inclusion of required regulatory requirements and permits in the Project Execution Plan.*

Root Cause Discussion: The low risk, low complexity decision drove the level of detail of the planning process. As a result, the rigor involved in the identification and tracking of regulatory permits and requirements was less than adequate. PRC-PRO-PM-24889, *Project Initiation and Execution,* and PRC-PRO-PM-25000, *Project Execution Plans*, were not effectively used or fully implemented at project inception. Relative to PRC-PRO-PM-25000, the content of the Project Execution Plan (PEP) did not meet the requirements of the procedure. The PEP did not "provide a reference or identify documents that establish the environmental regulatory strategy for the project" to include the following: "Description of the governing environmental regulatory requirements for the project (e.g., RCRA, CERCLA); a brief description of environmental regulatory documents and permits required for the project; status and plans for NEPA compliance." Instead, the PEP provided only a statement that the project would follow company procedures. Error Precursor: Written communication less than adequate. Additionally, the Project Manager did not ensure that applicable environmental regulatory requirements and documents were defined, scheduled, and complied with during project execution. The Project Review Board (PRB) process did not adequately evaluate environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities. Error Precursor: Unawareness of critical parameters. The PEP was not approved before start of construction. The Field Execution Schedule lacked specific line items for regulatory permits/approvals required to be obtained prior to start of construction. Planning for this activity did not result in identifying and tracking all required regulatory permits and approvals prior to the start of construction and some contractual requirements were not met. Contributing to these issues is a concern that staffing and oversight appear to have been less than adequate for this work scope.

[6] PRC-PRO-PM-24889, Project Initiation and Execution, Section 5.8

Key Corrective Actions for RC-2:

1. The Project Review Board (PRB) process will be strengthened. Revisions include defining and expanding the criteria used to determine project risk (e.g., fast track will result in determination of greater risk), SME review of the Project Execution Plan (PEP) and SME attendance at the PRB.

2. PRC-PRO-PM-25000, *Project Execution Plans*, will be revised to require routine/interim PRB reviews for high-risk projects. These reviews will ensure that CHPRC procedures are being used appropriately, risk is properly managed, and performance is reported; these project reviews also provide an alternate path for [7]Integrated Project Team (IPT) members to express concerns with project compliance.

3. Conduct a CHPRC Management Assessment evaluating: PEP content, SME input, and approvals, PRB adequacy, participation and documentation, transfer of requirements to the FES, and QA input to the Project planning, design and construction phases. Focus on FPE, ECO, NS and subcontractor involvement, and include low risk, low complexity, and fast track projects where applicable.

4. Develop and provide training to each PBS level project management team on the requirements and expectations for identification and management of a sub-project.

5. Revise PRC-PRO-EP-15333, *Environmental Protection Processes*, to require use of tools generated by each functional organization (e.g., the Environmental Activity Screening [EAS] form [Site Form A-60004-962]) for activities subject to PM requirements per PRC-PRO-PM-24889.

CONTRIBUTING CAUSES (CC):

NOTE: Actions identified to address the Contributing Causes are listed in Attachment 2.

CC-1: Organizational roles, responsibilities, accountabilities, and authorities (R2A2) and interfaces were not well defined, understood, or enforced. Error Precursor: Unclear roles or responsibilities.

Contributing Cause Discussion: Interfaces were not adequately defined or managed. These interfaces included the D&D Project Manager, Pacific Northwest National Laboratory (PNNL), MSA Hanford Fire Marshal's Office, D&D Project Engineering, Subcontractors, Environmental Compliance Officer, WDOH, DOE-RL, the D&D Project Environmental Manager, and the CHPRC Central Environmental Organization. CHPRC policies and procedures did not accurately integrate fire protection program requirements into project design and construction.

Since these events occurred, a set of CHPRC fire protection procedures has been developed to ensure roles, responsibilities, and requirements are clear. An Integrated Product Team (IPT) was

[7] DOE STANDARD DOE-STD-1189, Integration of Safety into the Design Process. A key concept that is included in the Standard is the importance of the Integrated Project Team (IPT).

not initiated in a timely fashion, with all resources, and was not used to adequately balance schedule pressure against compliance risks.

CC-2: Appropriate Subject Matter Experts (SME) were not involved with the Project Review Board or required to sign the Project Execution Plan.

Contributing Cause Discussion: Only the Project Manager presented the project status and general regulatory status during this PRB meeting. It is possible that if the Environmental Compliance Officer (ECO) had had signature authority on the PEP that the regulatory requirements would have been listed and clarified prior to approval of the PEP. It is also likely that if the ECO had been present at the PRB, that the regulatory risk associated with initiating construction before WDOH approval of the Project Report had been obtained, would have been discussed and the implications better understood. This is listed as a contributing cause because a mind-set existed, in the project at this point, that the informal understandings with the WDOH were sufficient for the project to proceed. Error Precursor: Interpretation of requirements/Faulty mental model.

CC-3: The CHPRC contractor assurance system failed to identify the emerging issues with the project in a timely manner. This was exacerbated by the fact that the project was not receptive to internal/external oversight.

Contributing Cause Discussion: CHPRC's contractor assurance system (including the self-assessment process, the ESRB process, management oversight, performance trending, and corrective action management) did not detect the project management weaknesses. The need to assess project management activities was not recognized initially when projects funded with ARRA funding were authorized and staffing levels in the independent assessment group were not sufficient to support this effort. CHPRC's schedule of assessments did not include assessment of project management. Though the ESRB process was used to evaluate individual events identified during IUUP construction, the process did not result in detecting the Project Management and ISMS/EMS weaknesses that were being realized in the Project. The Issues Management (IM) Process failed to detect the emerging trend.

Additionally, during project planning and execution, when internal (e.g., SME) or external advice and/or oversight was provided, the Project was not adequately receptive of, or provided an untimely response to this advice/oversight. In part, to address this issue, CHPRC has centralized key functional organizations (e.g., Environmental, SH&Q) and corrective actions have been identified to strengthen the project review process and to increase project oversight.

NOTE: Since these events occurred, the CHPRC Contractor Assurance system has gone through significant restructuring based on customer feedback. CHPRC has instituted the Senior Supervisory Watch/Enhanced Management Oversight process. The self-assessment process has also been revised through the Integrated Corrective Action Plan (ICAP). The Issues Management process has also been greatly improved and training has been conducted.

3.0 EVENT DESCRIPTION/NARRATIVE

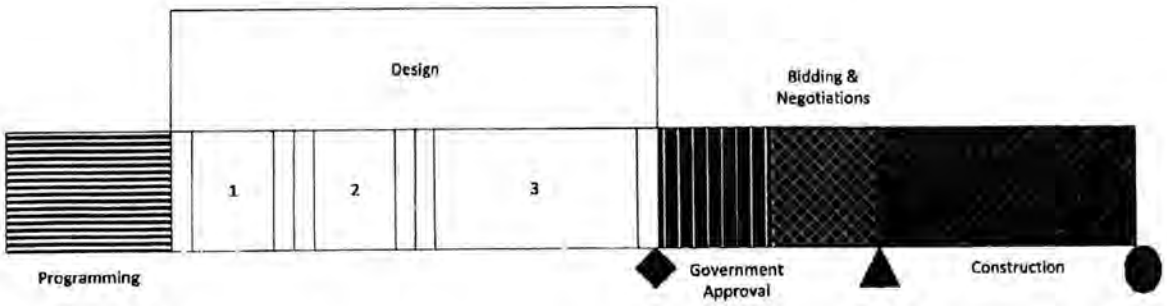
3.1 Background of the IUUP

In FY-2009, CHPRC received ARRA funding to support infrastructure projects that would assist in the acceleration of closure activities at the 100K Area site. The 100K Area was expediting Deactivation and Decommissioning (D&D) of existing facilities in order to remove contamination that may cause further harm to the environment and to reduce the overall footprint of the Site. Completing the scope of the 100K IUUP would allow 100K Area Facility operations to continue while minimizing the impacts to D&D operations. The project would install 27,000 feet of potable and non-potable (fire suppression supply) water line, a 750,000 gallon capacity raw water tank, high volume fire water pumps, and a new microfiltration potable Water Treatment Plant (WTP) to support the existing 100K facilities. An import line would also be installed to convey raw water from the 100B/C export line located in the 600 Area (east of 100 B/C), through approximately 13,000 ft. of 12 in. pipe to the 100K site. In addition, a new electrical substation (A9) with modifications to the 13.8 kV power distribution system and isolation of the A7 substation was to be accomplished. Further, a new heating, ventilation, and air conditioning (HVAC) system was to be installed at the KW Basin to provide an enhanced work environment. The total life cycle cost of the project was estimated to be $23,380,700 (does not include costs associated with operation and maintenance).

3.2 Fast Track Construction

The normal process of construction scheduling involves the performance of a series of discrete functions, one after the other, in a predetermined, sequential order. The customary logical order of these functions is programming, design, governmental approvals, bidding and negotiation, contract award, construction, and finally, completion. Each activity is virtually completed before the next may be commenced. This is shown in Figure 1 below.

Figure 1: Normal Construction Schedule

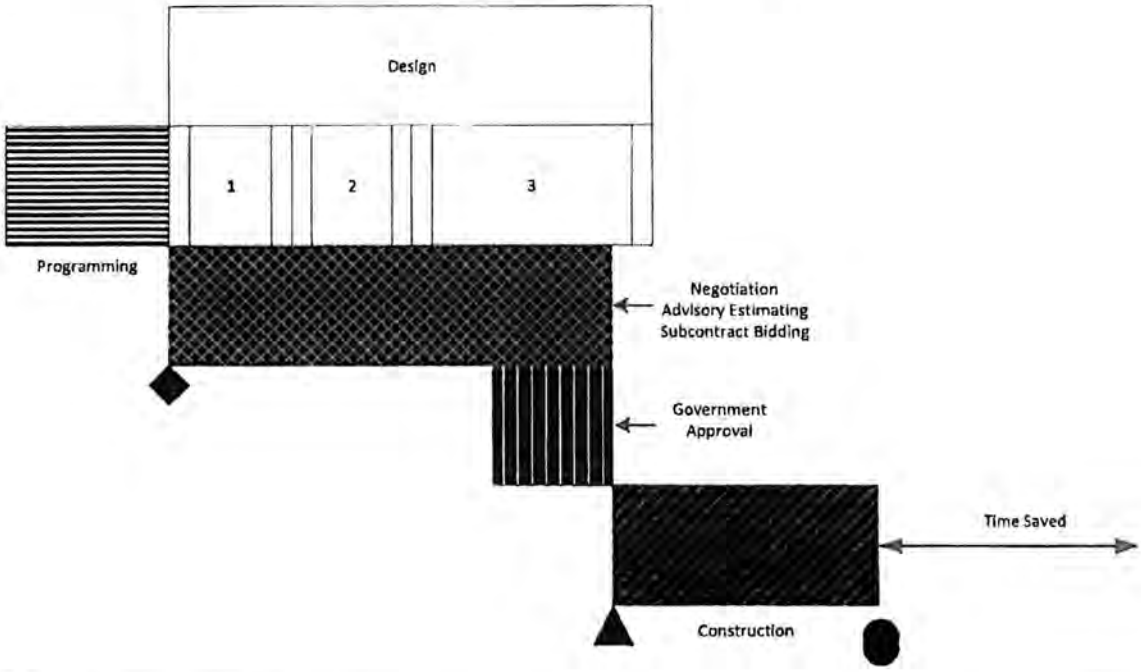


The IUUP was executed as [8]fast track construction. In fast track construction, the customary time allotted to complete specific phases of a project is compressed by performing some construction functions concurrently. Error Precursor: Increase in risk, which warrants additional planning/evaluation

[8] Fast Track Construction: A method of project delivery in which the sequencing of construction activities enables some portions of the project to begin before the design is completed on other portions of the project.

Schedule/time pressure. Organizing a project to produce early completion by the technique of concurrent or overlapping time scheduling is the essence of fast track construction. As these project phases overlap, additional risk (e.g., of rework and increased cost) is assumed. See Figure 2 below.

Figure 2: [9]Fast Track Construction Schedule



3.3 Event Time-Line

An event time-line related to the IUUP was developed and will be uploaded to CR-2011-3840. Though helpful for the cause evaluation effort, the information in the timeline is not significantly different from the DOE-RL Surveillance so is not included in this report.

4.0 EVALUATION OF ASSESSMENT PERFORMANCE

A critical review was performed as part of the PRB that was held on April 21, 2010. The project management issues were not identified. In CY-2009 and CY-2010, CHPRC's self assessment process did not detect the project management weaknesses. The need to assess project management activities was not recognized initially when projects funded with ARRA funding were authorized and staffing levels in the independent assessment group were not sufficient to support this effort. CHPRC's schedule of assessments did not include assessment of project management. Error Precursor: Lack of oversight.

[9] Reference: Fast Track Construction, Arthur O'Leary, FAIA, MRIAI.

It is credible that a more robust and empowered internal self-assessment program may have resulted in identification of the issues experienced during construction of the IUUP at an earlier time.

CHPRC improved its self-assessment process as part of the actions completed through the Integrated Corrective Action Plan (ICAP). One of the four main focus areas of this plan was Self-Assessment and Performance Trending. Implementation of the ICAP began in February 2011.

Following completion of construction of the IUUP, CHPRC completed a Work Site Assessment report (SHS&Q-2011-WSA-10713) documented a thorough extent of condition review for the 100K Infrastructure Utilities Upgrade Project. The assessment team included CHPRC management as well as CH2M Hill Inc. leadership representing the regulatory, design/engineering, and operations/programmatic disciplines. Two specific subprojects were reviewed, the 13.8 kV A-9 Substation and the HVAC system for the 105KE Building. The purpose of the assessment was to evaluate these two subprojects against the concern, findings, and observations documented in a draft DOE-RL Surveillance (S-11-SED-PRC-006). The assessment team did not identify any impacts that affect the operability of the two subprojects. Some highlights of the report, pertinent to this cause evaluation are included below:

- The Project Execution Plan failed to describe the regulatory aspects, and interfaces, roles and responsibilities, the risk only described industrial risk, not project regulatory risk. The fast track approach (e.g., condensed time where project phases were to be performed concurrently) was not described.
- Both regulatory and change management issues were not addressed in the PRB process. This was early in the PRB process and as the process evolved additional expectations and rigor were added based on lessons learned. This project was considered low risk.
- Unresolved Safety Question (USQ) reviews were performed as changes were submitted (i.e., DCNs and FMPs were not deferred for evaluation prior to startup as was done for the water system and permitted by Appendix B of PRC-PRO-NS-062 [USQ Process]). Applicable USQs back to 9/1/2010 were reviewed and no similar issues were identified.
- Specifications, design & procurement activities were done well. LO/TO, configuration control, final acceptance, interface control, and pre-planning were not done well.
- Design process was followed; however there were resource limitations on both ARES and MSA. Changing MSA staff appeared to influence changing MSA expectations.
- Mutual understanding of roles and responsibilities and associated accountabilities and authorities, scope of project, and ongoing interface management issues pervaded the project.
- On the 13.8 kV sub-station there were issues with LO/TO due to multiple organizations' administrator programs involved.
    - Less than adequate change management during the transition from construction to energized equipment resulted in LO/TO issues
- No instances of a non current JSA were identified on either subproject
- The project had performed QA reviews of procurement activities and elected to focus oversight on the HVAC and 13.8kV subprojects.
- The same PRB was performed for all three subprojects.

5.0 PROBLEM EVALUATION

CHPRC conducted a Root Cause Evaluation of the issues identified in the DOE-RL Surveillance between 12/12/11 and 1/18/12. The team was led by Jim Meeker and team members included Gary Grant, Steve Swenning, Stephen T. Smith, John Kristofzski (CH2M Hill CCI), Rick Engelmann, and Doug Reinhart.

The cause evaluation tools used during this evaluation included the following: First, an **event time-line** was prepared in an effort to clarify the order in which events had occurred. Next, a **table** (Attachment 1) was used to map each Surveillance issue to corrective actions previously taken by CHPRC. This allowed the team to determine if additional actions were recommended to close gaps. A **barrier analysis** was then generated to identify failed barriers and the reasons for failure. Finally, a **Why Analysis** was used to answer specific questions derived from the Surveillance report and the cause evaluation tools. Additional analysis tools used included a **Barrier Analysis Summary** diagram, and a **Why Analysis Summary** diagram.

5.1 Root and Contributing Causes

The Root and Contributing Causes are stated in the Executive Summary.

5.2 Responses by Surveillance Finding/Observation

NOTE: Corrective actions previously completed to address each of the findings below are included on the CHPRC Response Matrix. New corrective actions are listed on Attachment 1 -- Cause/Action Reconciliation Matrix.

Finding S-11-EMD-PRC-001-F01: CHPRC did not apply to the Washington State Department of Health for approvals required by the Washington Administrative Code prior to commencing construction of the 100K IUUP Potable Water System. See "Why Analysis Question #1".

Causes:

1. Required environmental permits and authorizations were not sufficiently identified during the project planning phase, including the dates approvals were needed in comparison to the date construction activities would commence. Error Precursor: Planning was less than adequate.

2. Focus on wrong issues distracted project personnel from a primary responsibility to ensure strict compliance with applicable regulations. Error Precursor: Faulty mental model. These issues included:
   a. CHPRC understood that the regulator (WDOH) was "comfortable" with the planned PALL technology based on its use elsewhere in the State of Washington.
   b. It was understood that, based upon the WDOH review of the Project Report, the WDOH may request changes to the system at project cost. The WDOH would expect that the changes would be made by CHPRC to correct any outstanding issues.
   c. Project Manager assumed that it would be acceptable to proceed with construction because the water treatment system would not be connected to the distribution system until WDOH approval had been obtained.

3. Schedule pressure Error Precursor: Schedule/time pressure. resulting from:

a. Multiple delays in the effort with PNNL to identify a path for the import water line that avoided impact to sensitive cultural sites, Error Precursor: Changes/Departure from routine.
b. The expectation to achieve milestones, specifically D4 of KE water systems,
c. Pressure associated with short-term ARRA funding.

4. PRC-CHRT-PM-40249, *Project Review Board Charter*, did not include sufficient direction to verify that environmental and other requirements have been met prior to start of construction. Error Precursor: Procedure less than adequate.

5. Management guidance/expectations were not well defined, understood, or enforced. CHPRC had not adequately communicated the expectation that it is not acceptable to proceed with construction "at-risk" of regulatory non-compliance. Error Precursor: Unclear goals, roles, and responsibilities. PRC-PRO-EP-15333 had not explicitly defined drinking water approval process; however, the requirement not to proceed with construction before obtaining regulatory approval was incorporated by reference.

6. The need to train was not identified. CHPRC had not identified the need to train personnel to the expectation that it is not acceptable to proceed with construction "at-risk" of regulatory, contractual, or other non-compliance. The 100K ECO had not been adequately trained on regulations pertaining to construction of drinking water systems.

Finding S-11-EMD-PRC-001-F02: CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act prior to commencing construction of the 100K IUUP facilities. (See Why Analysis Question #3a, Question #15, Question #21).

Causes:

1. The 100K ECO accurately identified and broadly communicated the need for a CX on 6/18/09. However, this did not result in obtaining a CX before construction started in April 2010 partly because the 100K ECO did not understand the CX was needed before construction could begin on any portion of the project. Error Precursor: Lack of knowledge.

2. Communication from the 100K ECO to the CHPRC NEPA SME lacked details on schedule need. Error Precursor: Imprecise communication habits.

3. CHPRC did not have an institutionalized system (e.g., Request for Services) to track this request. Error Precursor: Imprecise communication habits.

4. This activity, obtaining a CX, was not tracked on the Field Execution Schedule (FES) and appropriate actions were not included in the PEP. Error Precursor: Imprecise communication habits.

Finding S-11-EMD-PRC-001-F03: Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions. (See Why Analysis Question #6).

Discussion:

This finding refers to CR-2010-1657, *Potential Adverse Trend – Environmental Regulatory Requirements for Construction Projects not met*, and the accompanying Root Cause Analysis Report. The barrier analysis indicates that the cause evaluation process was a failed barrier because, as stated in the DOE-RL Surveillance, Causal analysis of CR-2010-1657 did not meet guidelines specified in PRC-PRO-QA-052, *Issues Management.*

Two separate events occurred, one on 4/29/10 (potable water project at unsecured core initiated w/o WDOH approval) and the second on 5/18/10 (construction of 100K WTP initiated before environmental approval was obtained). Each of these was documented in the CRRS system and screened as "adverse" (CR-2010-1340 and CR-2010-1608 respectively). On 6/7/10 CR-2010-1657 was published to document a potential adverse trend. This CR was screened as "significant" and includes the Root Cause Analysis Report referred to in the DOE-RL Surveillance.

The Apparent Cause Evaluation completed for CR-2010-1340 on 6/18/10 documents the EOC: "The nearly simultaneous occurrences indicate such condition could be occurring in other projects. In both cases, it appears the environmental and water signers of the excavation permits were unaware of the WDOH regulatory requirement, as well as CHPRC contractual requirement that the WDOH approval of the Project Report occur before start of construction. Evaluation of CHPRC-PRO-EP-15333 also indicates that the requirement is not explicit."

Causal analysis of CR-2010-1340 was completed promptly, within the guidelines specified in PRC-PRO-QA-052, *Issues Management*, and corrective actions were implemented in a timely manner. Causal analysis of CR-2010-1608 and CR-2010-1657 did not meet guidelines specified in PRC-PRO-QA-052, *Issues Management*. It was noted that several corrective actions had been completed responsibly, prior to completion of the causal analysis.

Causes:

1. Change of employment. The trained cause evaluator who was initially assigned to conduct the Root Cause Evaluation accepted a position with another Hanford prime contractor. This resulted in a delay in the cause evaluation. Error Precursor: Change/departure from routine.

2. Key personnel were involved in or diverted to what was perceived to be higher priority work. The replacement Root Cause team leader was assigned to act as Project Manager for the 209E demolition. Error Precursor: Simultaneous, multiple tasks. This allowed less time to be spent on the Root Cause Evaluation. On 7/15/10 a request was made to extend the due date for the CR and the due date was changed to 8/31/10. The reason for this extension was unavailability of key personnel who were required to attend the RCE meeting. As a result of the change in team leaders and the unavailability of key personnel, the ESRB review was postponed from 9/1/10 and the CR was extended to 9/16/10.

3. Additional time was allotted for the ESRB to review the issue, and to incorporate ESRB comments. The Root Cause Evaluation was selected to be reviewed by the ESRB. On 8/31/10 a second request was made to extend the due date. The ESRB meeting was held on 10/13/10 and the minutes indicated that the ESRB approved the RCA, with comment. Comments were incorporated on 10/29/10 and the RCA was approved on 11/2/10. ESRB review is part of the CHPRC Issues Management process.

Finding S-11-EMD-PRC-001-F04: CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations, but it did not include actions necessary to timely comply with NEPA requirements in its Project Execution Plan and Field Execution Schedule.

Causes:

1. Written content less than adequate in the Field Execution Schedule (FES). A line item was correctly included on the FES tying WDOH approval to post-construction operations. This line item was accurate as WDOH approval was required to operate the system. However, a second entry should have been included tying WDOH approval to the start of construction. Error Precursor: Imprecise written communication habits.

2. The Project Execution Plan (PEP) did not include a brief and accurate description of environmental regulatory documents and permits required for the project? Procedure not used. The author did not review the specific requirements from the PEP procedure but instead used the table of contents to ensure all elements were considered. The procedure was not followed, as written. A generic statement that the project would follow company procedure was included in the PEP rather than a specific list/explanation of the applicable permits/requirements that would be required. In this vein, written communication was less than adequate. Error Precursor: Imprecise written communication habits.

3. Neither the Project Manager nor the environmental subject matter expert ensured that applicable environmental requirements, permits and approvals were placed appropriately on the FES.

Finding S-11-EMD-PRC-001-F05: CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.

Discussion:

On 10/23/09, a CHPRC Review and Comment Record (RCR) had been generated that identified sixty-one comments. These comments included 19 related to microfiltration, 20 addressing the fire sprinkler system, 10 referring to site plan layout design, 10 related to construction specifications, and 2 related to procurement specifications on the water storage tank. The comments were made from the vantage point of facility knowledge and represent the design preferred by the facility to meet applicable codes and standards.

During the January – February 2010 timeframe, a 90% design submittal had been provided to the Deputy Fire Marshal (DFM) with the expectation that the submittal would be provided to the Hanford Fire Marshal's Office (HFMO). Error Precursor: Unclear roles and responsibilities.

Repeated attempts to obtain a response were unsuccessful. Also, during the design phase a personnel change occurred. A CHPRC Fire Protection Engineer (FPE)/DFM was replaced by a FPE Manager. Error Precursor: Change/departure from routine.

The following Design Change Notices (DCN) were approved prior to construction and indicate that the general system design was believed to meet applicable codes and standards. Approvals by other than DFM/Hanford Fire Marshal's Office (HFMO) are attributed to unclear roles, responsibilities, accountabilities, and authorities. Error Precursor: Unclear roles and responsibilities. Related issues have been since resolved through the issuance of a suite of CHPRC Fire Protection procedures.

- DCN-KUP-002, Initial issue of the fire pump procurement specification, had been **approved by a DFM** on 12/2/09.
- DCN-KUP-007, Initial issue of the procurement specification for the 100K water storage tank, had been **approved by a DFM** on 12/9/09.
- DCN-KUP-010, Initial issue of the construction drawings for the 100K water export line, had been **approved by a DFM** on 12/9/10.
- DCN-KUP-011, Initial issue of Rev 1 construction drawings for the 100K Water Treatment System, had been approved by the FPE Manager on 3/31/10.
- DCN-KUP-012, Initial issue of the construction specification for the 100K water line and filtration system, had been approved by the FPE Manager on 3/22/10.
- DCN-KUP-013, Initial issue of the construction specification for the 100K fire protection and water lines, had been approved by the FPE Manager on3/22/10. (NOTE: This was later approved by the DFM on 2/7/11).
- DCN-KUP-014, Editorial revision to initial issue of the procurement specification for the 100K Fire Pump System, had been **approved by a DFM** on 1/26/10.
- DCN-KUP-022, Initial issue of construction drawings for the 100K Fire and Water Lines, as Rev 1, had been approved by the FPE Manager on 3/31/10.

Causes:

1. Roles, responsibilities, accountabilities, and authorities were unclear. Error Precursor: Unclear roles and responsibilities. At the time of these events CHPRC had not fully incorporated Fire Protection (FP) requirements into procedures and processes. The project accepted approval from the DFM and/or FPE manager as approval to proceed.
2. Personnel turnover.

Finding S-11-EMD-PRC-001-F06: CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

NOTE: The Stop Work issue was related to deficiencies identified in several component groups. Project and Senior Management agreed (but it was not communicated to the cause evaluator) that the method to be used to resolve the Stop Work would be to publish a Design Change Notice (DCN) or Design Submittal (DS) for each of the component groups. Error Precursor: Imprecise verbal communication habits. Upon approval for a specific system by an FPE and the HFMO, work would be allowed to resume (Stop Work partially released) on the specific group of fire system components. The following table provides examples of the approval method and dates.

Package Description	Status			Date Complete	Design Review Method	Comments
	100K Engr. Lead Reviewer	Fire Protection Engr. Reviewer	DFM/HFMO Reviewer			
Sprinklers	[10]Approved by CHPRC Engineer	Approved by Hughes Associates FPE	Approved by DFM/HFMO	11/09/2010	Design Submittal (Contract 36534-031, Submittal 15300-01, Version 8)	11/12/10 – Cascade Fire Protection was given approval to remove hangars and proceed with sprinkler construction.
Water Distribution System ICRs	Approved by CHPRC Engineer	Approved by Hughes Associates FPE	Approved by DFM/HFMO	11/10/10	ICR	Of ICRs five in process: one has HFMO concurrence; one will require RL concurrence; one submitted 11/10/10 still awaiting response from HFMO; and two require more information from project. Boroscope information supplied to DFM 12/1/10.

[10] NOTE: Names of individuals were intentionally not provided in this report.

Fire Barrier	Approved by CHPRC Engineer	Approved by Hughes Associates FPE	Approved by DFM/HFMO	12/3/2010	Design Change Notice (DCN-KUP-105& DCN-KUP-183)	Fire barrier package approved by DFM per email on Friday 12/3/10.
Fire Alarm Design	Approved by CHPRC Engineer	Approved by Hughes Associates FPE	Approved by DFM/HFMO	12/2/2010	Design Submittal (Contract 36534-031, Submittal 16722-09, Version 2)	Approval to proceed with fire detection was provided. Contractor physically began work on 12/30/10
Firewater Tank Design Mods	Approved by CHPRC Engineer	Approved by Hughes Associates FPE	Approved by DFM/HFMO	12/3/2010	Design Change Notice (DCN-KUP-130 & DCN-KUP-153)	Approval provided to George A. Grant subcontractor CBI, Inc. on 12/6/10. Physical work began week of 1/18/10
Water Supply Cross-Over	Approved by CHPRC Engineer	Approved by Hughes Associates FPE	Approved by DFM/HFMO	01/18/11	Design Change Notice (DCN- DCN-KUP-128, DCN-KUP-163 & DCN-KUP-087)	Approval provided to George A. Grant 1/18/11. Physical work began week of 1/24/11

Causes:

1. Typically, resolution of Stop Work is recorded and tracked by CHPRC in either a Safety Log Book, or in the CHPRC Condition Reporting and Resolution System (CRRS). In this case, a non-standard method was used to document resolution of the Stop Work (e.g., DCN, DS processes). The path forward to resolve the Stop Work was documented in compliance with DOE-0343, Stop Work, which states: "Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented "in accordance with Contractor procedures (logbook or other established method of reporting/tracking/communicating safety issues and corrective action management)". Emphasis added.
2. Review of the Apparent Cause Evaluation by the Project Manager prior to approval was less than adequate. This constitutes a missed opportunity as the PM was aware of the agreement of the path forward to resolve the Stop Work, but did not recognize the inconsistency in the apparent cause evaluation. Error Precursor: Complacency.
3. The method to be used to systematically resolve the Stop Work (e.g., to publish a DCN or DS for each of the component groups) was not communicated clearly to the assigned cause evaluator. Therefore, an inaccurate statement was included in the Apparent Cause Evaluation, that all actions identified in the analysis would be required to be completed before any work could resume.

Finding S-11-EMD-PRC-001-F07: The design review process applied to 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.

Discussion: This Finding is addressed on the Why Analysis. See questions 8, 9, 10, 11, and 12. Also, the CHPRC response to Findings F05 (above), F06 (above), and F10 (below) contain additional information.

Finding S-11-EMD-PRC-001-F08: Construction permits were not obtained from the Hanford Fire Marshal's Office by the 100K IUUP prior to commencing construction.

Discussion: The response to this finding is included in the response to **Finding S-11-EMD-PRC-001-F10** below.

Finding S-11-EMD-PRC-001-F09: The 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction. (See section 5.3 of this report and Why Analysis Question #10. (See Why Analysis Question #10).

Discussion:

The DOE-RL Surveillance states, in part, that the "100K IUUP installed water utility piping prior to applying for and receiving approved exemptions and equivalencies from RL." A looped fire water distribution main was required to be installed around the 105KE reactor building but the newly installed system did not provide a looped supply main around the 100K Area, nor did it provide a loop around the 105KE reactor building. Additionally, the original water loop design requirements called for 12-inch water mains but the design was changed during construction and an 8-inch pipe was installed instead. Final connections to the new fire water distribution system were performed at the Cold Vacuum Drying Facility (CVDF) on 2/5/11 and at 105KW on 2/19/11. This completed the water system installation. The non-looped water distribution exemption request was submitted to RL on 2/28/11 and the 12-inch to 8-inch equivalency request was submitted on 3/10/11. In both cases, the exemption and equivalency requests were submitted by CHPRC after installation of the non-compliant components. The Fire Protection Program (including a DFM) had approved the Design Change Notices (DCN), but had not submitted a formal application for required exemptions and equivalencies.

Causes:

1. Fire Protection Program (FPP) roles, responsibilities, accountabilities and authorities (R2A2) were unclear. Error Precursor: Unclear roles and responsibilities. The DFM assigned to the 100K IUUP understood the requirement to apply for and receive exemptions and equivalencies from RL, but the application was not submitted in a timely manner. When interviewed, Project Management had assumed (but had not made a formal request or assignment) that the DFM would be responsible to submit the application. Error Precursor: Imprecise verbal communication habits. The DFM did not understand the Project Management expectation that the DFM would submit the application. During this period CHPRC was using MSA Fire Protection Program procedures. It should be noted that

CHPRC later elected to develop a suite of CHPRC Fire Protection Program procedures, in part to ensure that FP R2A2 were clearly defined.

2. Management follow-up or monitoring of this requirement was less than adequate. A specific line item for submittal and approval of the exemptions or equivalencies was not carried on the Field Execution Schedule.

3. Focus of the DFM was on ensuring the system design was correct.

4. The HFMO had been educated in an informal manner through conversation and email regarding the proposed changes. Thus a mindset of casual understanding was present. Error Precursor: Inaccurate risk perception/imprecise communication habits.

5. Turnover of key positions including Project Mangers and CHPRC FPE/DFM to an FPE Manager may have also impacted this issue.

Finding S-11-EMD-PRC-001-F10: CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer/Deputy Fire Marshal.

Discussion:

CHPRC expected that field changes would likely be necessary as with any design build activity. For this reason the DCN/ECN processes were used. Refer to the response to Finding **S-11-EMD-PRC-001-F05.** That response provides a table of approvals that were obtained prior to start of construction. The project accepted approval from the DFM and/or FPE Manager as approval to proceed. The response to F05 also includes an explanation of the comments included in a Review and Comment Record.

Unexpected delays were encountered during the DFM/HFMO design review process. During the January – February 2010 timeframe, a 90% design submittal had been provided to the DFM with the expectation that the submittal would be provided to the HFMO. Repeated attempts to obtain a response were unsuccessful. Roles, responsibilities, accountabilities, and authorities were unclear. The DFM was primarily focused on working with the subcontractor on ensuring the system design met expectations. Competing project assignments (Richland STP, ARRA projects including trailer and staircase siting) resulted in limited access to DFM.

During the design phase, a personnel change occurred. A CHPRC FPE/DFM was replaced by a FPE Manager. Resource limitations were also encountered at MSA HFMO (and ARES).

Causes:

1. Roles, responsibilities, accountabilities and authorities were unclear. Error Precursor: Unclear roles and responsibilities. CHPRC had not fully incorporated FP requirements into procedures and processes. The Project Execution Plan (PEP) included insufficient information on roles and responsibilities related to fire protection.

2. Turnover of key personnel (FPE/DFM to FPE Manager, and Project Manager).

3. Resource limitations were encountered at ARES and MSA.

Finding S-11-EMD-PRC-001-F11: CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question. The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.

Discussion:

CHPRC developed the 100K Area Infrastructure Upgrade Hazards Analysis (KBC-43475, Rev. 1) and a KW Basin FSAR revision (HNF-SD-WM-SAR-062, Rev. 15) to support this facility modification. These documents address the potential for water releases that result in an overflow from the K-Basin. The FSAR revision was reviewed and approved by DOE-RL with a SER (10-SED-0080).

CHPRC used a provision of PRC-PRO-NS-062 (the RL approved USQ process) that states: "Design Change Notices (DCN) and Facility Modification Packages (FMP) that will be either 1) USQ reviewed prior to implementation at the facility, or 2) incorporated into a facility modification or new facility design that will be authorized by RL in a SER so long as the DCN or FMP do not modify an existing hazard category 1, 2, or 3 nuclear facility prior to RL issuance of the SER. Changes to the facility or partial installations made prior to the receipt of the SER are subject to the USQ process."

A review of the supporting Hazards Analysis, KBC-43475, Rev. 1, 100K Area Infrastructure Upgrade Hazards Analysis (HA), was performed. There were no new accident scenarios identified by the HA Team so the Team believed that the FSAR accident scenarios remained bounding and there was no need to carry forward any additional analysis.

The original hazards analysis considered multiple types of water breaks and concluded that these breaks would not provide a water flow into the basin exceeding that already postulated. All subsequent analysis confirms the conclusions of the hazards analysis were sound.

Following completion of construction of the IUUP, CHPRC identified a Potential Inadequacy on the Documented Safety Analysis (PISA) on July 27, 2011. Condition Report CR-2011-2362 was submitted on this date, the CR was screened as "significant" and a root cause evaluation was completed on 11/30/11. The following root causes were determined:

Root Cause Couplet:

- The incorporation of the hazards analysis into the safety basis was not performed in accordance with PRC-PRO-NS-700, Safety Basis Development. During incorporation of the HA into the FSAR, it was incorrectly determined that the infrastructure upgrade (proposed safety basis activity) did not impact the FSAR. Instead, only a reference to the HA was added. The required peer review and functional review of the proposed change to the FSAR were less than adequate as

they did not result in incorporation of the increase in frequency of the basin overflow event.

- A requirement of PRC-PRO-NS-700 was not understood or enforced. The HA team leader did not understand that a team review of the HA did not meet the PRC-PRO-NS-700 requirement for an independent "peer review". This requirement of PRC-PRO-NS-700 was not enforced. The fact that the discrepancy between the HA and the FSAR was identified later during an independent, critical review is evidence that it is possible, even likely, that a critical, independent review of the Infrastructure HA, conducted by a qualified individual who was not involved in the Infrastructure HA process, would have resulted in recognition of the increase in frequency of the basin overflow event.

Finding S-11-EMD-PRC-001-F12: CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Discussion:

In July 2009 a Project Execution Plan (PEP) was prepared. A document number (EPC-40524, Revision 0) was added to the PEP but the PEP was not formally approved and issued, and that fact was not communicated. Error Precursor: Imprecise verbal communication habits. Revision of the PEP to incorporate design changes and additional information was ongoing until July 2011. In March 2010 a new Project Manager (PM) was assigned to the IUUP project. The PEP presented at the PRB meeting on 4/7/10 was numbered, as previously stated. Between the 4/7/10 PRB and the 4/21/10 PRB a third PM was assigned to the IUUP project. At the time of the PRBs there was no indication that the PEP had not been formally approved and issued, however, the PRB process did not result in verifying that the PEP had been approved and issued. An assumption was made that since the PEP was numbered, it was approved and finalized. Error Precursor: Assumption.

Causes:

1. Less than adequate communication. The fact that the PEP had not been formally approved and issued was not communicated to the PM or to the PRB Chairperson. Error Precursor: Imprecise verbal communication habits.

2. The PRB process failed to verify the status of the PEP. Error Precursor: Imprecise verbal communication habits.

3. Turnover of key personnel (Project Manager) was also a contributing factor. Error Precursor: Changes/departure from routine.

Finding S-11-EMD-PRC-001-F13: CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

Discussion:

A CHPRC Environmental Compliance Officer (ECO) signed an excavation permit for the 100K potable and fire water lines on March 16, 2010. The permit was signed prior to obtaining WDOH approval, prior to obtaining authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable Cultural Resources Review (CRR). The ECO did not understand that a NEPA authorization from the DOE NEPA Compliance Officer was needed for this permit, even though the excavation permit was limited to a small segment of the project within the 100K fence-line. Error Precursor: Lack of knowledge/faulty mental model. The ECO was applying an RL "pre-approved" site wide CX for replacement in-kind activities to the segment of the project that was to be covered by the excavation permit. The use of the site-wide CX in this instance was an incorrect interpretation of NEPA requirements. Hanford Site NEPA training material addresses the prohibition on segmentation of NEPA reviews. DOE NEPA practices require that an entire project be addressed in a single NEPA review, and do not allow reviews to be conducted in segments. The appropriate, single NEPA review for the 100 K IUUP was the CX later signed by the NEPA Compliance Officer on May 26, 2010.

Cause:

1. The Root Cause Evaluation for CR-2010-1657 indicated that the apparent cause for this error was that the ECO had not received training regarding drinking water requirements. Error Precursor: Failure to train or to recognize the need for training.

2. Written communication content less than adequate. The scope descriptions for the individual site wide CXs that were available at the time on the Hanford intranet did not include the limitations on their use (such as no segmentation of NEPA reviews). Error Precursor: Imprecise written communication.

3. Focus on wrong issue. Infrequently performed activity. Error Precursor: Unfamiliarity with task.

Finding S-11-EMD-PRC-001-F14: CHPRC did not meet contractual requirements requiring the maintenance of a Memorandum of Understanding (MOU) between CHPRC and the Hanford Fire Marshal's Office. (See Why Analysis Question #16).

Discussion:

The "Memorandum of Understanding", Rev. 0, between Hanford Fire Marshal's office and other contractors with fire protection engineers designated as deputy fire marshals (CHPRC-0800081) was fully executed September 24, 2008. **CHPRC formally maintained the MOU as an active (not cancelled) document within the CHPRC system until December 5, 2011**. The MOU was cancelled on December 5, 2011 via Mission Support Alliance (MSA) letter MSA-1105736 from Dan Sours to Mr. Hansen. Administrative Interface Agreement (HNF-51041 Rev. 0) for Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement signing was completed December 5, 2011.

The cause evaluation team asked why CHPRC personnel behaved as if an active MOU between CHPRC and the Hanford Fire Marshal's Office was not in effect. It is surmised that the CHPRC staff believed the MOU could be cancelled as the roles and responsibilities were in place in revised procedures within both the MSA and the CHPRC systems. The MSA 'blue' sheeted the subject Memorandum of Understanding as part of their contract transition.

On October 27, 2009, DOE provided a signed contract modification 065 for CHPRC use. The contract modification 065 changed CRD O 420.1B (Supp Rev 1) to CRD O 420.1B (Supp Rev 4). There was an email dated, September 9, 2009, to the CHPRC VP ESH stating that "Now that the MSA is on-board and with....the 'endorsed' fire protection procedures in-place....the interface agreement is no longer necessary..." However, the CRD issued in 2009 continued to require an agreement or Memorandum of Understanding. A new interface agreement between CHPRC and MSA was issued in December 2011.

The CHPRC management team was not aware that MSA had allowed their version to expire at the end of the 'blue' sheet time duration. Error Precursor: Imprecise verbal/written communication habits.

Finding S-11-EMD-PRC-001-F15: CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis and provided adequate Lockout/Tagout notification and briefings. (See Why Analysis Question #17).

Discussion:

The subcontractor developed a Job Safety Analysis (JSA) to identify hazards and controls. Hazards identified subsequent to initial development of the initial JSA (e.g., when plant utilities are connected and new hazards are present) necessitated revision of the JSA. A revision to the initial JSA was not fully executed by the contractor to incorporate the expectations relative to lockout/tagout.

Causes:

1. Procedure content was less than adequate. Error Precursor: Procedure content less than adequate. At the time of the event, PRC-PRO-SH-40078, *Contractor Safety Processes*, did not contain work process instructions prescribing the means and methods to implement Job Safety Analysis (JSA) requirements and expectations. A corrective action included in CR-2011-2293 addresses this cause. PRC-PRO-SH-40078 will be revised or a new procedure will be developed to describe the work processes and administrative controls necessary to ensure adequate implementation of the JSA process.

2. Oversight of subcontractor was less than adequate. Error Precursor: Oversight less than adequate. Assessments were not performed or scoped to reveal conditions. CHPRC Project Management did not identify contractor deficiencies.

Observation S-11-EMD-PRC-001-O01: CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer.

Cause:

1. CHPRC did not have an institutionalized system (e.g., Request for Services tracking system) to track this request. Error Precursor: Imprecise written communication habits.

2. Human error. Unintentional mental lapse.

Observation S-11-EMD-PRC-001-O02: Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities. (See Why Analysis Question #19).

Discussion:

The projects were identified as General Service Quality Level- 3. There existed no requirement for this assessment. The PM was re-interviewed and stated that a request was made for QA support. A request for funding for additional QA support, using an Inter-Company Work Exchange Agreement (ICWEA), was denied. Existing D&D Project QA resources would be used. The PM had not intended to convey that a request was made for an independent assessment/inquiry.

Quality Assurance performed activities typical of a QL-3 project. Examples of coverage included the following. The Statements of Work (SOW) were reviewed, commented on and approved by Quality Assurance. Submittals from the vendors, as identified by Engineering for QA review, were reviewed commented on and approved by Quality Assurance personnel. For major equipment identified by engineering as important for operations, Quality Assurance and Engineering developed inspection plans to be used by Acquisition Verification Services (AVS) personnel at the vendor's facilities. These plans included witnessing of testing and record reviews. Additionally the equipment was receipt inspected on arrival at Hanford. Quality Assurance aided in the development of CHPRC generated test plans and approved the same. QA witnessed testing of components and systems on a random basis. The results of the inspections and observations were documented either in a surveillance or in the test documentation. These records as well as AVS receiving reports and trip reports are included in project files.

Cause:

1. Funding authorization was not transferred to the Project Manager.

Observation S-11-EMD-PRC-001-O03: CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities. (See Why Analysis Questions #1 and #4).

Discussion:

The PRB process did not include verification that environmental and other (e.g., fire protection) requirements had been met. Error Precursor: Imprecise written/verbal communication habits. Only the Project Manager presented the project to the PRB. The PM was questioned about regulatory requirements and indicated briefly that all was in order for start of construction. Error

Precursor: Lack of knowledge/faulty mental model. Answers to specific questions asked during the PRB germane to this analysis were Q: Is the site water purveyor involved in the project? A: Yes. Q: What is reporting requirement to State and status of report? A: Draft report ready to be issued and have been working with State so have high confidence it will be acceptable. The PRB Chairman accepted this as fact and proceeded to other topics. The PEP was available and numbered (EPC-40524 (Revision 0, July 2009). There was no indication at the time that it had not been formally approved and issued. This fact may have been lost during the transition of Project Managers just prior to the start of construction.

Causes:

1. PRC-CHRT-PM-40249, *Project Review Board Charter,* did not include sufficient direction to verify that environmental and other requirements have been met. Though PRC-CHRT-PM-40249 includes direction that the PRB will include a "discussion on documents that the PEP requires to be completed prior to moving to the next phase of the project", there is no specific reference to environmental regulatory permits. Error Precursor: Procedure less than adequate.

2. Narrow focus or focus on "wrong" issues. The project was viewed as a straight forward construction project not particularly complex or risky so the review was structured around a review of scope, cost, and schedule. The review approach determined by the PRB Chairperson (VP of EPC) was to have the PM present project scope and current status; present project baseline; review drawings, road closure permit, excavation permit, GPR scans, submittal registry; and to review key risks and concerns. During this time frame there were some issues at 200E unsecured core that prompted the PRB Chairperson to question the project management (PM) team (outside the PRB meetings) about permitting and he stated the response was that the team had that well under control. As the project was straight forward, and he pointed out the issue to the PM team, he felt no need to pursue further.

3. An environmental SME was not required to approve the PEP.

4. Appropriate SMEs (e.g., environmental) were not involved in the PRB process and did not attend the meeting.

Observation S-11-EMD-PRC-001-O04: After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorized the event. (See Why Analysis Question #20).

Discussion:

This Observation refers to Occurrence Report EM-RL- -CPRC-GENLAREAS-2010-0013. The related CRRS Condition Report is CR-2010-1657, Potential Adverse Trend – Environmental Regulatory Requirements for Construction Projects not met. To address this issue CHPRC conducted a Root Cause Evaluation and identified eight corrective actions. During this review, the team sought answers to three questions. Why was the ORPS report filed on Tuesday 6/8/10? Why was the ORPS report categorized as an SC-4? Why does the ORPS report contain inaccurate information?

Why was the ORPS report filed on Tuesday 6/8/10? CHPRC management reviewed a series of issues (environmental regulatory requirements for two construction projects not met), on Friday 6/4/10. On that date management determined that the series of issues was of sufficient concern to warrant submittal of a Management Concern. Several, separate issues had been identified over a period of time and within more than one CHPRC Project. These issues included:

- May 3 2010: EPC Unsecured Core Area Potable Water System was being constructed prior to approval of the project plan by WDOH. Approval is required prior to start of construction.
- May 18 2010: D&D 100K Area Water Treatment System was under construction prior to submittal of the project plan to WDOH.
- May 26 2010: The National Environmental Policy Act (NEPA) review for the 100K IUUP had not been completed as required before the start of construction.
- May 27 2010: A backup diesel generator was contained in the project design but there were no plans for a required permitting review.

The negative trend was identified (following discussions with the involved projects, CHPRC Management, and CHPRC support organizations) upon recognition that the separate issues included a similar theme. The DOE manual requirement that a written occurrence report be filed within two working days was met.

NOTE: The CHPRC IM process now includes enhanced training, trending and use of a CARB. It is likely that the improved IM process would have resulted in earlier identification of this trend.

Why was the Occurrence Reporting and Processing System (ORPS) report categorized as an SC-4? The determination of whether this report warranted an SC-3 or SC-4 report was made at the time of categorization, by the CHPRC management team. CHPRC maintains that the SC-4 significance category was appropriate and consistent with the SC-4 definition.

Why does the ORPS report contain inaccurate information? The DOE-RL Surveillance states that the "Description of Occurrence" in the Occurrence Report neither fully, nor accurately discloses all relevant information regarding the incidents. The report was generated with the information available at that time. As the analysis progressed, and new information was gathered, CHPRC did not review what was initially submitted and update the report to provide clarification/correction. An opportunity was missed to update this ORPS report once the cause evaluation had been completed. A corrective action will be taken to update the ORPS report to ensure that it accurately discloses all relevant information regarding the incidents.

Cause:

1. Written communication is less than adequate because an opportunity was missed to update this ORPS report following completion of the causal analysis. Error Precursor: Imprecise written communication habits.

5.3 Issues Related to Lack of Integration of Fire Protection Program (FPP) Requirements

Prior to May 2010, MSA FPP Procedures were applicable to CHPRC.

During the period of May 3 – 14, 2010, RL Safety and Engineering Division performed an assessment of the CHPRC FPP. The assessment, A-10-SED-PRC-23, concluded: "CHPRC has a FPP that substantially incorporates applicable requirements; The FPP appropriately delineates the fire protection requirements to ensure that the DOE fire protection objectives are met; And that there is a staff of experienced technically competent and fully qualified personnel who are assigned to assist CHPRC management personnel in program implementation." However, the assessment also identified one concern, five findings (four of which were used to substantiate the concern), for observations, and three good practices.

On May 14, 2010, CHPRC Fire Protection submitted CR-2010-1693 to address the following concern: "CHPRC has not fully integrated fire protection program requirements into CHPRC Procedures and Policies, D4 activities, and subcontractor activities." This Condition Report (CR) received a screening level of "significant" and CHPRC began a Root Cause Evaluation (RCE) and Extent of Condition (EOC) review.

The root cause evaluation report identified the following as the root cause and contributing causal factors:

1. The CHPRC Fire Protection Program relies on qualified Fire Protection Engineers to ensure compliance with applicable codes and standards. As such, not all applicable code requirements have been fully incorporated into CHPRC procedures. This level of expert-based reliance, as opposed to a standards-based reliance, exceeds the level to which the Authority Having Jurisdiction feels is appropriate.

2. CHPRC has not completely and accurately incorporated applicable NFPA fire protection requirements in level 1, 2, and 3 procedures. In some cases, work planning and project procedures have not adequately incorporated fire protection requirements.

3. CHPRC does not have a documented process specifying necessary actions (e.g., checklist) to be taken and used to transition a facility from an unoccupied status to a status to support D4 activities.

4. In some cases, applicable procedures fail to specify when Fire Protection Permits, FPE involvement, and FPE approval is required and fail to establish roles, responsibilities, authorities, and accountabilities to ensure that all required actions are performed.

5. Interaction between subcontractors and CHPRC was not sufficient to convey expectations of, or monitor performance. Workers have been performing repetitive tasks for several years and compliance with published procedures and permits has become somewhat relaxed. Compound this trend with limited exposure by the CHPRC Fire Protection Engineer (FPE) resulted in use of outdated procedures. The understaffing of the FPE position exacerbated this condition.

CHPRC determined that the nature of CHPRC's work on the Hanford Site, when compared and contrasted to the MSA or Washington River Protection Solutions (WRPS) mission, warranted development of CHPRC-specific FPP procedures in lieu of requesting changes to existing MSA FPP procedures. CHPRC feels this action was necessary for CHPRC to effectively control the sometimes unique fire protection requirements for the D4 mission. Those procedures have been developed and implemented and an effectiveness review has been added to the Cause/Action Reconciliation Matrix.

6.0 EXTENT OF CONDITION/GENERIC IMPLICATION

As previously stated, an EOC review was conducted for the remaining subprojects (13.8 kV switchyard and HVAC for 105KW), and results were documented in a Work Site Assessment.

Lessons learned from the IUUP construction are applicable to construction activities conducted within other CHPRC projects and by other prime contractors on the Hanford site.

7.0 EFFECTIVENESS REVIEW CRITERIA

The effectiveness review criteria and expected outcomes are provided in the cause/action reconciliation matrix. An effectiveness review, using these criteria, has been added to the Cause/Action Reconciliation Matrix and will be performed approximately six months after the completion of corrective actions.

8.0 LESSONS LEARNED

1. No CHPRC project shall proceed "at-risk" of noncompliance with regulatory or contractual requirements.
2. Planning must be rigorous for projects with specific challenges, such as fast track construction where project phases are performed concurrently. In these instances, roles, responsibilities, accountabilities, and authorities must be clarified during the planning phase. Arrange for additional staffing and oversight when these challenges are present.
3. Project schedules shall include specific tasks for planning, and identify in the schedule, sufficient time for environmental planning, compliance, and regulatory agency approvals.
4. Questions on and interpretations of environmental requirements must be directed to CHPRC Environmental lead staff.
5. Forums such as the EPC Project Review Board (PRB) should include Subject Matter Experts (SME) to ensure that information critical to the success of the project are addressed.
6. Periodic training for Subject Matter Experts (SME) is necessary to maintain an adequate knowledge base, particularly for infrequently performed tasks.
7. Where email communications that are critical to the success of a project require follow-up, simple methods should be established, communicated, and maintained to track actions to completion.
8. Methods selected to resolve a Stop Work condition must be communicated to all stakeholders. If a cause evaluation is required, the evaluator must be informed.
9. Transition of key personnel (e.g., Project Manager) from a project during project inception and execution can create risk. These risks must be carefully managed to avoid negative consequences.

9.0 ATTACHMENTS

Attachment 1 – Corrective Action Plan (CAP) – PART 1 – Actions Taken by CHPRC Prior to Transmittal of the RL Surveillance – (Arranged by DOE-RL Surveillance Issue)

Attachment 2 – Corrective Action Plan (CAP) – PART 2 – Cause/Action Reconciliation Matrix (Additional Actions Identified During the Root Cause Evaluation)

Attachment 3 – Barrier Analysis

Attachment 4 – Why Analysis

Attachment 1 – Corrective Action Plan (CAP) – PART 1 – Actions Taken by CHPRC Prior to Transmittal of the RL Surveillance – (Arranged by DOE-RL Surveillance Issue)

NOTE: This document will be attached separately to the Root Cause Evaluation Report.

Attachment 2 – Corrective Action Plan (CAP) – PART 2 – Cause/Action Reconciliation Matrix (Additional Actions Identified During the Root Cause Evaluation)

NOTE. The table below includes only the new actions recommended as a result of this Root Cause Evaluation. Actions taken previously by CHPRC to address the issues identified in the DOE-RL Surveillance are listed in Attachment 1.

Root or Contributing Cause	*Finding, Observation, Or Gap*	*Corrective Action Number*	*Action Type*	*Action Description*	*Criteria for Action Closure*	*Effectiveness Review Criteria*	*Expected Results*	*Assignee*	*Date Action Completed or Due*
RC-1	Concern, [11]F01, F04	CA-1	Preventive	Communicate the Lessons Learned generated from CR-2011-2665 (100K IUUP), to the CHPRC Projects. This may be accomplished through use of the CHPRC Continuous Improvement or other process.	Upload a copy of the document used to communicate the LL (e.g., Interoffice Memorandum, Email) to CR-2011-3840.	Verify that LL were communicated to D&D Project Management and an attendance roster was uploaded to the CR.	LL from the IUUP construction will be understood.	Jim Meeker	6/30/12
RC-1 RC-2 CC-1 CC-2	Concern F04	CA-2	Preventive	Provide training to functional organization SMEs on identification and documentation of requirements (e.g., regulatory, fire protection, contractual) related to construction, and practices established to ensure these requirements are included in the Project Execution Plan (PEP) and on the Field Execution Schedule (FES). The training should include aspects of change management related to changing requirements, staff, and roles responsibilities accountabilities and authorities.	Upload a copy of the training material used and attendance roster(s).	Review a selection of field execution schedules from across the PBS Projects to determine if regulatory requirements are included. Interview target audience to ensure training was understood.	The Project Execution Plan and Field Execution Schedule will include an accurate list of requirements applicable to the construction activity.	Jaraysi/Vaughn	6/30/12
RC-1	F02, O01	CA-3	Preventive	Institutionalize a method to track and close requests for services from field environmental support staff to the central environmental group.	Upload an example (snapshot) of an existing tracking system report.	Verify a method to track and complete requests for services. Review a cross-section sample of requests and evaluate if requests are being tracked and completed in a timely fashion.	Requests for support from central environmental will be captured, tracked, and completed in a timely fashion.	Rick Engelmann	2/29/12
RC-1, RC-2, CC-1, CC-2, CC-3, CC-4.	CR-2011-3840 Concern	CA-4	Preventive	Conduct a CHPRC Management Assessment evaluating: PEP content, SME input, and approvals, PRB adequacy, participation and documentation, transfer of requirements to the FES, and QA input to the Project planning, design and construction	Upload a copy of the Management Assessment to CR-2011-3840.	An MA was conducted, in compliance with PRC-PRO-QA-246, *Management Assessment*, and a copy was uploaded to CR-2011-3840. If additional actions are recommended, those actions were	CHPRC will determine whether the PM processes and controls in place have resolved the Concern identified in the CR.	Kent Dorr	4/30/12

[11] F01: Previous actions taken to address this finding are tracked in CR-2010-1340 and CR-2010-1608. CR-2010-1340 was screened as "adverse", received an Apparent Cause Evaluation, and listed 2 corrective actions which have been completed.

Root or Contributing Cause	Finding, Observation, Or Gap	Corrective Action Number	Action Type	Action Description	Criteria for Action Closure	Effectiveness Review Criteria	Expected Results	Assignee	Date Action Completed or Due
				phases. Focus on FPE, ECO, NS and subcontractor involvement, and include low risk, low complexity, and fast track projects where applicable.		tracked in the CRRS.			
RC-1 RC-2 CC-1	Concern, F02, F12, O03	CA-5	Preventive	Revise PRC-PRO-PM-25000, *Project Execution Plans*, to: • Clearly define roles, responsibilities, accountabilities, and authorities (R2A2). • Include the requirement that the CHPRC President's office or the Project VP must serve as the approval authority for the PEP for projects with a total cost between 20M and 100M, or projects designated as high risk. This requirement is currently included in PRC-PRO-PM-24889, *Project Initiation and Execution*, but absent from PRC-PRO-PM-25000. • Include a requirement that appropriate SMEs must review and sign the PEP for the respective subject matter area. • Include a requirement to conduct routine/interim PRB reviews for high-risk projects. • Include a requirement to use the Environmental Activity Screening (EAS) form as input to development of the Field Execution Schedule (FES). • Require review by the PRB when key personnel (e.g., Project Manager) are changed during project execution.	Upload a revised copy of PRC-PRO-PM-25000, *Project Execution Plans*, to *CR-2011-3840*.	Review project execution plans published after the revision date of the procedure to verify they are reviewed and approved consistent with the procedure direction. Verify that routine project reviews for critical projects are occurring. Interview Project Manager(s) to determine if they are fully accountable, responsible and have authority to approval their assigned project, and to assess awareness of the requirements contained in the revised procedure.	Project planning (PEPs) will be signed at the appropriate level of management and will be signed by the functional areas (SMEs) supporting the project providing an opportunity to ensure all requirements are identified and planned for early in a project. Routine project reviews will ensure that CHPRC procedures are being used appropriately, risk is properly managed, and performance is reported; these project reviews also provide an alternate path for [12]Integrated Project Team (IPT) members to express concerns with project compliance. PMs will be informed of the project status and issues prior to assumption of responsibilities.	Dan Kimball	4/30/12

[12] DOE STANDARD DOE-STD-1189, Integration of Safety into the Design Process. A key concept that is included in the Standard is the importance of the Integrated Project Team (IPT).

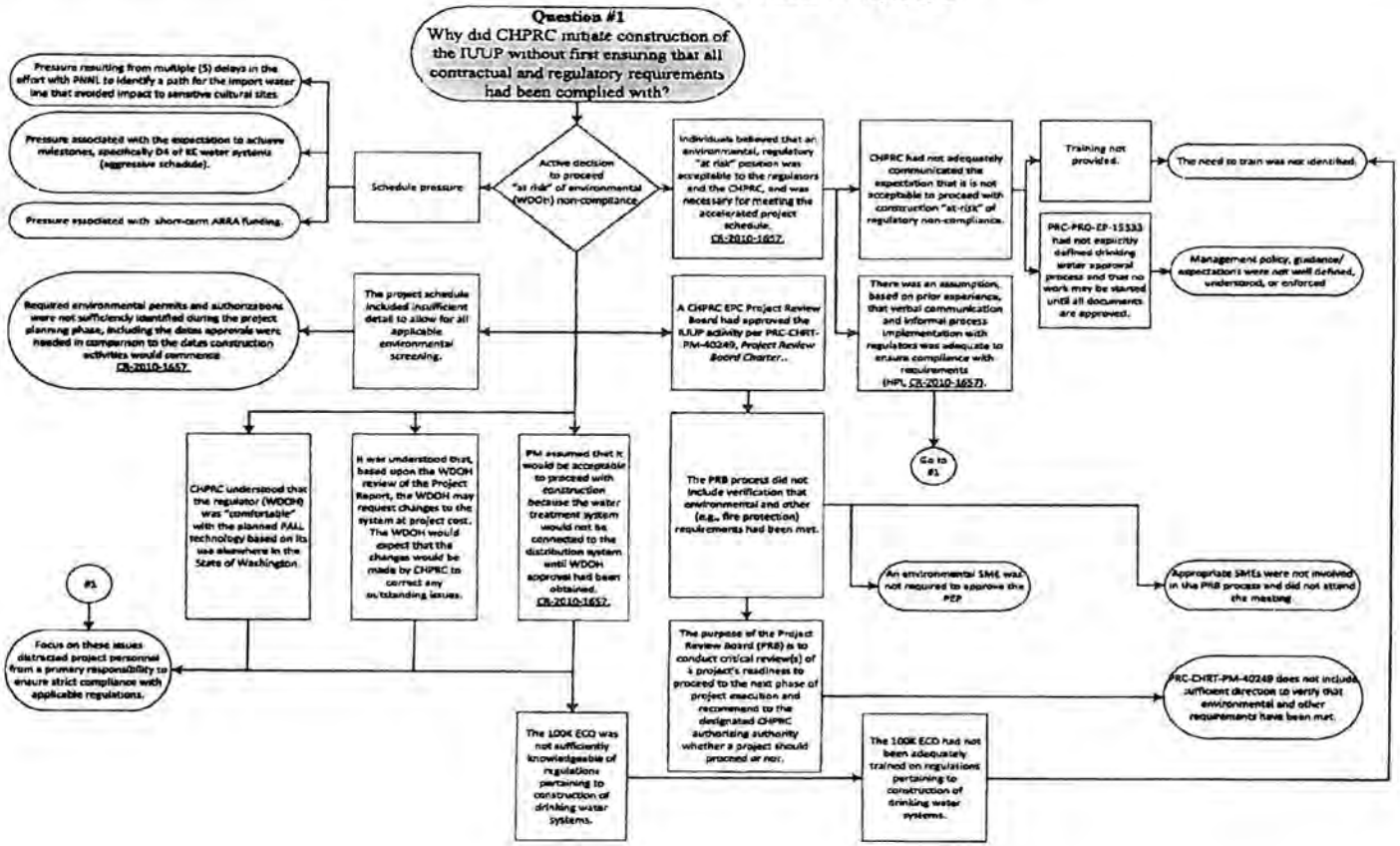
Root or Contributing Cause	*Finding, Observation, Or Gap*	*Corrective Action Number*	*Action Type*	*Action Description*	*Criteria for Action Closure*	*Effectiveness Review Criteria*	*Expected Results*	*Assignee*	*Date Action Completed or Due*
RC-1 CC-1	Concern, F12, O03	CA-6	Remedial	Brief personnel, as appropriate, to the revisions made to PRC-PRO-PM-24889 and PRC-PRO-PM-25000.	Record of who was briefed and copy of briefing material used.	Review project execution plans published after the revision date of the procedure to verify they are approved consistent with the procedure direction.	Projects receive management approval of planning (PEP) consistent with the procedure requirement.	Kent Dorr	4/30/12
RC-2 CC-1	O03	CA-7	Remedial	Develop and provide briefing to each PBS level project management team on the requirements and expectations for identification of and management of a sub-project.	Record of who was briefed and copy of briefing material used.	Interview a population of management from the PBS's to determine if they understand the requirements and expectations for identification of and management of a sub-project in their area of responsibility.	CHPRC sub-projects will be managed consistent with the suite of project management tools available.	Dan Kimball	5/30/12
RC-2 CC-1	O03	CA-8	Remedial	Conduct a Management Assessment of each PBS to determine if activities would benefit from being established as a sub-project and provide results to the COO.	Copy of reviews provided to COO.	Review sub-projects identified from the review to determine if they are being managed consistent with the suite of project management procedures.	Significantly more sub-projects will be identified and managed consistent with good project management systems and processes.	Dan Kimball	5/30/12
RC-1 RC-2	Concern, F04	CA-9	Preventive	Revise PRC-PRO-EP-15333, *Environmental Protection Processes*, to require use of tools generated by each functional organization (e.g., the Environmental Activity Screening [EAS] form [Site Form A-6004-962]) for activities subject to PM requirements per PRC-PRO-PM-24889.	Copy of PRC-PRO-EP-15333, *Environmental Protection Processes*, uploaded to CR-2011-3840.	PRC-PRO-EP-15333, *Environmental Protection Processes*, was revised to require use of the Environmental Activity Screening (EAS) form (Site Form A-60004-962).	EAS will be required and used consistently.	Rick Engelmann	4/30/12
CC-1 CC-2	O03	CA-10	Preventive	Revise PRC-CHRT-PM-40249, *Project Review Board Charter*, to: • Include discussion of Lessons Learned as an integral part of each PRB, • Include a list of project SMEs to be considered for invitation to each PRB meeting. • Include an expectation that a PRB will be conducted when key personnel (e.g., Project Manager) are changed during project execution.	Upload a revised copy of PRC-CHRT-PM-40249, *Project Review Board Charter*, or other objective evidence that the process has been changed.	Verify that either a revised copy of PRC-CHRT-PM-40249, *Project Review Board Charter*, (or an evaluation of the LL from the IUUP as they relate to this procedure) was uploaded to CR-2011-3840.	This action provides assurance that lessons, learned from the IUUP construction, have been incorporated into the PRB process.	Kent A. Dorr	7/31/12

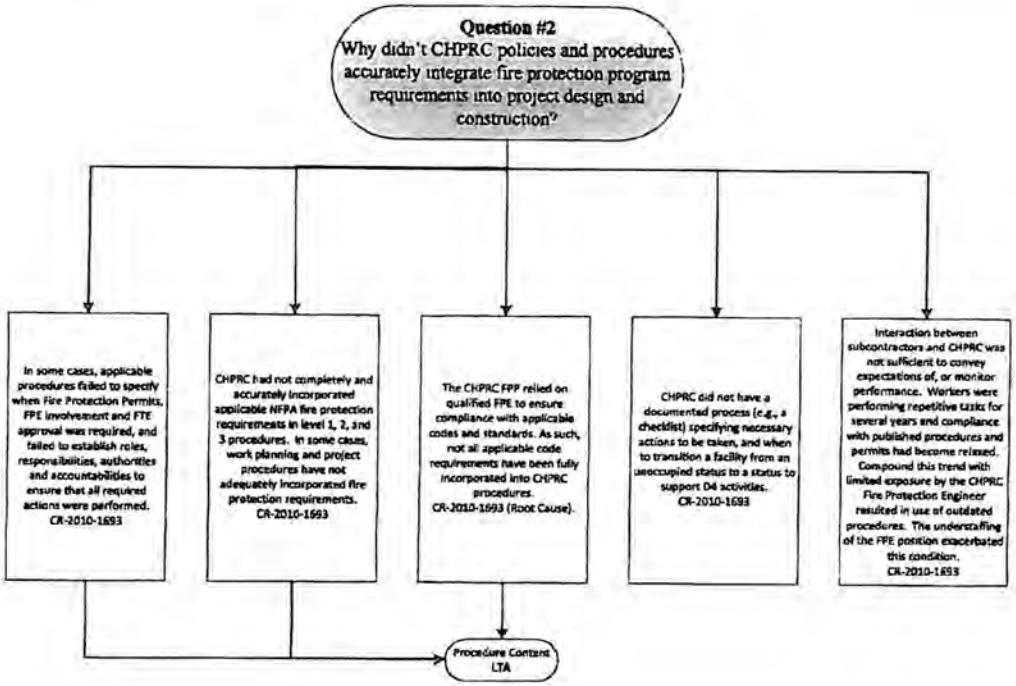
N/A	F01	CA-11	Effectiveness Review	Conduct an Effectiveness Review, per PRC-PRO-QA-052, *Issues Management*, for the corrective actions implemented for CR-2010-1657, *Potential Adverse Trend – Environmental Regulatory Requirements for Construction Projects not met (EM-RL- -CPRC-GENLAREAS-2010-0013).*	Upload a copy of the Effectiveness Review (e.g., assessment) to CR-2011-3840.	An ER was conducted, in compliance with PRC-PRO-QA-052, *Issues Management*, and a copy was uploaded to CR-2011-3840. If additional actions are recommended, those actions are tracked in the CRRS.	CHPRC will determine whether the actions taken have resolved the issue identified in the CR.	Allen E. Cawrse	4/30/12
Gap	O04	CA-12	Remedial	Update EM-RL- -CPRC-GENLAREAS-2010-0013 "Description of Occurrence" in the Occurrence Report to fully, and accurately disclose all relevant information regarding the incidents.	Upload a copy of the Occurrence Report to CR-2011-3840.	Verify action completed.	Information contained in this report will be accurate.	Lynn Nye	3/15/12
Gap	Concern, F06	CA-13	Preventive	Brief IM Administrators and central IM staff on the issue described in the Surveillance (duplicate Stop Work CR cancelled), and best practice's to close duplicate Condition Reports.	Copy of briefing and attendance roster(s).	Verify the briefings were conducted. Conduct interviews to ensure the direction was understood/internalized.	Best practices will be followed when closing duplicate Condition Reports.	Steve Swenning	3/15/12
RC-2	Concern	CA-14	Preventive	Present a recommendation to the CHPRC Executive Safety Review Board (ESRB) for consideration, to revise the appropriate CHPRC procedures to expand and clarify the criteria used to determine project risk (e.g., low, medium and high risk). Ensure the recommendation includes appropriate links to Project Management and Risk Management procedures, as appropriate. Factors to consider could include: • When a project is on a fast track, or the risk determination should be higher based on that fact alone. • Impact of failure to meet regulatory or contractual requirements.	Copy of recommendation to ESRB, and results of ESRB review.			Dan Kimball	4/15/12
Gap	F14	CA-15	Remedial	Conduct a Management Assessment (Gap Analysis) of current Interface Agreements (including CRDs) to identify and resolve any gaps that are identified during the assessment.	Upload a copy of the MA to CR-2011-3840.	Verify that a MA was performed and that "gaps" identified, if any, were submitted into the CRRS system for tracking and resolution.	Contractual requirements for MOU/Interface Agreements will be understood and met.	Steve Hansen	4/15/12
RC-1, RC-2, CC-1, CC-2, CC-3, CC-4.	Concern	CA-16	Effectiveness Review	Perform an effectiveness review of the actions identified in CR-2011-3840, per PRC-PRO-QA-052, *Issues Management*, utilizing the Performance Assurance organization.	Upload a copy of the Effectiveness Review (e.g., assessment) to CR-2011-3840.	An ER was conducted, in compliance with PRC-PRO-QA-052, *Issues Management*, and a copy was uploaded to CR-2011-3840. If additional actions are recommended, those actions are tracked in the CRRS.	CHPRC will determine whether the actions taken have resolved the issue identified in the CR.	Ken Walker / (Kurt Kehler)	12/16/12

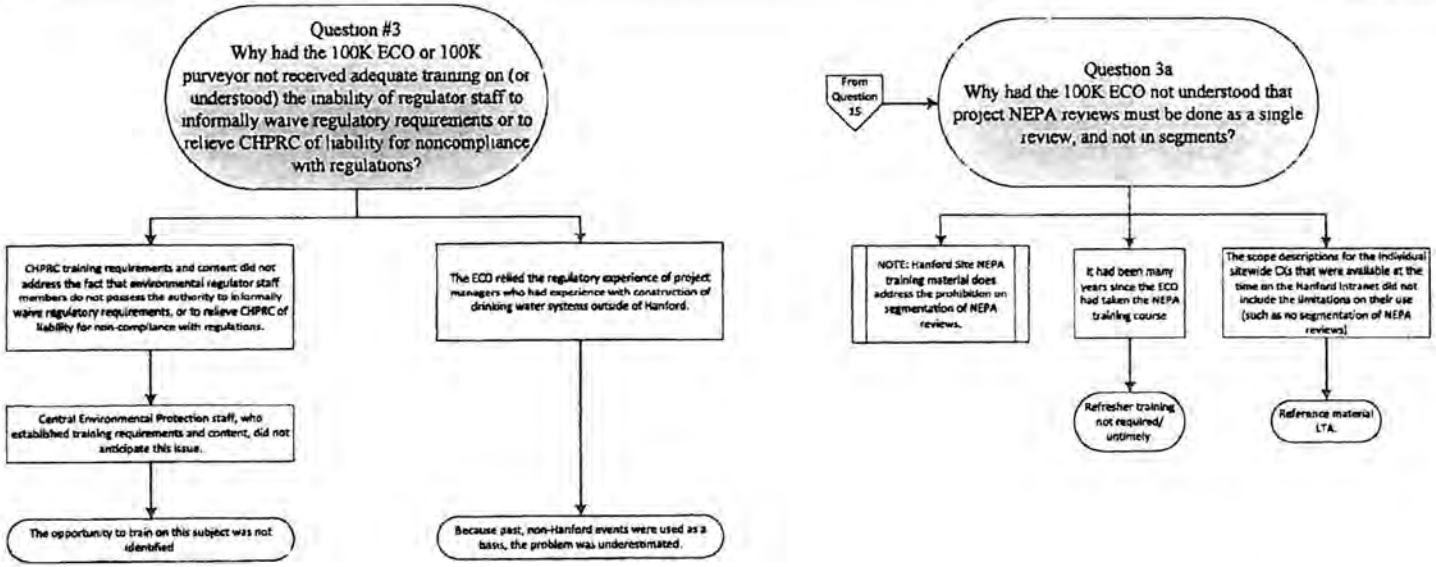
Attachment 3 – Barrier Analysis – Failed Barriers

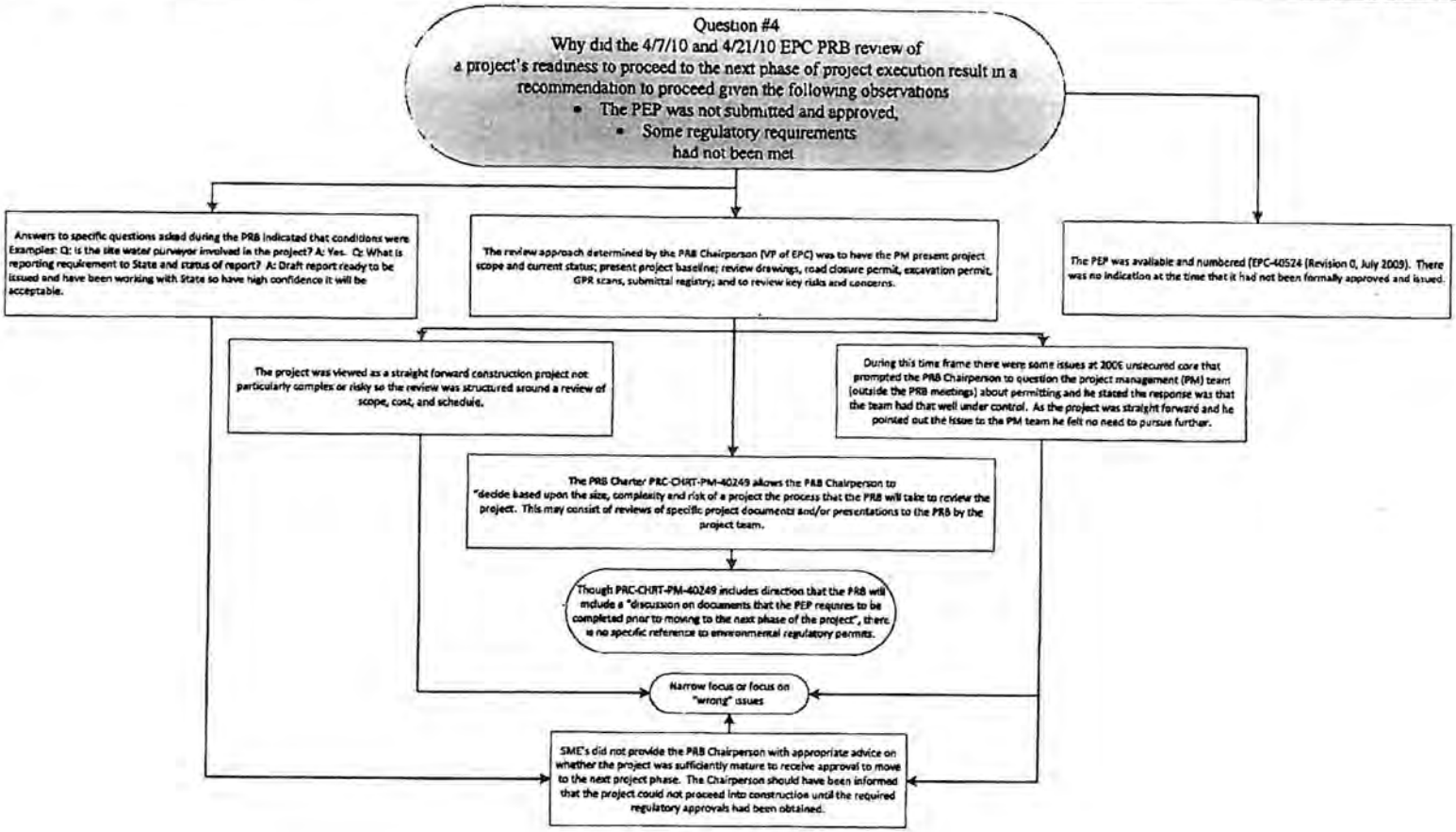
NOTE: The Barrier Analysis provided separate from this report.

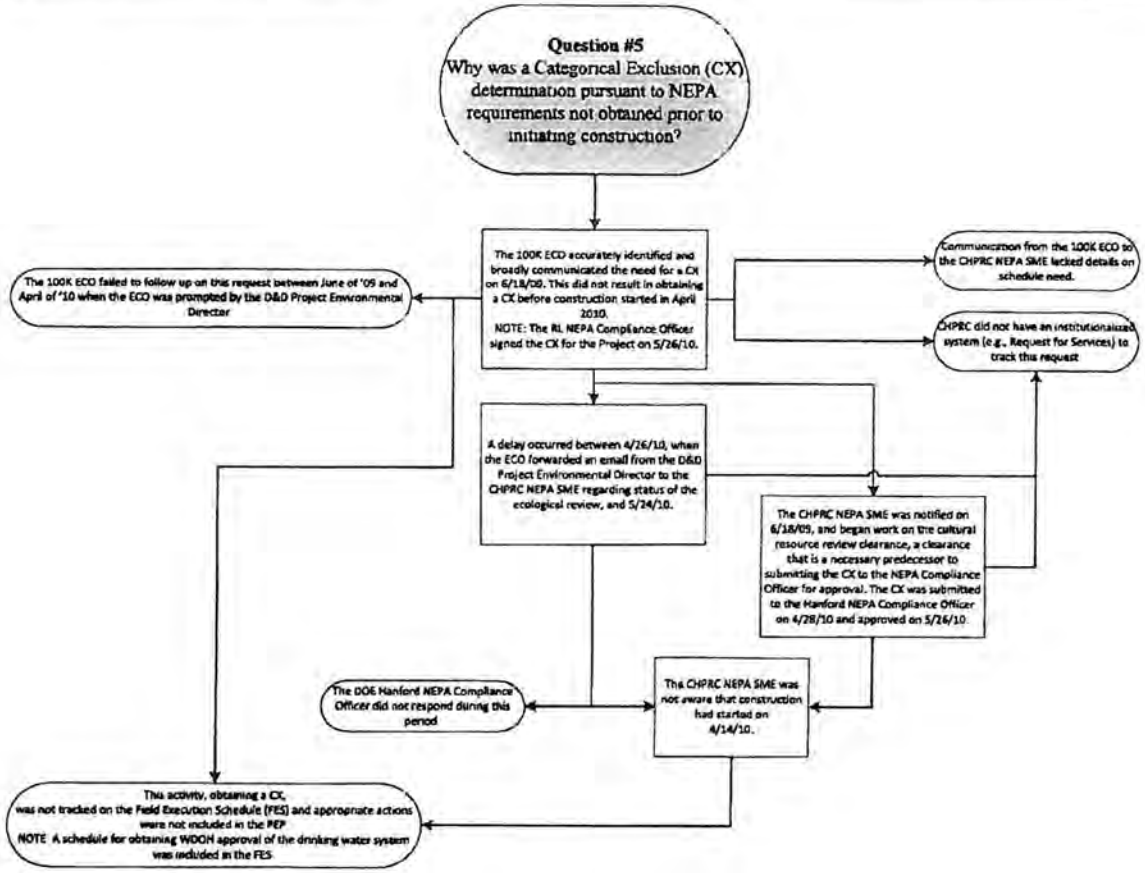
Attachment 4 – Why Analysis

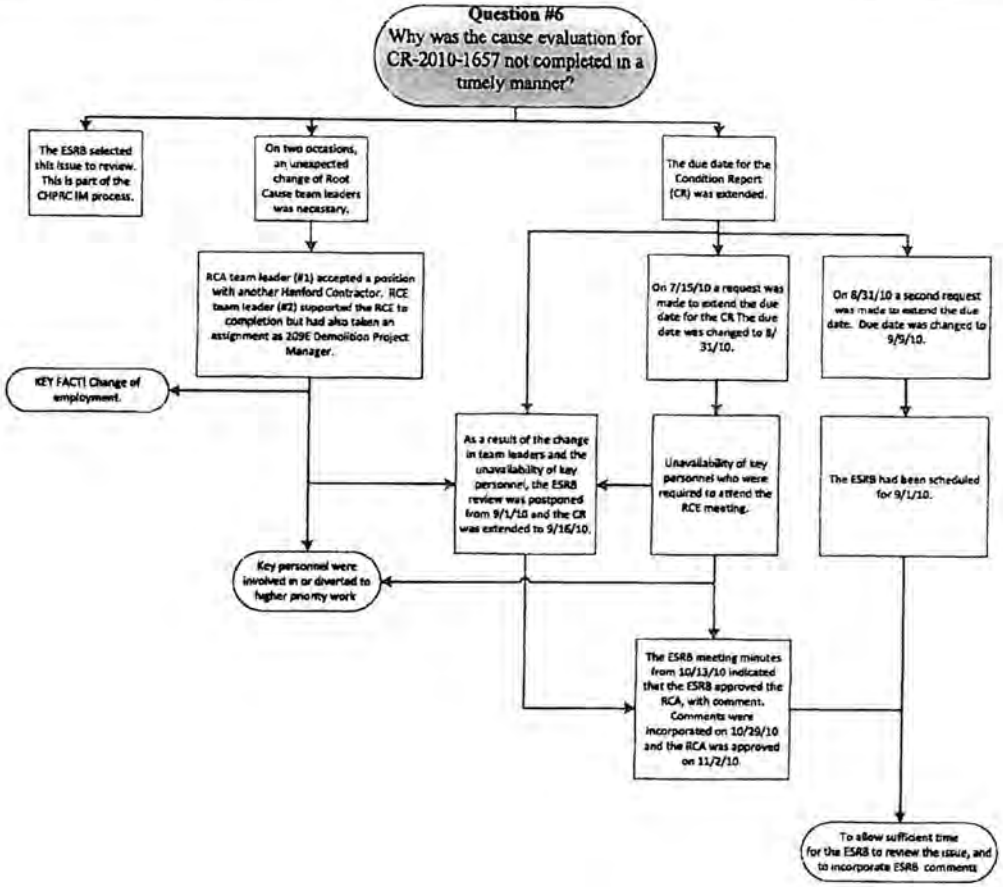


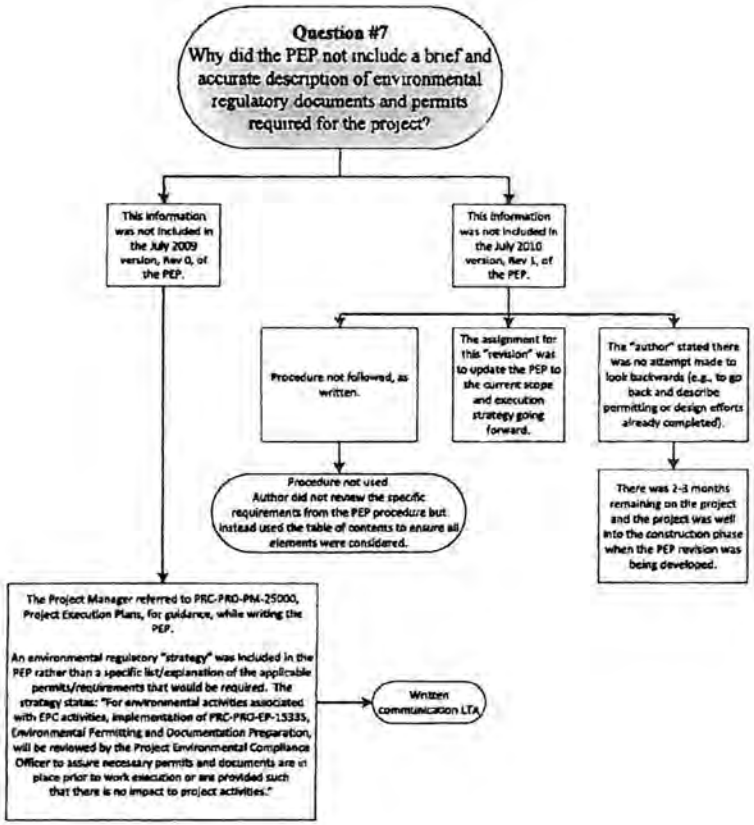

Question #2
Why didn't CHPRC policies and procedures accurately integrate fire protection program requirements into project design and construction?
In some cases, applicable procedures failed to specify when Fire Protection Permits, FPE involvement and FTE approval was required, and failed to establish roles, responsibilities, authorities and accountabilities to ensure that all required actions were performed. CR-2010-1693
CHPRC had not completely and accurately incorporated applicable NFPA fire protection requirements in level 1, 2, and 3 procedures. In some cases, work planning and project procedures have not adequately incorporated fire protection requirements. CR-2010-1693
The CHPRC FPP relied on qualified FPE to ensure compliance with applicable codes and standards. As such, not all applicable code requirements have been fully incorporated into CHPRC procedures. CR-2010-1693 (Root Cause).
CHPRC did not have a documented process (e.g., a checklist) specifying necessary actions to be taken, and when to transition a facility from an unoccupied status to a status to support D4 activities. CR-2010-1693
Interaction between subcontractors and CHPRC was not sufficient to convey expectations of, or monitor performance. Workers were performing repetitive tasks for several years and compliance with published procedures and permits had become relaxed. Compound this trend with limited exposure by the CHPRC Fire Protection Engineer resulted in use of outdated procedures. The understaffing of the FPE position exacerbated this condition. CR-2010-1693
Procedure Content LTA

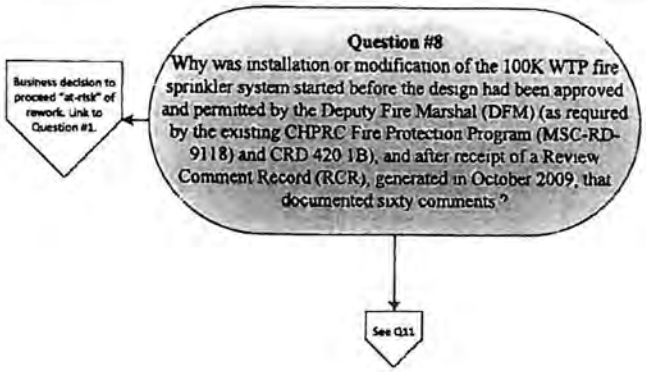

Question #3
Why had the 100K ECO or 100K purveyor not received adequate training on (or understood) the inability of regulator staff to informally waive regulatory requirements or to relieve CHPRC of liability for noncompliance with regulations?
CHPRC training requirements and content did not address the fact that environmental regulator staff members do not possess the authority to informally waive regulatory requirements, or to relieve CHPRC of liability for non-compliance with regulations.
Central Environmental Protection staff, who established training requirements and content, did not anticipate this issue.
The opportunity to train on this subject was not identified
The ECO relied the regulatory experience of project managers who had experience with construction of drinking water systems outside of Hanford.
Because past, non-Hanford events were used as a basis, the problem was underestimated.
From Question 15
Question 3a
Why had the 100K ECO not understood that project NEPA reviews must be done as a single review, and not in segments?
NOTE: Hanford Site NEPA training material does address the prohibition on segmentation of NEPA reviews.
It had been many years since the ECO had taken the NEPA training course
Refresher training not required/ untimely
The scope descriptions for the individual sitewide CXs that were available at the time on the Hanford Intranet did not include the limitations on their use (such as no segmentation of NEPA reviews)
Reference material LTA.


Question #4
Why did the 4/7/10 and 4/21/10 EPC PRB review of a project's readiness to proceed to the next phase of project execution result in a recommendation to proceed given the following observations
• The PEP was not submitted and approved,
• Some regulatory requirements had not been met
Answers to specific questions asked during the PRB indicated that conditions were Examples: Q: Is the site water purveyor involved in the project? A: Yes. Q: What is reporting requirement to State and status of report? A: Draft report ready to be issued and have been working with State so have high confidence it will be acceptable.
The review approach determined by the PRB Chairperson (VP of EPC) was to have the PM present project scope and current status; present project baseline; review drawings, road closure permit, excavation permit, GPR scans, submittal registry; and to review key risks and concerns.
The PEP was available and numbered (EPC-40524 (Revision 0, July 2009). There was no indication at the time that it had not been formally approved and issued.
The project was viewed as a straight forward construction project not particularly complex or risky so the review was structured around a review of scope, cost, and schedule.
During this time frame there were some issues at 200E unsecured core that prompted the PRB Chairperson to question the project management (PM) team (outside the PRB meetings) about permitting and he stated the response was that the team had that well under control. As the project was straight forward and he pointed out the issue to the PM team he felt no need to pursue further.
The PRB Charter PRC-CHRT-PM-40249 allows the PRB Chairperson to "decide based upon the size, complexity and risk of a project the process that the PRB will take to review the project. This may consist of reviews of specific project documents and/or presentations to the PRB by the project team.
Though PRC-CHRT-PM-40249 includes direction that the PRB will include a "discussion on documents that the PEP requires to be completed prior to moving to the next phase of the project", there is no specific reference to environmental regulatory permits.
Narrow focus or focus on "wrong" issues
SME's did not provide the PRB Chairperson with appropriate advice on whether the project was sufficiently mature to receive approval to move to the next project phase. The Chairperson should have been informed that the project could not proceed into construction until the required regulatory approvals had been obtained.


Question #5
Why was a Categorical Exclusion (CX) determination pursuant to NEPA requirements not obtained prior to initiating construction?
The 100K ECO accurately identified and broadly communicated the need for a CX on 6/18/09. This did not result in obtaining a CX before construction started in April 2010.
NOTE: The RL NEPA Compliance Officer signed the CX for the Project on 5/26/10.
Communication from the 100K ECO to the CHPRC NEPA SME lacked details on schedule need.
CHPRC did not have an institutionalized system (e.g., Request for Services) to track this request
The 100K ECO failed to follow up on this request between June of '09 and April of '10 when the ECO was prompted by the D&D Project Environmental Director
A delay occurred between 4/26/10, when the ECO forwarded an email from the D&D Project Environmental Director to the CHPRC NEPA SME regarding status of the ecological review, and 5/24/10.
The CHPRC NEPA SME was notified on 6/18/09, and began work on the cultural resource review clearance, a clearance that is a necessary predecessor to submitting the CX to the NEPA Compliance Officer for approval. The CX was submitted to the Hanford NEPA Compliance Officer on 4/28/10 and approved on 5/26/10.
The DOE Hanford NEPA Compliance Officer did not respond during this period
The CHPRC NEPA SME was not aware that construction had started on 4/14/10.
This activity, obtaining a CX, was not tracked on the Field Execution Schedule (FES) and appropriate actions were not included in the PEP
NOTE: A schedule for obtaining WDOH approval of the drinking water system was included in the FES


Question #6
Why was the cause evaluation for CR-2010-1657 not completed in a timely manner?
The ESRB selected this issue to review. This is part of the CHPRC IM process.
On two occasions, an unexpected change of Root Cause team leaders was necessary.
The due date for the Condition Report (CR) was extended.
RCA team leader (#1) accepted a position with another Hanford Contractor. RCE team leader (#2) supported the RCE to completion but had also taken an assignment as 209E Demolition Project Manager.
On 7/15/10 a request was made to extend the due date for the CR The due date was changed to 8/31/10.
On 8/31/10 a second request was made to extend the due date. Due date was changed to 9/9/10.
KEY FACT! Change of employment.
As a result of the change in team leaders and the unavailability of key personnel, the ESRB review was postponed from 9/1/10 and the CR was extended to 9/16/10.
Unavailability of key personnel who were required to attend the RCE meeting.
The ESRB had been scheduled for 9/1/10.
Key personnel were involved in or diverted to higher priority work
The ESRB meeting minutes from 10/13/10 indicated that the ESRB approved the RCA, with comment. Comments were incorporated on 10/29/10 and the RCA was approved on 11/2/10.
To allow sufficient time for the ESRB to review the issue, and to incorporate ESRB comments


Question #7
Why did the PEP not include a brief and accurate description of environmental regulatory documents and permits required for the project?
This information was not included in the July 2009 version, Rev 0, of the PEP.
This information was not included in the July 2010 version, Rev 1, of the PEP.
Procedure not followed, as written.
The assignment for this "revision" was to update the PEP to the current scope and execution strategy going forward.
The "author" stated there was no attempt made to look backwards (e.g., to go back and describe permitting or design efforts already completed).
Procedure not used
Author did not review the specific requirements from the PEP procedure but instead used the table of contents to ensure all elements were considered.
There was 2-3 months remaining on the project and the project was well into the construction phase when the PEP revision was being developed.
The Project Manager referred to PRC-PRO-PM-25000, Project Execution Plans, for guidance, while writing the PEP.
An environmental regulatory "strategy" was included in the PEP rather than a specific list/explanation of the applicable permits/requirements that would be required. The strategy states: "For environmental activities associated with EPC activities, implementation of PRC-PRO-EP-15335, Environmental Permitting and Documentation Preparation, will be reviewed by the Project Environmental Compliance Officer to assure necessary permits and documents are in place prior to work execution or are provided such that there is no impact to project activities."
Written communication LTA


Business decision to proceed "at-risk" of rework. Link to Question #1.
Question #8
Why was installation or modification of the 100K WTP fire sprinkler system started before the design had been approved and permitted by the Deputy Fire Marshal (DFM) (as required by the existing CHPRC Fire Protection Program (MSC-RD-9118) and CRD 420 1B), and after receipt of a Review Comment Record (RCR), generated in October 2009, that documented sixty comments?
See Q11

Question #9

Why was work allowed to restart (October 2010), following a Stop Work that was issued on 9/28/10 by CHPRC senior management, before the Apparent Cause Evaluation (ACE) was completed (11/10/10) and corrective actions were assigned?

NOTE: The ACE states that "closure of the Corrective Actions outlined in CR-2010-3049 is required to lift the Stop Work and resume work on the Fire Suppression System Upgrade Project."

The Apparent Cause Evaluation (ACE) was not aligned with the selected resolution of the Stop Work.

The Apparent Cause Evaluation focused on identifying causes and "preventive" actions, while the actions taken to resolve the immediate concern were "remedial" actions.

In October 2010, work on individual fire system components was authorized upon completion of required documentation (e.g., Design Change Notice, Design Submittal).

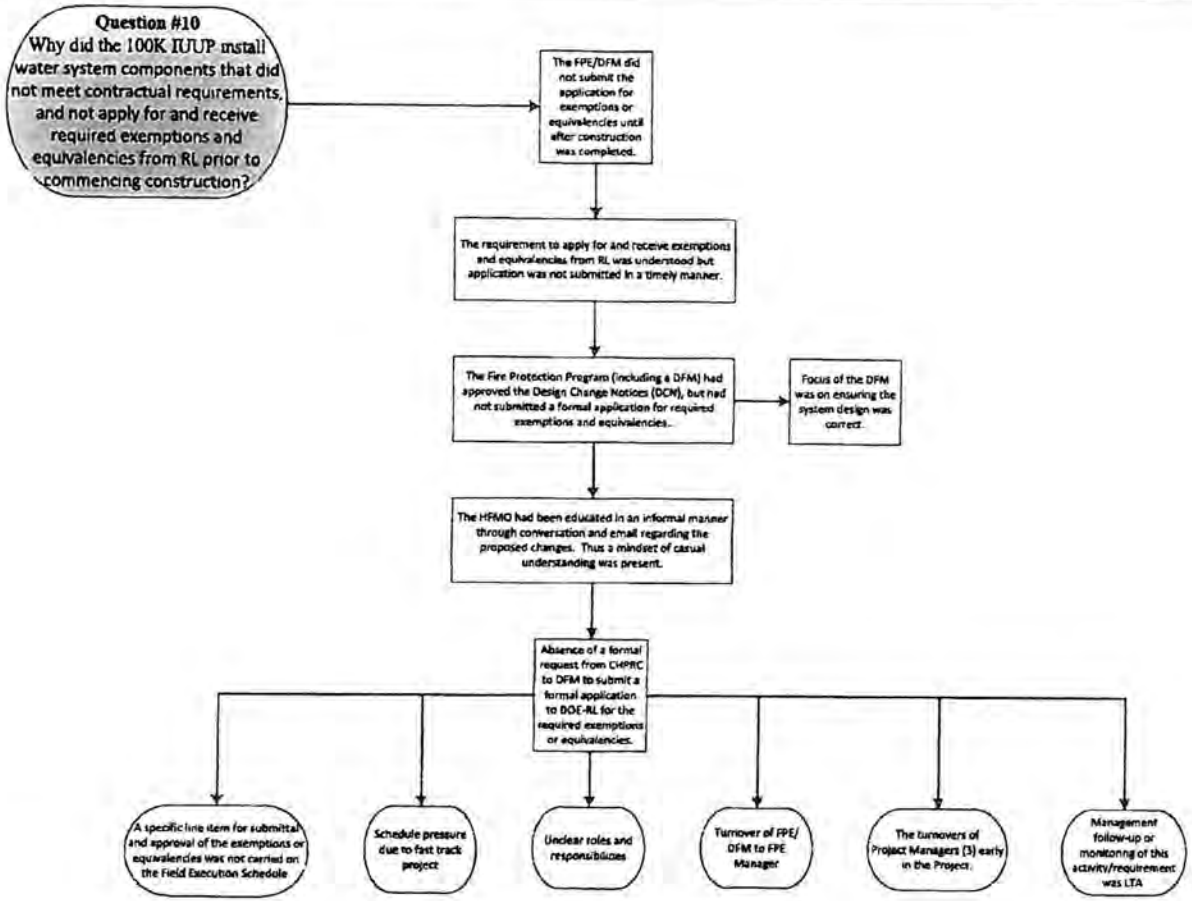
The Stop Work issue identified deficiencies in 6 areas. Project and Senior Management agreed that the method to be used to resolve the Stop Work would be to publish a Design Change Notice (DCN) or Design Submittal for each of the 6 systems. Upon approval for a specific system by an FPE and the HF&MO, work would be allowed to resume (Stop Work partially released) on the referenced group of fire system components.

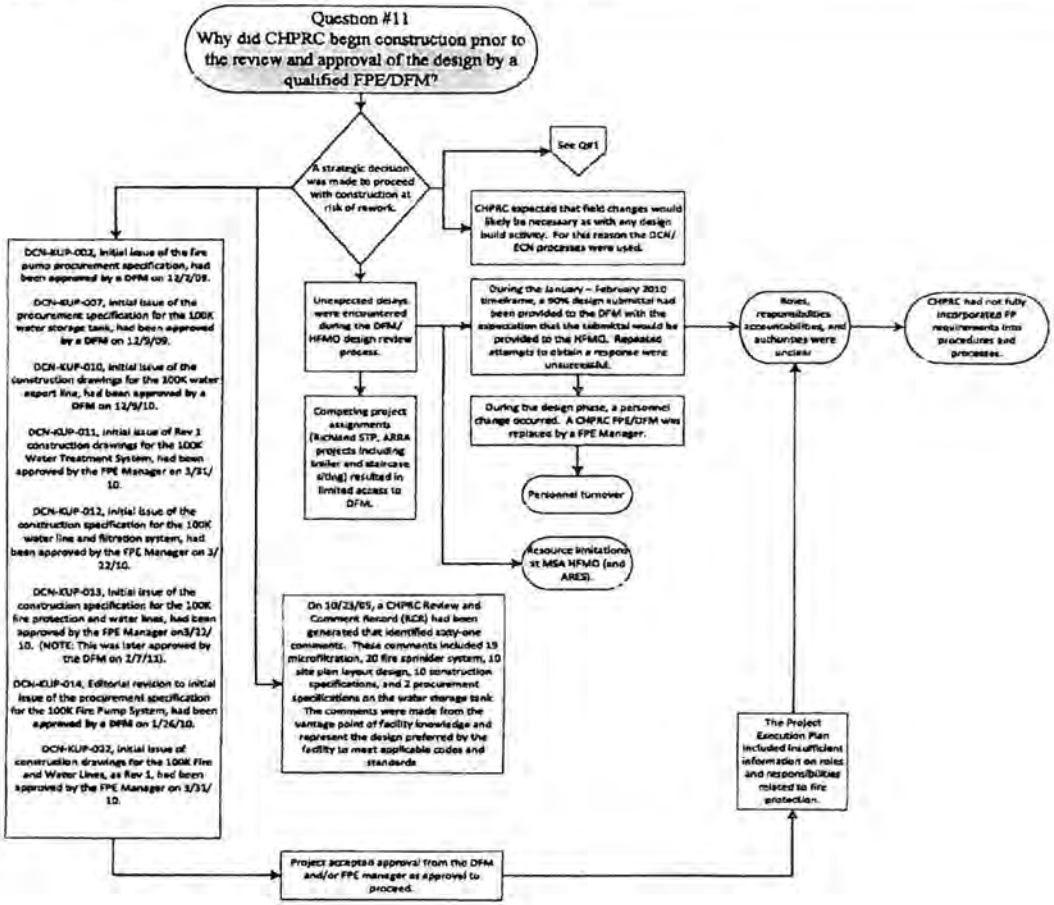
An unconventional method used to document resolution of the Stop Work (e.g., DCN, DS processes)

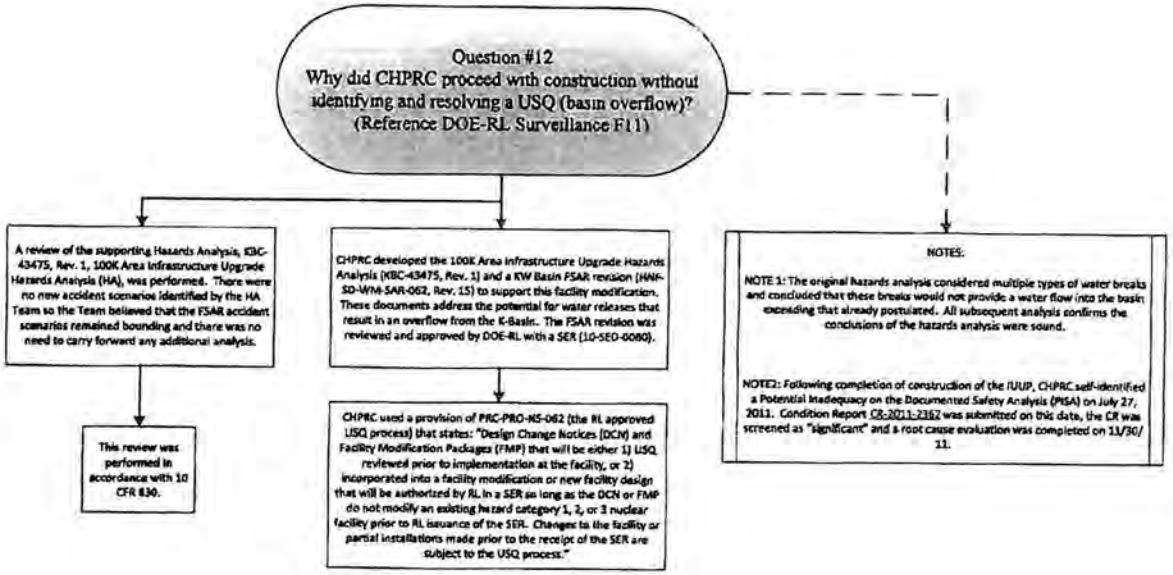
The path forward to resolve the Stop Work was documented in compliance with DOE-0343, Stop Work, which states: "Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented in accordance with Contractor procedures (logbook or other established method of reporting/tracking/communicating safety issues and corrective action management). Emphasis added.

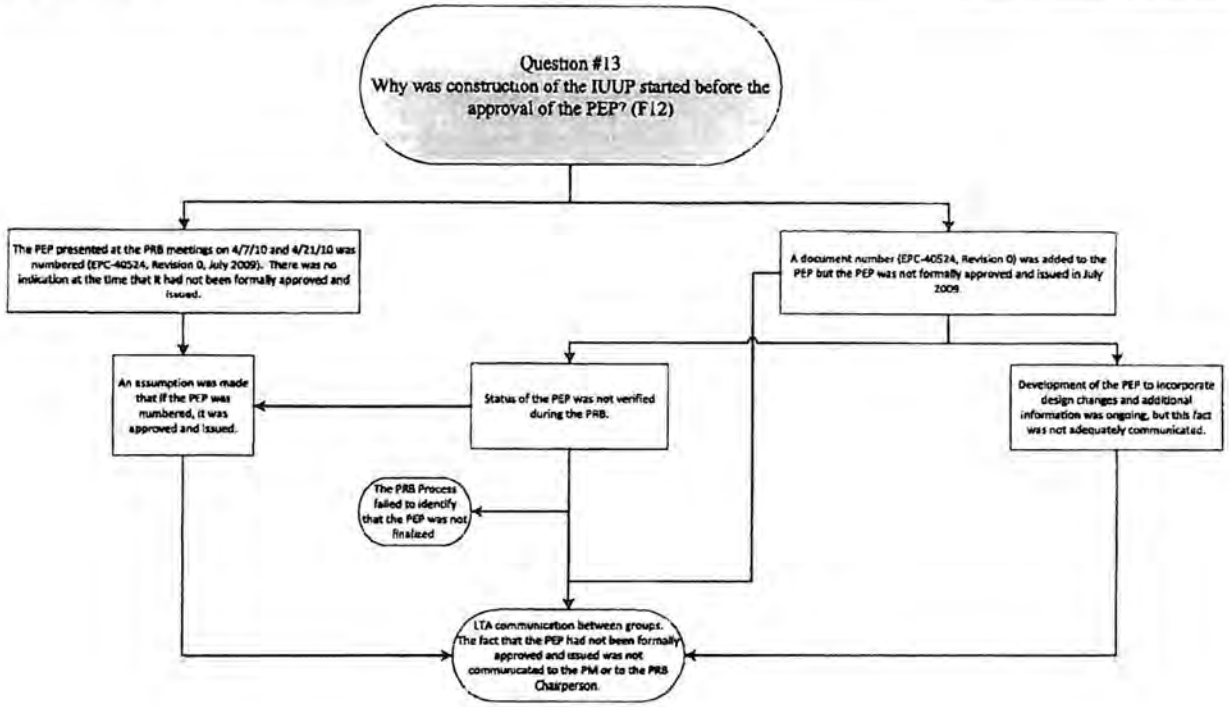
The path forward to resolve the Stop Work was not communicated to the trained Cause Evaluator who would perform the Apparent Cause Evaluation. This resulted in the "remedial" actions not being captured on the ORRS Condition Report, and contributed to an inaccurate statement in the cause evaluation (e.g., that all corrective actions listed in the ACE must be completed before work related to the Stop Work could resume).

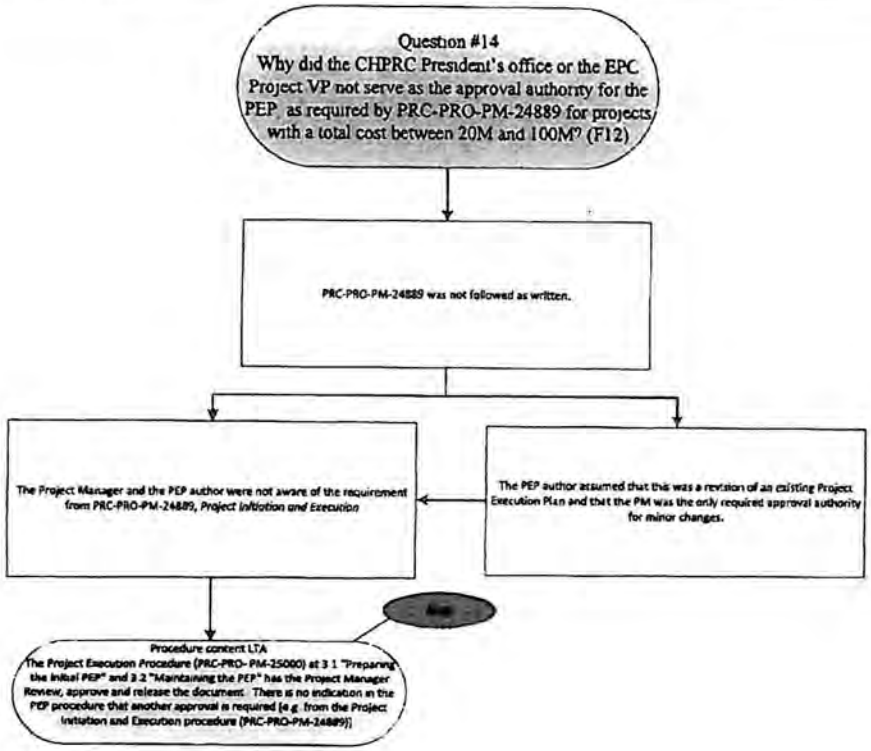
Review of the ACE by the PM(3) prior to approval was LTA. This constitutes a missed opportunity as the PM was aware of the agreement of the path forward to resolve the Stop Work, but did not recognize the inconsistency in the ACE.

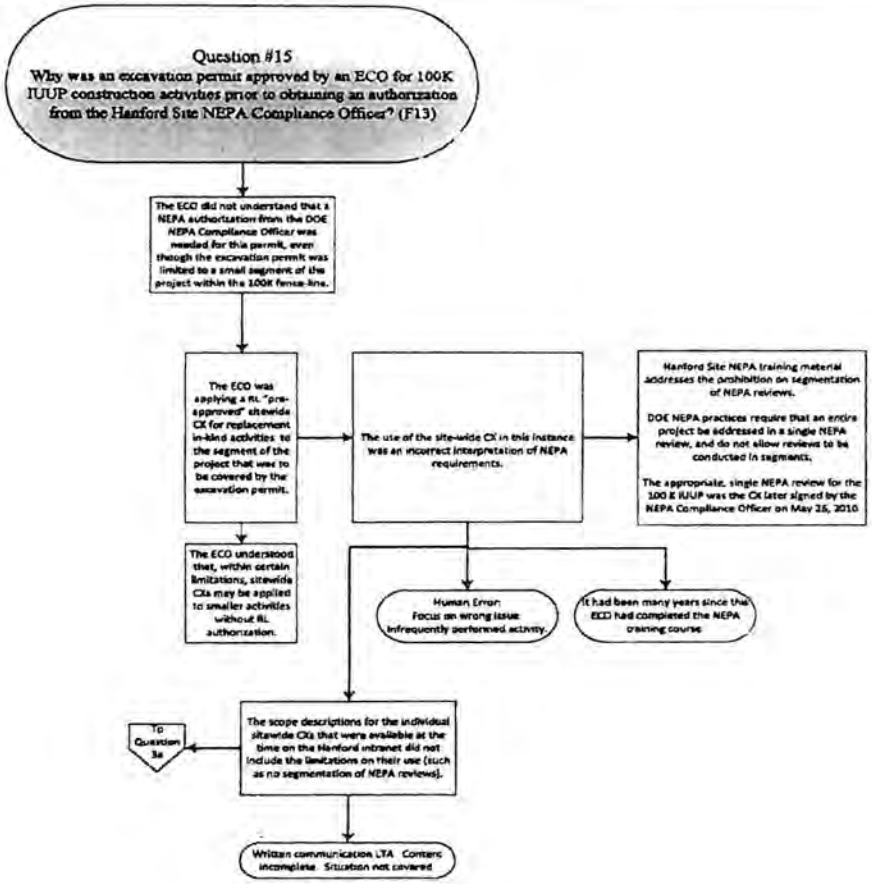

Question #10
Why did the 100K IUUP install water system components that did not meet contractual requirements, and not apply for and receive required exemptions and equivalencies from RL prior to commencing construction?
The FPE/DFM did not submit the application for exemptions or equivalencies until after construction was completed.
The requirement to apply for and receive exemptions and equivalencies from RL was understood but application was not submitted in a timely manner.
The Fire Protection Program (including a DFM) had approved the Design Change Notices (DCN), but had not submitted a formal application for required exemptions and equivalencies.
Focus of the DFM was on ensuring the system design was correct.
The HFMO had been educated in an informal manner through conversation and email regarding the proposed changes. Thus a mindset of casual understanding was present.
Absence of a formal request from CHPRC to DFM to submit a formal application to DOE-RL for the required exemptions or equivalencies.
A specific line item for submittal and approval of the exemptions or equivalencies was not carried on the Field Execution Schedule
Schedule pressure due to fast track project
Unclear roles and responsibilities
Turnover of FPE/ DFM to FPE Manager
The turnovers of Project Managers (3) early in the Project.
Management follow-up or monitoring of this activity/requirement was LTA


Question #11
Why did CHPRC begin construction prior to the review and approval of the design by a qualified FPE/DFM?
A strategic decision was made to proceed with construction at risk of rework.
See QF1
CHPRC expected that field changes would likely be necessary as with any design build activity. For this reason the DCN/ECN processes were used.
DCN-KUP-002, initial issue of the fire pump procurement specification, had been approved by a DFM on 12/2/09.
DCN-KUP-007, initial issue of the procurement specification for the 100K water storage tank, had been approved by a DFM on 12/9/09.
DCN-KUP-010, initial issue of the construction drawings for the 100K water export line, had been approved by a DFM on 12/9/10.
DCN-KUP-011, initial issue of Rev 1 construction drawings for the 100K Water Treatment System, had been approved by the FPE Manager on 3/31/10.
DCN-KUP-012, initial issue of the construction specification for the 100K water line and filtration system, had been approved by the FPE Manager on 3/22/10.
DCN-KUP-013, initial issue of the construction specification for the 100K fire protection and water lines, had been approved by the FPE Manager on3/22/10. (NOTE: This was later approved by the DFM on 2/7/11).
DCN-KUP-014, Editorial revision to initial issue of the procurement specification for the 100K Fire Pump System, had been approved by a DFM on 1/26/10.
DCN-KUP-032, initial issue of construction drawings for the 100K Fire and Water Lines, as Rev 1, had been approved by the FPE Manager on 3/31/10.
Unexpected delays were encountered during the DFM/HFMO design review process.
Competing project assignments (Richland STP, ARRA projects including trailer and staircase siting) resulted in limited access to DFM.
During the January – February 2010 timeframe, a 90% design submittal had been provided to the DFM with the expectation that the submittal would be provided to the HFMO. Repeated attempts to obtain a response were unsuccessful.
During the design phase, a personnel change occurred. A CHPRC FPE/DFM was replaced by a FPE Manager.
Personnel turnover
Resource limitations at MSA HFMO (and ARES).
Roles, responsibilities accountabilities, and authorities were unclear
CHPRC had not fully incorporated FP requirements into procedures and processes.
On 10/23/09, a CHPRC Review and Comment Record (RCR) had been generated that identified sixty-one comments. These comments included 19 microfiltration, 20 fire sprinkler system, 10 site plan layout design, 10 construction specifications, and 2 procurement specifications on the water storage tank. The comments were made from the vantage point of facility knowledge and represent the design preferred by the facility to meet applicable codes and standards
The Project Execution Plan included insufficient information on roles and responsibilities related to fire protection.
Project accepted approval from the DFM and/or FPE manager as approval to proceed.


Question #12
Why did CHPRC proceed with construction without identifying and resolving a USQ (basin overflow)? (Reference DOE-RL Surveillance F11)
A review of the supporting Hazards Analysis, KBC-43475, Rev. 1, 100K Area Infrastructure Upgrade Hazards Analysis (HA), was performed. There were no new accident scenarios identified by the HA Team so the Team believed that the FSAR accident scenarios remained bounding and there was no need to carry forward any additional analysis.
This review was performed in accordance with 10 CFR 830.
CHPRC developed the 100K Area Infrastructure Upgrade Hazards Analysis (KBC-43475, Rev. 1) and a KW Basin FSAR revision (HNF-SD-WM-SAR-062, Rev. 15) to support this facility modification. These documents address the potential for water releases that result in an overflow from the K-Basin. The FSAR revision was reviewed and approved by DOE-RL with a SER (10-SEO-0080).
CHPRC used a provision of PRC-PRO-NS-062 (the RL approved USQ process) that states: "Design Change Notices (DCN) and Facility Modification Packages (FMP) that will be either 1) USQ reviewed prior to implementation at the facility, or 2) incorporated into a facility modification or new facility design that will be authorized by RL in a SER as long as the DCN or FMP do not modify an existing hazard category 1, 2, or 3 nuclear facility prior to RL issuance of the SER. Changes to the facility or partial installations made prior to the receipt of the SER are subject to the USQ process."
NOTES:
NOTE 1: The original hazards analysis considered multiple types of water breaks and concluded that these breaks would not provide a water flow into the basin exceeding that already postulated. All subsequent analysis confirms the conclusions of the hazards analysis were sound.
NOTE2: Following completion of construction of the IUUP, CHPRC self-identified a Potential Inadequacy on the Documented Safety Analysis (PISA) on July 27, 2011. Condition Report CR-2011-2367 was submitted on this date, the CR was screened as "significant" and a root cause evaluation was completed on 11/30/11.


Question #13
Why was construction of the IUUP started before the approval of the PEP? (F12)
The PEP presented at the PRB meetings on 4/7/10 and 4/21/10 was numbered (EPC-40524, Revision 0, July 2009). There was no indication at the time that it had not been formally approved and issued.
A document number (EPC-40524, Revision 0) was added to the PEP but the PEP was not formally approved and issued in July 2009.
An assumption was made that if the PEP was numbered, it was approved and issued.
Status of the PEP was not verified during the PRB.
Development of the PEP to incorporate design changes and additional information was ongoing, but this fact was not adequately communicated.
The PRB Process failed to identify that the PEP was not finalized
LTA communication between groups. The fact that the PEP had not been formally approved and issued was not communicated to the PM or to the PRB Chairperson.


Question #14
Why did the CHPRC President's office or the EPC Project VP not serve as the approval authority for the PEP as required by PRC-PRO-PM-24889 for projects with a total cost between 20M and 100M? (F12)
PRC-PRO-PM-24889 was not followed as written.
The Project Manager and the PEP author were not aware of the requirement from PRC-PRO-PM-24889, Project Initiation and Execution
The PEP author assumed that this was a revision of an existing Project Execution Plan and that the PM was the only required approval authority for minor changes.
Procedure content LTA
The Project Execution Procedure (PRC-PRO- PM-25000) at 3 1 "Preparing the Initial PEP" and 3 2 "Maintaining the PEP" has the Project Manager Review, approve and release the document. There is no indication in the PEP procedure that another approval is required [e g from the Project Initiation and Execution procedure (PRC-PRO-PM-24889)]


Question #15
Why was an excavation permit approved by an ECO for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer? (F13)
The ECO did not understand that a NEPA authorization from the DOE NEPA Compliance Officer was needed for this permit, even though the excavation permit was limited to a small segment of the project within the 100K fence-line.
The ECO was applying a RL "pre-approved" sitewide CX for replacement in-kind activities to the segment of the project that was to be covered by the excavation permit.
The use of the site-wide CX in this instance was an incorrect interpretation of NEPA requirements.
Hanford Site NEPA training material addresses the prohibition on segmentation of NEPA reviews.
DOE NEPA practices require that an entire project be addressed in a single NEPA review, and do not allow reviews to be conducted in segments.
The appropriate, single NEPA review for the 100 K IUUP was the CX later signed by the NEPA Compliance Officer on May 26, 2010
The ECO understood that, within certain limitations, sitewide CXs may be applied to smaller activities without RL authorization.
Human Error: Focus on wrong issue: Infrequently performed activity.
It had been many years since the ECO had completed the NEPA training course
The scope descriptions for the individual sitewide CXs that were available at the time on the Hanford intranet did not include the limitations on their use (such as no segmentation of NEPA reviews).
To Question 3a
Written communication LTA Content incomplete Situation not covered

Question #16
Why did CHPRC behave as if an active MOU between CHPRC and the Hanford Fire Marshal's Office was not in effect?
(Reference: DOE-RL Surveillance F14)

It is surmised that the CHPRC staff believed the MOU could be cancelled as the roles and responsibilities were in place in revised procedures within both the MSA and the CHPRC systems and behaved as if it were no longer in effect.

The MSA 'blue' sheeted the subject Memorandum Of Understanding as part of their contract transition.

On October 27, 2009, DOE provided a signed contract modification 065 for CHPRC use. The contract modification 065 changed CRD O 420.1B (Supp Rev 1) to CRD O 420.1B (Supp Rev 4). There was an email dated, September 9, 2009, to the CHPRC VP ESH stating that "Now that the MSA is on-board and with....the 'endorsed' fire protection procedures in-place....the interface agreement is no longer necessary..."

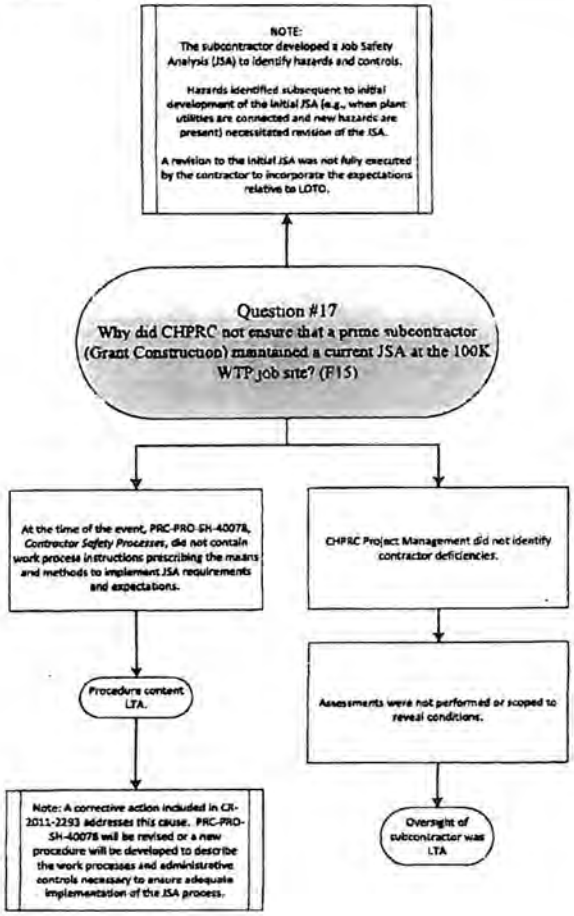
However, the CRD issued in 2009 continued to require an agreement or Memorandum of Understanding. A new interface agreement between CHPRC and MSA was issued in December 2011.

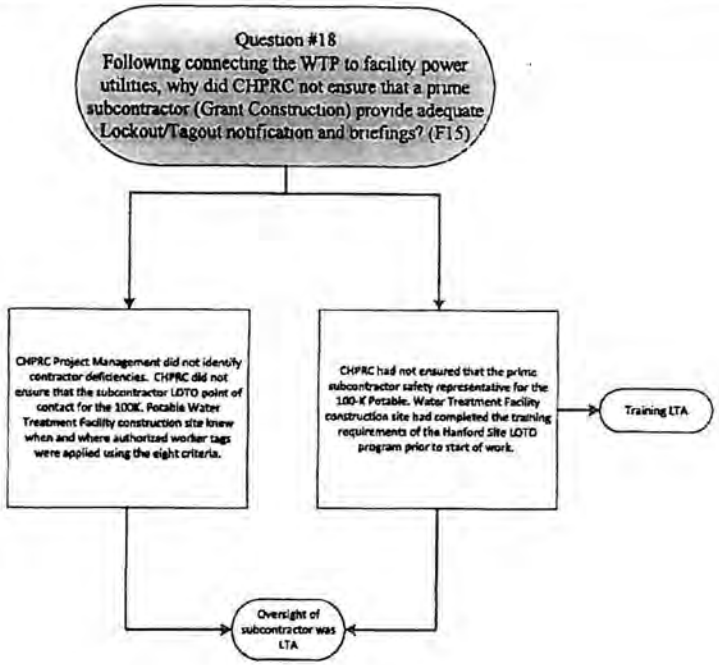
NOTE:
The CHPRC management team was not aware that MSA had allowed their version to expire at the end of the blue sheet time duration.

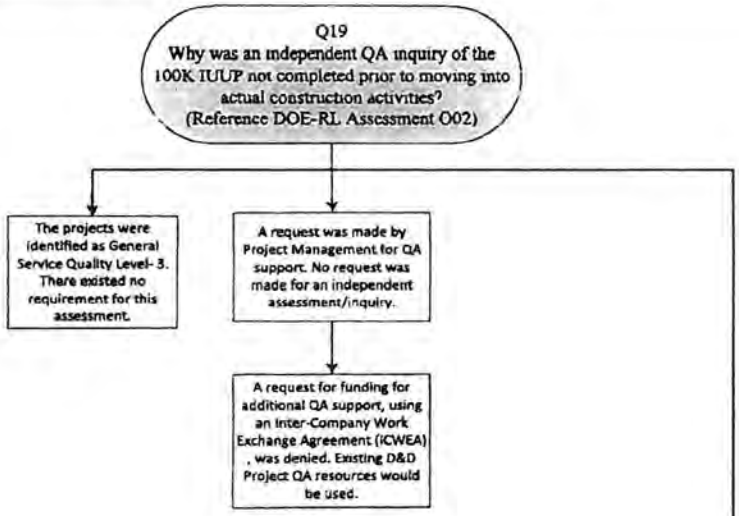
NOTE:
The "Memorandum Of Understanding", Rev. 0, between Hanford Fire Marshal's office and other contractors with fire protection engineers designated as deputy fire marshals (CHPRC-0800081) was fully executed September 24, 2008.

CHPRC formally maintained the MOU as an active (not cancelled) document within the CHPRC system until December 5, 2011.

The MOU was cancelled on December 5, 2011 via letter MSA-1105736 from Dan Sours to Mr. Hansen. Administrative Interface Agreement (HNF-51041 Rev. 0) for Fire Protection Flow-Down of Roles, Responsibilities, Authorities, and Enforcement signing was completed December 5, 2011.

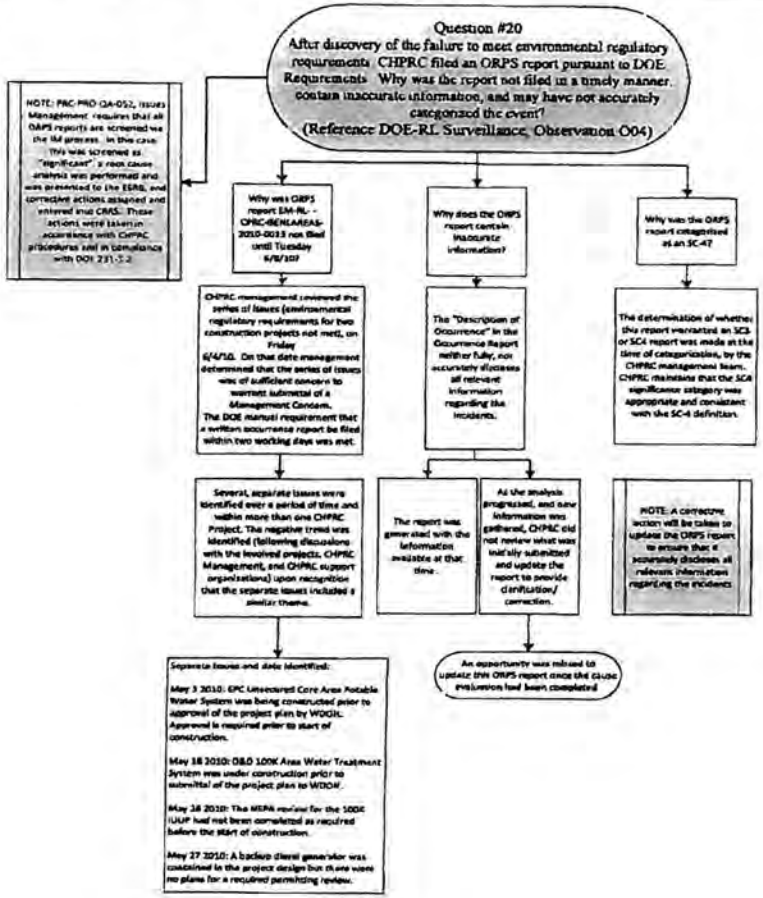

NOTE:
The subcontractor developed a Job Safety Analysis (JSA) to identify hazards and controls.
Hazards identified subsequent to initial development of the initial JSA (e.g., when plant utilities are connected and new hazards are present) necessitated revision of the JSA.
A revision to the initial JSA was not fully executed by the contractor to incorporate the expectations relative to LOTO.
Question #17
Why did CHPRC not ensure that a prime subcontractor (Grant Construction) maintained a current JSA at the 100K WTP job site? (F15)
At the time of the event, PRC-PRO-SH-40078, Contractor Safety Processes, did not contain work process instructions prescribing the means and methods to implement JSA requirements and expectations.
Procedure content LTA.
Note: A corrective action included in CR-2011-2293 addresses this cause. PRC-PRO-SH-40078 will be revised or a new procedure will be developed to describe the work processes and administrative controls necessary to ensure adequate implementation of the JSA process.
CHPRC Project Management did not identify contractor deficiencies.
Assessments were not performed or scoped to reveal conditions.
Oversight of subcontractor was LTA

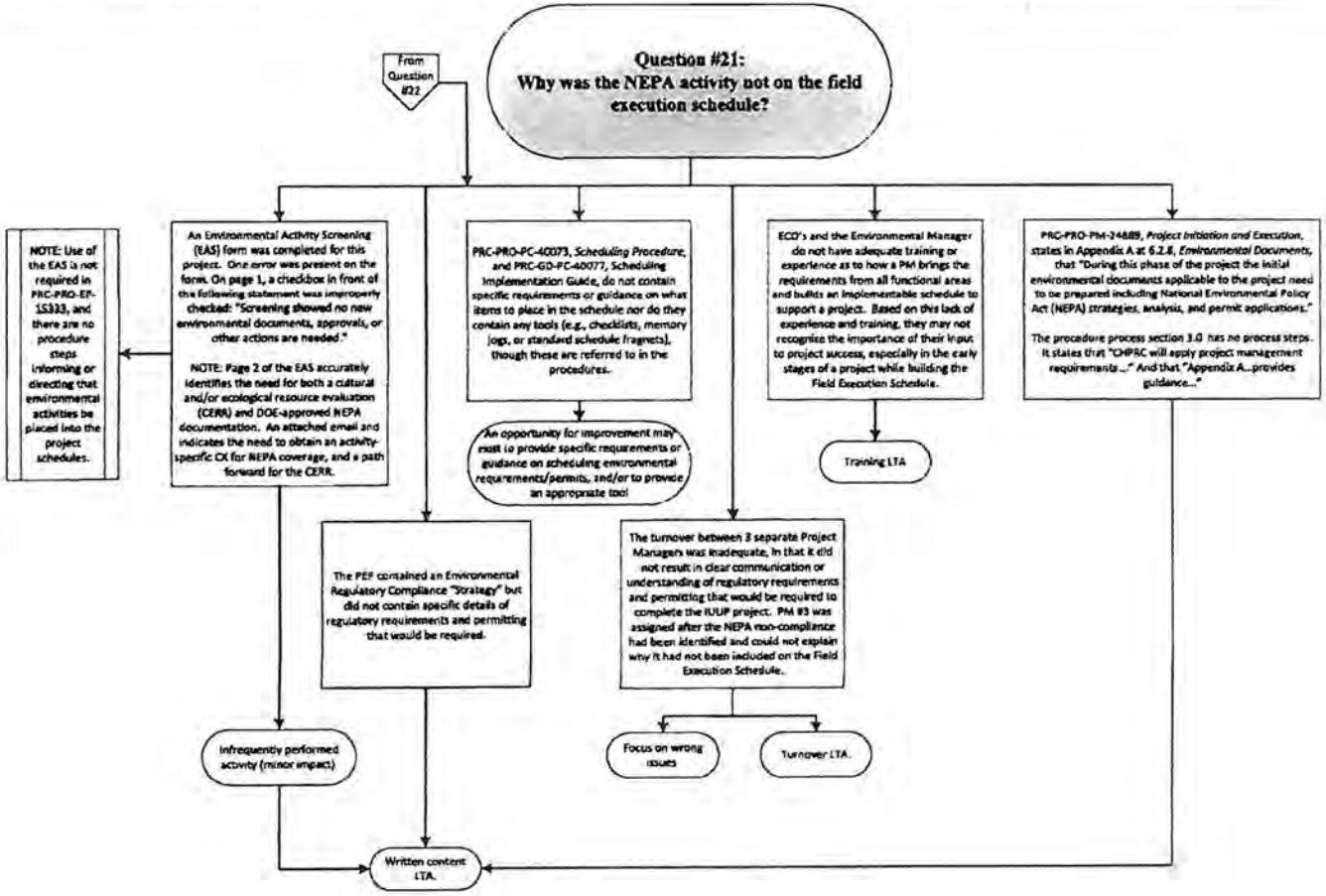

Question #18
Following connecting the WTP to facility power utilities, why did CHPRC not ensure that a prime subcontractor (Grant Construction) provide adequate Lockout/Tagout notification and briefings? (F15)
CHPRC Project Management did not identify contractor deficiencies. CHPRC did not ensure that the subcontractor LOTO point of contact for the 100K Potable Water Treatment Facility construction site knew when and where authorized worker tags were applied using the eight criteria.
CHPRC had not ensured that the prime subcontractor safety representative for the 100-K Potable. Water Treatment Facility construction site had completed the training requirements of the Hanford Site LOTO program prior to start of work.
Training LTA
Oversight of subcontractor was LTA

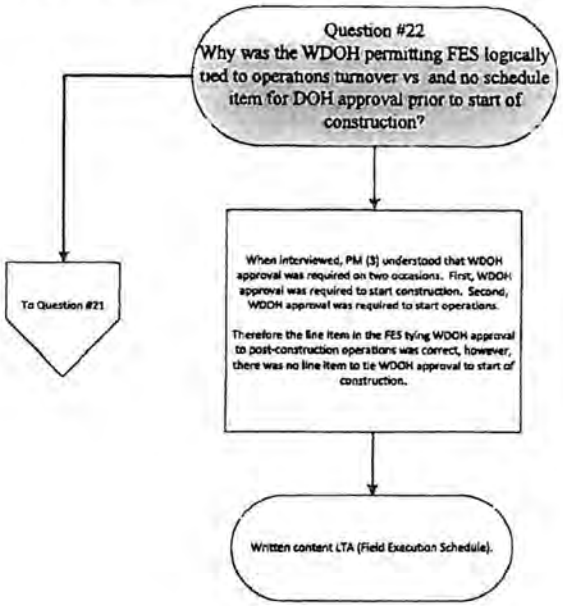


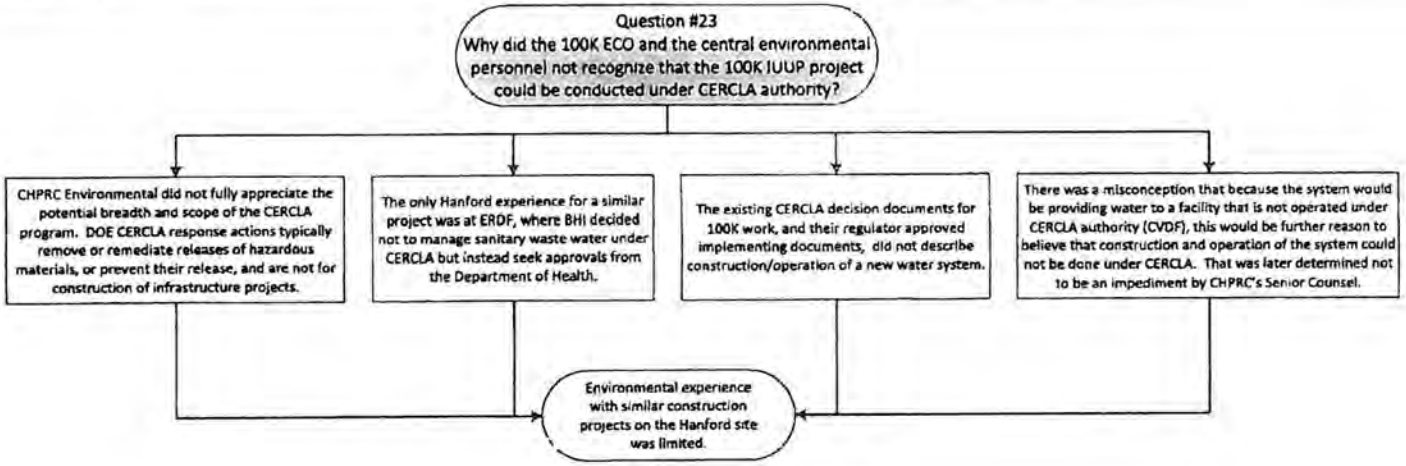
NOTE: Quality Assurance performed activities typical of a QL-3 project. Examples of coverage included the following:

- The SOW's were reviewed, commented on and approved by Quality Assurance.
- Submittals from the vendors, as identified by Engineering for QA review, were reviewed commented on and approved by Quality Assurance personnel.
- For major equipment identified by engineering as important for operations, Quality Assurance and Engineering developed inspection plans to be used by Acquisition Verification Services (AVS) personnel at the vendor's facilities. These plans included witnessing of testing and record reviews. Additionally the equipment was receipt inspected on arrival at Hanford.
- Quality Assurance aided in the development of CHPRC generated test plans and approved the same. QA witnessed testing of components and systems on a random basis. The results of the inspections and observations were documented either in a surveillance or in the test documentation. These records as well as AVS receiving reports and trip reports are included in project files.


Question #20
After discovery of the failure to meet environmental regulatory requirements CHPRC filed an ORPS report pursuant to DOE Requirements. Why was the report not filed in a timely manner, contain inaccurate information, and may have not accurately categorized the event?
(Reference DOE-RL Surveillance, Observation 004)
NOTE: PRC-PRO-QA-052, Issues Management requires that all ORPS reports are screened via the IM process. In the case this was screened as "significant", a root cause analysis was performed and was presented to the ESRB, and corrective actions assigned and entered into CAMS. These actions were taken in accordance with CHPRC procedures and in compliance with DOE 231.1-2
Why was ORPS report EM-RL--CHRC-BENLAREAS-2010-0013 not filed until Tuesday 6/8/10?
Why does the ORPS report contain inaccurate information?
Why was the ORPS report categorized as an SC-4?
CHPRC management reviewed the series of issues (environmental regulatory requirements for two construction projects not met), on Friday 6/4/10. On that date management determined that the series of issues was of sufficient concern to warrant submittal of a Management Concern. The DOE manual requirement that a written occurrence report be filed within two working days was met.
The "Description of Occurrence" in the Occurrence Report neither fully, nor accurately discusses all relevant information regarding the incidents.
The determination of whether this report warranted an SC3 or SC4 report was made at the time of categorization, by the CHPRC management team. CHPRC maintains that the SC4 significance category was appropriate and consistent with the SC-4 definition.
Several, separate issues were identified over a period of time and within more than one CHPRC Project. The negative trend was identified (following discussions with the involved projects, CHPRC Management, and CHPRC support organizations) upon recognition that the separate issues included a similar theme.
The report was generated with the information available at that time.
As the analysis progressed, and new information was gathered, CHPRC did not review what was initially submitted and update the report to provide clarification/ correction.
NOTE: A corrective action will be taken to update the ORPS report to ensure that it accurately discloses all relevant information regarding the incidents
Separate issues and date identified:
May 3 2010: EPC Unsecured Core Area Potable Water System was being constructed prior to approval of the project plan by WDOH. Approval is required prior to start of construction.
May 18 2010: O&D 100K Area Water Treatment System was under construction prior to submittal of the project plan to WDOH.
May 18 2010: The NEPA review for the 100K IUUP had not been completed as required before the start of construction.
May 27 2010: A backup diesel generator was constructed in the project design but there were no plans for a required permitting review.
An opportunity was missed to update the ORPS report once the cause evaluation had been completed

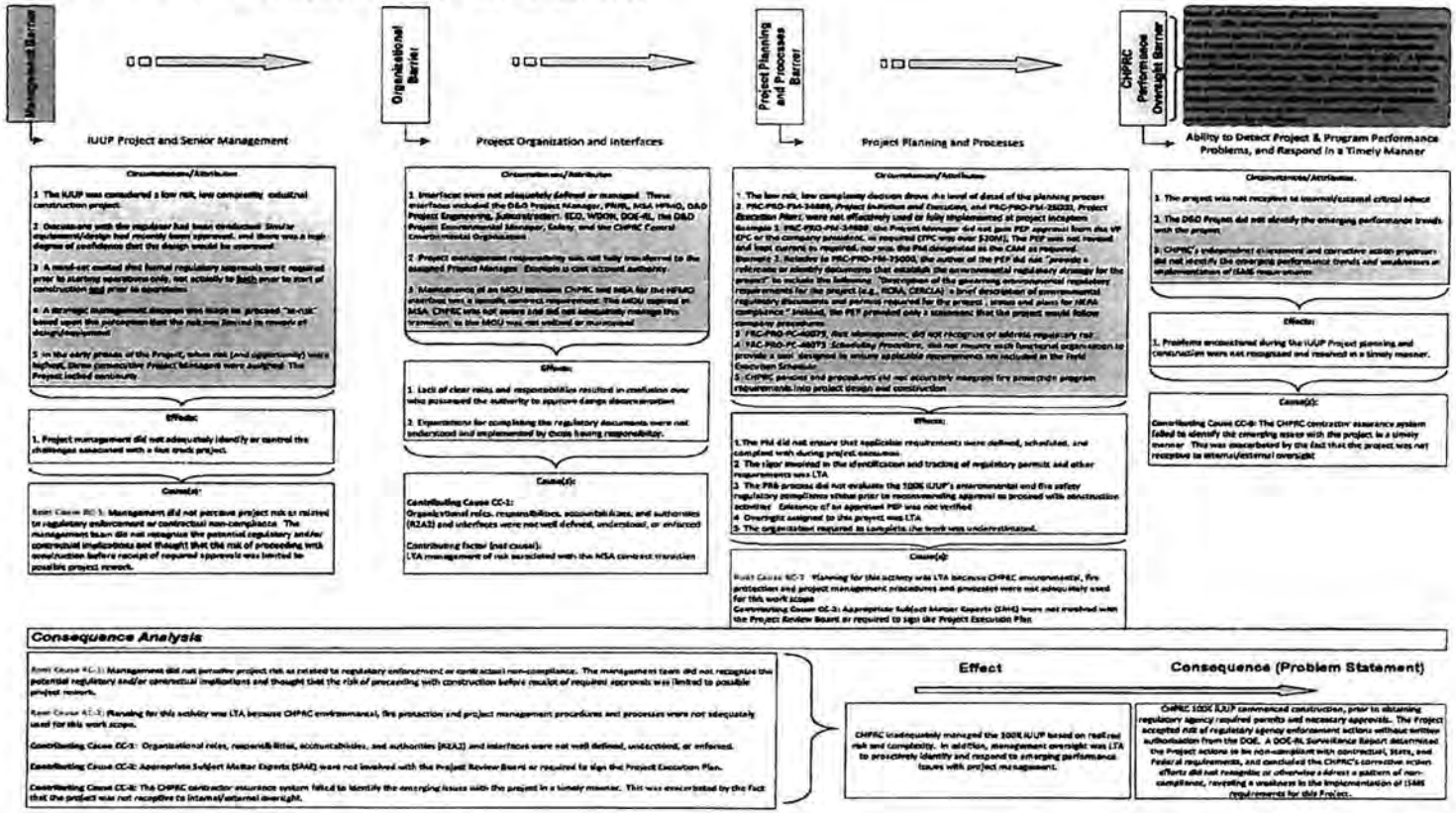

From Question #22
Question #21:
Why was the NEPA activity not on the field execution schedule?
NOTE: Use of the EAS is not required in PRC-PRO-EP-15333, and there are no procedure steps informing or directing that environmental activities be placed into the project schedules.
An Environmental Activity Screening (EAS) form was completed for this project. One error was present on the form. On page 1, a checkbox in front of the following statement was improperly checked: "Screening showed no new environmental documents, approvals, or other actions are needed."
NOTE: Page 2 of the EAS accurately identifies the need for both a cultural and/or ecological resource evaluation (CERR) and DOE-approved NEPA documentation. An attached email and indicates the need to obtain an activity-specific CX for NEPA coverage, and a path forward for the CERR.
PRC-PRO-PC-40073, Scheduling Procedure, and PRC-GD-PC-40077, Scheduling Implementation Guide, do not contain specific requirements or guidance on what items to place in the schedule nor do they contain any tools (e.g., checklists, memory jogs, or standard schedule fragnets), though these are referred to in the procedures.
An opportunity for improvement may exist to provide specific requirements or guidance on scheduling environmental requirements/permits, and/or to provide an appropriate tool
ECO's and the Environmental Manager do not have adequate training or experience as to how a PM brings the requirements from all functional areas and builds an implementable schedule to support a project. Based on this lack of experience and training, they may not recognize the importance of their input to project success, especially in the early stages of a project while building the Field Execution Schedule.
Training LTA
PRC-PRO-PM-24889, Project Initiation and Execution, states in Appendix A at 6.2.8, Environmental Documents, that "During this phase of the project the initial environmental documents applicable to the project need to be prepared including National Environmental Policy Act (NEPA) strategies, analysis, and permit applications."
The procedure process section 3.0 has no process steps. It states that "CHPRC will apply project management requirements ..." And that "Appendix A...provides guidance..."
The PEF contained an Environmental Regulatory Compliance "Strategy" but did not contain specific details of regulatory requirements and permitting that would be required.
The turnover between 3 separate Project Managers was inadequate, in that it did not result in clear communication or understanding of regulatory requirements and permitting that would be required to complete the IUUP project. PM #3 was assigned after the NEPA non-compliance had been identified and could not explain why it had not been included on the Field Execution Schedule.
Infrequently performed activity (minor impact)
Focus on wrong issues
Turnover LTA.
Written content LTA.


Question #22
Why was the WDOH permitting FES logically tied to operations turnover vs and no schedule item for DOH approval prior to start of construction?
To Question #21
When interviewed, PM (3) understood that WDOH approval was required on two occasions. First, WDOH approval was required to start construction. Second, WDOH approval was required to start operations.
Therefore the line item in the FES tying WDOH approval to post-construction operations was correct, however, there was no line item to tie WDOH approval to start of construction.
Written content LTA (Field Execution Schedule).


Question #23
Why did the 100K ECO and the central environmental personnel not recognize that the 100K IUUP project could be conducted under CERCLA authority?
CHPRC Environmental did not fully appreciate the potential breadth and scope of the CERCLA program. DOE CERCLA response actions typically remove or remediate releases of hazardous materials, or prevent their release, and are not for construction of infrastructure projects.
The only Hanford experience for a similar project was at ERDF, where BHI decided not to manage sanitary waste water under CERCLA but instead seek approvals from the Department of Health.
The existing CERCLA decision documents for 100K work, and their regulator approved implementing documents, did not describe construction/operation of a new water system.
There was a misconception that because the system would be providing water to a facility that is not operated under CERCLA authority (CVDF), this would be further reason to believe that construction and operation of the system could not be done under CERCLA. That was later determined not to be an impediment by CHPRC's Senior Counsel.
Environmental experience with similar construction projects on the Hanford site was limited.

Attachment 5 – CHPRC 100K IUUP Barrier Analysis Summary

CHPRC 100K IUUP Barrier Analysis Summary (Post-ESRB, Rev 0)



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9.0 ATTACHMENTS

Attachment 1 – Corrective Action Plan (CAP) – PART 1 – Actions Taken by CHPRC Prior to Transmittal of the RL Surveillance – (Arranged by DOE-RL Surveillance Issue)

Attachment 2 – Corrective Action Plan (CAP) – PART 2 – Cause/Action Reconciliation Matrix (Additional Actions Identified During the Root Cause Evaluation)

Attachment 3 – Barrier Analysis

Attachment 4 – Why Analysis

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

March 8, 2012

CHPRC-1200377.1

Ms. Jenise C. Connerly, Contracting Officer
U.S. Department of Energy
Richland Operations Office
Post Office Box 550
Richland, Washington 99352

Dear Ms. Connerly:

CONTRACT NUMBER DE-AC06-08RL14788 – RESCINDING OF THE 100K INFRASTRUCTURE UTILITIES UPGRADE PROJECT SURVEILLANCE S-11-EMD-PRC-001

Reference: Letter, J. G. Lehew III, CHPRC, to J. C. Connerly, RL, "Contract Number DE-AC06-08RL14788 – Transmittal of Review of the 100K Infrastructure Utilities Upgrade Project Surveillance S-11-EMD-PRC-001," CHPRC-1200377, dated February 2, 2012.

On February 2, 2012, CHPRC transmitted the Corrective Action Plan (CAP) for Surveillance Report S-11-EMD-PRC-001, *Review of the 100K Infrastructure Utilities Upgrade Project.* Based upon recent discussions with RL representative, this letter formally rescinds that CAP.

Through additional discussions with RL, CHPRC will resubmit a mutually agreed upon CAP in response to this RL surveillance.

Technical questions should be directed to T. L. Vaughn at 376-5408, and contractual questions should be directed to M. V. Bang at 372-0528.

Sincerely,

John G. Lehew III
President and
Chief Executive Officer

tlv/kcp

RL - R. J. Corey
R. L. Long Jr.
M. S. McCormick
D. S. Shoop
S. A. Sieracki
D. H. Splett

Electronically Approved by:

UserName: Ciucci, John (h5427583)
Title: Chief Operating Officer
Date: Thursday, 08 March 2012, 02:30 PM Pacific Time
Meaning: Authorized to Sign for John G. Lehew, III
==========

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. C. Connerly/RL	R. M. Millikin/CHPRC	1105957.1A CHPRC Recd: 01/27/2012 REF: 1105957A/12-EMD-0015

Action: Provide a corrective action plan as requested in RL letter 12-EMD-0015. Due February 2, 2012.

NOTE: If there is an action/response due to RL the response letter ***must*** be ready for CHPRC President's signature ***two (2) days before the due date to RL***.

Subject: **CONTRACT NO. DE-AC06-08RL14788 - EXTENSION FOR THE 100K UTILITY UPGRADE SURVEILLANCE RESPONSE**

DISTRIBUTION

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		J. A. Ciucci		
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		J. C. Hoffman		
		L. J. Horton		
		M. T. Hughey		
		M. N. Jaraysi		
		A. L. Johnson		
		K. L. Kehler (Assignee)		
		J. R. Kelly		
		C. M. Kronvall		
		J. A. Meeker		
		R. M. Millikin		
		L. S. Nye		
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		M. J. Vitulli		
		K. A. Wooley		
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CHPRC CORRESPONDENCE

For Questions or Distribution/MSIN Corrections

OUTLOOK ADDRESS: ^CHPRC CORRESPONDENCE

Contact: 376-8111 or 372-3931

A-6001-538S (02/98)

1105957.1A

From: Horton, Lori J
To: ^CHPRC Correspondence
Cc: Bang, Reese; Bork, Stephen W
Subject: 1105957.1A - EXTENSION FOR THE 100K UTILITY UPGRADE SURVEILLANCE RESPONSE
Date: Friday, January 27, 2012 1:08:17 PM

From: Connerly, Jenise C
Sent: Friday, January 27, 2012 11:46 AM
To: Millikin, Richard M
Cc: Kelly, James R; Bang, Reese; Horton, Lori J; Jacobsen, Clinton M; Harp, Sue; Meeker, James; Corey, Ray J; Reinhart, W Doug; Kehler, Kurtis L; Ciucci, John A; Teynor, Thomas K
Subject: RE: EXTENTION REQUEST FOR THE 100K UTILITY UPGRADE SURVEILLANCE RESPONSE

Rick,

In advance of formal documentation, this message provides DOE acceptance of your offer of consideration, below, for a one week delay in submittal of the corrective action plan for the above surveillance, provided that the Project Review Board will be held with the government's integrated project team which includes its safety and environmental program professionals.

Jenise

From: Millikin, Richard M
Sent: Thursday, January 26, 2012 3:19 PM
To: Connerly, Jenise C
Cc: Kelly, James R; Bang, Reese; Horton, Lori J; Jacobsen, Clinton M; Harp, Sue; Meeker, James; Corey, Ray J; Reinhart, W Doug; Kehler, Kurtis L; Ciucci, John A
Subject: EXTENTION REQUEST FOR THE 100K UTILITY UPGRADE SURVEILLANCE RESPONSE

Jenise

Yesterday we conducted an Executive Safety Review Board (ESRB) that included a review of our response to 12-EMD-0015. This ESRB was originally scheduled for last week but was cancelled due to the weather concerns. It was rescheduled today to maximize the attendance for both CHPRC and DOE-RL.

Significant dialogue occurred in the ESRB between our senior staff, our project team and Ray Corey and his team members. The result of this dialogue will produce a much stronger corrective action plan and we are engaged in incorporating the results of this meeting. In order to ensure that we incorporate the valuable input from Ray and his team and the other CHPRC projects in a manner that we believe will be acceptable to our Senior Management and to RL, we will need to give the Corrective Action Management team additional time, followed by a final review/signoff by John Lehew and John Ciucci.

In consideration for a one week extension CHPRC will provide a briefing to DOE on how the corrective actions from the surveillance have been incorporated into the planning of the 100K Fire Water Line Re-Route in support of the Annex Construction Project. CHPRC will hold a Project Review Board with the project team reviewing this planning process (prior to field

implementation). In this PRB CHPRC will demonstrate the lessons learned from the 100K Utility Project has been incorporated into the upfront planning. CHPRC believes this is the appropriate project to have this review prior to approval of field work since this will have similar project management, regulatory and nuclear safety issues.

Please advise if this is acceptable

Thanks

Rick Millikin
Prime Contract & Project Integration
CH2M HILL Plateau Remediation Company
Desk 509-373-5892, Cell 509-308-9565
Richard_M_Millikin@rl.gov

CH2MHILL
Plateau Remediation Company

INTEROFFICE MEMORANDUM

DD-51485

Date: December 27, 2011

To: James A. Meeker

From: Kurt L. Kehler, CHPRC D&D Project Vice President KK

Subject: ROOT CAUSE EVALUATION TEAM CHARTER; CONTRACT NO. DE-AC06-08RL14788, 100K INFRASTRUCTURE UTILITIES UPGRADE PROJECT DOE-RL SURVEILLANCE S-11-EMD-PRC-001

Reference:
The purpose of this memorandum is to direct you, as Root Cause Evaluation Team Leader, to perform a root cause evaluation of the concerns listed in the Department of Energy Richland Operations Office (DOE-RL) Surveillance S-11-EMD-PRC-001. In addition, this memorandum will serve as a charter for the Team.

Problem Statement:
CHPRC 100K Infrastructure Utilities Project commenced construction, prior to obtaining regulatory agency required permits and necessary approvals. The Project accepted risk of regulatory agency enforcement actions without written authorization from the DOE. A DOE-RL Surveillance Report determined the Project actions to be non-complying with contractual State and Federal requirements, and concluded the CHPRC's corrective action efforts did not recognize or otherwise address a pattern of non-compliance, revealing a weakness in the implementation of Integrated Safety Management System requirements for this Project.

The surveillance noted that while substantial redesign and some rework of the fire protection system were required during execution, CHPRC delivered a fully functional fire and drinking water systems at completion.

Background:
On December 12, 2011 CH2M HILL Plateau Remediation Company (CHPRC) received a transmittal from the DOE-RL, of Surveillance Report S-11-EMD-PRC-001, *Review of the 100K Infrastructure Utilities Project Surveillance*. This surveillance evaluated the integration of environmental and safety requirements into the performance of the Project. One concern, fifteen findings, and four observations are documented in the surveillance report. This surveillance also notes that a similar concern was issued in a previous RL assessment (Surveillance Report A-10-SED-PRC-23) of May 27, 2010, which stated in part: "CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated FPP requirements".

CHPRC was directed to process Surveillance Report S-11-EMD-PRC-001 through the CHPRC established corrective action management system and provide a corrective action plan in accordance with SCRD 470.2B (Supp. Rev. 2) within 45 days of receipt of the transmittal letter. RL Lead Assessor closure is required for all 15 findings and 4 observations.

Expectations:
The analysis will be performed in accordance with procedure PRC-PRO-QA-052, *Issues Management,* and SCRD 470.2B (Supp. Rev. 2). The conduct of the analysis shall be given the highest priority by the team members and by all the CHPRC management and personnel from whom the Team requires support.

The Team shall deliver a report to Kurt Kehler documenting the evaluation. The analysis will be considered complete upon approval of the Chair of the D&D Project Corrective Action Review Board (CARB) and the Chair of the Executive Safety Review Board (ESRB).

Schedule:
The analysis will be performed in an expeditious manner with a target completion date of January 26, 2012. To meet this targeted completion date, the CARB/ESRB Chair review meeting will be targeted for the week of January 16, 2012. The targeted completion date shall in no way compromise the quality and thoroughness of the analysis.

Root Cause Analysis Team:
Responsible Manager: Kurt Kehler, CHPRC D&D Project Vice President
Cause Evaluation Team Leader: James A. Meeker
Cause Team Members: Richard H. Engelmann, Gary M. Grant, John G. Kristofzski, Stephen T. Smith, Steven H. Swenning

Authority:
The team acts with my full authority in requesting the support of the project staff related to the investigation and evaluation of this event. Any issue or barrier affecting the success or timely completion of the analysis shall be immediately communicated to Kurt Kehler at 376-0566.

jam/wdr

cc: CHPRC Correspondence Control, A3-01
D. M. Boone, X4-02
J. A. Ciucci, H7-30
K.A. Dorr, R4-40
R. H. Engelmann, H8-45
G. M. Grant, H8-20
K. L. Kehler, X4-01
J. G. Kristofzski, H8-72
J. G. Lehew, H7-30
J. A. Meeker, X4-01
D. L. Norman, X4-01
S. T. Smith, H8-43
S. H. Swenning, T4-57

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

JAN 25 2012

12-EMD-0024

Mr. M. D. Wilson, PE
Regional Engineer
Eastern Drinking Water Regional Operations
Washington State Department of Health
16201 E. Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216-2830

Dear Mr. Wilson:

OVERSIGHT REPORT FOR THE 100K INFRASTRUCTURE UTILITIES UPGRADE PROJECT S-11-EMD-PRC-001 (SURVEILLANCE REPORT)

The U.S. Department of Energy Richland Operations Office (RL) periodically performs assessments of its contractor's conformance to contractual and other obligation during execution of major projects. These assessments are generally known as "surveillances."

In late December 2011, RL contacted your office and provided a short briefing on the results of a surveillance that evaluated performance of the 100K Infrastructure and Utilities Upgrade project as reported in the Surveillance Report. At the close of the briefing, you requested a copy of the Surveillance Report which is enclosed.

If you have any questions, you may contact me, or your staff may contact Dale E. Jackson, on (509) 376-8086.

Sincerely,

Stephen R. Weil, Director
Environmental Management Division

EMD:DEJ

Enclosure

Department of Energy
Richland Operations Office
Surveillance Report

Divisions: **Environmental Management Division (EMD)**
Safety and Engineering Division (SED)

Surveillance Team Members:
Dale E. Jackson, RL-EMD, Physical Scientist
Dale C. West, RL-SED, Fire Protection Engineer
Gregory Z. Morgan, RL-SED, Nuclear Safety Engineer
Clifford Ashley, RL-SED, Electrical Safety (Retired)
David T. Evans, PAI Corp (DOE GSSC Contractor), Team Member
Walter R. Brown, CHPRC Environmental QA, Team Member

Surveillance Number: S-11-EMD-PRC-001

Date Field Work Completed: May 2, 2011 Date Initial Report Completed: June 25, 2011

Contractor: CH2M HILL Plateau Remediation Company

Facility: 100K Water Treatment Facility and Fire Water Distribution System

Title: Review of the 100K Infrastructure Utilities Upgrade Project

Guides: FPS 12.2, Fire Protection and Prevention
ISM 5.4, Continuous Improvement
OPS 9.9, Lockouts and Tagouts
OPS 9.6, Investigation of Abnormal Events and Occurrence Reporting

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Table of Contents - S-11-EMD-PRC-001

Surveillance Scope: 1

Surveillance Summary: 1

Surveillance Results: 1

Concern: S-11-EMD-PRC-001-C01 ..... **1**
The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.

Finding: S-11-EMD-PRC-001-F01 ..... **2**
CHPRC did not apply to the Washington State Department of Health for approvals required by the Washington Administrative Code prior to commencing construction of the 100K IUUP Potable Water System.

Finding: S-11-EMD-PRC-001-F02 ..... **12**
CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act prior to commencing construction of the 100K IUUP facilities.

Finding: S-11-EMD-PRC-001-F03 ..... **13**
Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.

Finding: S-11-EMD-PRC-001-F04 ..... **17**
CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan and Field Execution Schedule.

Finding: S-11-EMD-PRC-001-F05 ..... **19**
CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.

Finding: S-11-EMD-PRC-001-F06 ..... **22**
CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

Finding: S-11-EMD-PRC-001-F07 ..... **24**
The design review process applied to 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.

Finding: S-11-EMD-PRC-001-F08 30
Construction permits were not obtained from the Hanford Fire Marshall's Office by the 100K IUUP prior to commencing construction.

Finding: S-11-EMD-PRC-001-F09 32
The 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction.

Finding: S-11-EMD-PRC-001-F10 34
CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer/Deputy Fire Marshal.

Finding: S-11-EMD-PRC-001-F11 35
CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question. The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.

Finding: S-11-EMD-PRC-001-F12 38
CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Finding: S-11-EMD-PRC-001-F13 40
CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

Finding: S-11-EMD-PRC-001-F14 42
CHPRC did not meet contractual requirements requiring the maintenance of an active Memorandum of Understanding between CHPRC and the Hanford Fire Marshal's Office.

Finding: S-11-EMD-PRC-001-F15 43
CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis and provided adequate Lockout/Tagout notification and briefings.

Observation: S-11-EMD-PRC-001-O01 45
CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer.

Observation: S-11-EMD-PRC-001-O02 45
Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

Observation: S-11-EMD-PRC-001-O03 46
CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

Observation: S-11-EMD-PRC-001-O04 47
After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorized the event.

Contractor Self-Assessment 49

INDEX OF EXHIBITS 50

Surveillance Scope:

The objective of this surveillance was to evaluate the performance of CH2M HILL Plateau Remediation Company (herein after "CHPRC") Infrastructure Utilities Upgrade Project (herein after "100K IUUP" or "Project") fire water and drinking water systems subproject compliance with contractual requirements, State and Federal environmental requirements, U.S. Department of Energy (DOE) requirements, DOE Richland Operations Office (RL) requirements, other applicable codes and standards, and CHPRC policies and procedures.

Surveillance Summary:

This surveillance reveals that CHPRC did not meet all requirements applicable to 100K IUUP activities. Multiple examples of not meeting requirements involving several different disciplines were noted. The surveillance activities resulted in the identification of one Concern, fifteen Findings, and four Observations. The Table of Content of this Surveillance Report summarizes the nature of each finding and observation.

Surveillance Results:

Concern: S-11-EMD-PRC-001-C01

The Surveillance identified numerous examples of contractual and regulatory requirements that were not complied with prior to start of 100K IUUP construction. CHPRC's corrective action efforts did not recognize or otherwise address this pattern of activities and extent of condition.

Discussion:

CHPRC did not meet several contractual requirements during the construction of the 100K Water Treatment Facility and the Fire and Potable Water Distribution System. CHPRC procedures and policies did not fully integrate environmental and fire protection program requirements into project design and construction. CHPRC work management procedures that were used to initiate, implement, and perform work did not adequately identify and integrate environmental and fire protection contractual requirements. This reveals a weakness in the implementation of the CHPRC Integrated Safety Management System (ISMS) Program for the 100K IUUP. The CHPRC engineering program, project management, construction, project control, and work management, did not fully integrate contractual requirements into their activities. Some contractual requirements identified in CHRPC Procedures and Policies were not followed by the 100K IUUP.

The objective of ISMS is to incorporate environment, safety, and health into management and work practices at all levels, addressing all types of work and all types of hazards to ensure safety

for the workers, the public, and the environment. Line management is responsible and accountable for safety, safety management, and the integration of safety into business and operations at a site.

It is noteworthy that a similar Concern was stated in the previous RL *Assessment of the CH2M Hill Plateau Remediation Company Fire Protection Program* (A-10-SED-PRC-23) of May 27, 2010, which stated "CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated FPP requirements. CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." The Assessment was transmitted to the Contractor by RL letter 10-SED-0128 of August 19, 2010.

Findings 1 through 15 support this concern.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F01

CHPRC did not apply to the Washington State Department of Health (WDOH) for approvals required by the Washington Administrative Code (WAC) prior to commencing construction of the 100K IUUP Potable Water System.

Requirement(s):

1. RCW Chapter 70.119A, *Public Water Systems — Penalties and Compliance*

2. WAC Chapter 246-290, *Group A Public Water Supplies*

3. DOE O 226.1A, *Implementation of Department of Energy Oversight Policy,* and *Contractor Requirements Document* (CRD) attached thereto.

4. DOE M 231.1-1A, Chg 2 (Supp Rev 1), *Environment, Safety, and Health Reporting Manual,* and CRD attached thereto.

5. DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

6. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

7. DOE Contract Number DE-AC06-08RL14788, Section H.19, *Environmental Responsibility*, and Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

8. PRC-PRO-EP-15333, *Environmental Protection Processes*

9. PRC-RD-EP-15332, *Environmental Protection Requirements*

10. PRC-PRO-EP-15335, *Environmental Permitting and Documentation Preparation*

11. PRC-POL-EP-5054, *CH2MHILL Plateau Remediation Company Environmental Policy*

Guidance:

DOH 331-123 (Rev. 12/09), *Water System Design Manual*

Discussion:

Group A public drinking water systems in the State of Washington are subject to regulation pursuant to WAC Chapter 246-290.[1] More specifically, relevant regulations state:

> The project report is a written document that describes why a project is being proposed and includes engineering design calculations showing how the project will meet its objectives. . . . Purveyors shall submit project reports to the department and obtain written approval prior to installation or construction of any new water system, water system extension, or improvement. . . .

WAC 246-290-110(1), -110(2). The regulations also state:

> Construction documents shall identify how specific projects will be constructed while satisfying the requirements and conditions established in the project report and/or the water system plan. . . . Purveyors shall submit construction documents to the department and obtain written approval prior to construction of any new water system, or water system extension or improvement.

WAC 246-290-120(1), -120(2).

On May 6, 2009 the "100K Infrastructure Project Charter Workshop," was held to define the scope, objectives, and deliverables of the 100K IUUP. The workshop was also intended to define the schedule, cost estimate basis, roles and responsibilities, key interfaces, and requirements necessary to successfully complete the Project. Exhibits 2, 3, 4, 5, and 6.

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[1] The 100K IUUP provided upgrades to infrastructure that were necessary to support a variety of ongoing response actions being performed in the 100K Area pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC § 9601, et seq. The Project may have been entitled to exemption from Federal, State or local laws requiring permits or approvals if the Project had elected to proceed under CERCLA and such a decision had been incorporated in a CERCLA Record of Decision or other decision document. *See* 42 USC § 121(e).

The project scope adopted as a result of the Workshop Study for the 100K IUUP included, among other things, construction of a cross site raw water transfer line, a new Group A public drinking water treatment plant and water delivery lines, installation of a new fire water pumping system and new fire water delivery lines, and major modifications of fire water mains in the vicinity of the 105K W Reactor.

DOE has recognized, and has instructed its contractors since at least 1995, that WDOH Drinking Water Regulations are applicable to public drinking water systems operated on the Hanford Site.[2] This includes regulations requiring approval of drinking water system designs and construction specifications prior to commencement of construction activities. CHPRC is expressly obligated by its contract to comply with the requirements of WAC Chapter 246-290. *See* Contract Number DE-AC06-08RL14788, Section H.19, and Attachment J.2, Tables J.2.1 through J.2.8.

In June 2009, CHPRC's 100K Area ECO began an analysis to identify environmental regulatory requirements that would apply to the 100K IUUP by completing an Environmental Activity Screening (EAS) form.[3] CHPRC environmental protection procedures require that: ". . . [b]efore starting any . . . [n]ew construction projects . . . [e]xcavations or disturbances to soil . . . " a cognizant ECO must perform " . . . an environmental review and documents [sic] it using an EAS form . . . ." PRC-PRO-EP-15333, Sec. 5.3.[4] Because a drinking water system was involved in the project, the same procedures required the ECO to evaluate and " . . . determine permitting needs and develop an application for an operating permit . . . in accordance with WAC 246-290 . . . . " *Id.* Sec. 5.7. The EAS form completed by the 100K Area ECO identified that the project involved construction of a public drinking water system subject to State regulations, and would also require a determination (sometimes referred to as a clearance) pursuant to NEPA regulations. Exhibit 7.

On August 24, 2009, the 100K Area ECO again considered 100K IUUP permitting needs. On that date, the ECO sent an e-mail titled "100K Follow Up" to the EP Manager in CHPRC's central environmental organization. The e-mail quoted the requirements of the then existing

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[2] On April 11, 1995 the Director of DOE-RL's Site Infrastructure Division sent a letter to the President of Westinghouse Hanford Company stating: "The U.S. Department of Energy, Richland Operations Office (RL) is the owner of several Group A and Group B water systems, and Westinghouse Hanford Company and ICF Kaiser Hanford Company operate the water systems for RL. The purpose of this letter is to clearly state that the water systems on the Hanford Site are subject to the State of Washington Department of Health Drinking Water Regulations under Washington Administrative Code and the water systems will operate in accordance with these regulations. These regulations apply to the operation of the drinking water systems as well as to construction/modification on any system." Exhibit 1.

Since that time all Group A and B water systems on the Hanford Site have been required to be operated and constructed/modified in compliance with the above noted Washington State Department of Health regulations. This has included the system that was constructed and maintained at the 100K Area in the years immediately following the issuance of the above noted letter, and the construction and operation of the upgraded system just recently completed.

[3] About the time the EAS form was completed, the former 100K Area ECO (now the 100K Sludge Treatment Project (STP) ECO) provided the 100K IUUP Potable Water Project Engineer, and the 100K Area ECO, the working file of the existing 100K water system. This file contained the letter referred to in footnote 1, and most, if not all, of the existing documentation and historical information on the 100K Area water system, including numerous correspondence exchanges with the WDOH over the years concerning that system. *See* 100K Area water system documents from April 1995-June 2002 (STP ECO's files).

[4] Reference is to PRC-PRO-EP-15333, version dated: June 29, 2010.

PRC-PRO-EP-15333, Sec. 5.7, and requested assistance in meeting the specified requirements. Exhibit 8. During an interview, the ECO stated that his e-mail was not responded to. The assessment team requested, but was not provided any information contradicting the ECO's statement.

On October 6, 2009 CHPRC met with WDOH officials at that agency's office in Spokane, Washington. The parties discussed the permitting requirements to install a new water treatment plant at 100K Area to replace the then existing water system, and finalizing the preferred method to dispose of the filter backwash water that would be generated by the new water plant. Attendees at this meeting were the 100K Area Water Purveyor, RL Site Infrastructure Representative, ARES Corporation engineer, 100K IUUP Potable Water Project Engineer, and the 100K Area ECO. Exhibit 9. The following day (October 7, 2009) the RL Site Infrastructure Representative who attended the meeting wrote an e-mail message to the RL project representative opining that the meeting went "very well" and stating that: "Your contractor staff were very well organized, well spoken and professional." Exhibit 10.

During the fall of 2009, planning for the 100K IUUP continued. On November 9, 2009, the 100K IUUP Construction Manager sent an e-mail message "Subject: Draft SOW for 100K Water Infrastructure Project," to numerous individuals stating that:

> The PRC-PRO-AC-123 Functional & Project Concurrence Checklist has identified you as a potential required reviewer/SME of this SOW due to content of the work scope. Please review and provide comments. The Submittal Register is being developed, please identify potential submittal requirements. I am requesting comments be returned to me 11/16/09. Also, please identify if you will require approval signature on the final SOW.

Exhibit 11 and Exhibit 12 "Attachment 5 Functional & Project Concurrence Checklist."

Although the Checklist contains a question regarding whether "the service" involves "Ecology, Department of Health, or EPA requirements, investigations, or remediation," in response the CHPRC EP Manager provided "Yes" in the Applicability section of the form and "No Comment" in the Project Contact/Reviewer section of the checklist. Subsequently, on December 21, 2009, the 100K IUUP Construction Manager sent an e-mail message to the 100K IUUP Controls Clerk stating: "All SME approvals have been received and all comments have been incorporated into the SOW-Scott Story." Exhibit 13.

On December 16, 2009, the 100K IUUP Potable Water Project Engineer wrote an e-mail message to the 100K Area ECO and copying the 100K IUUP Project Manager, Project Director, and Project Construction Manager, asking permission to discuss: " . . . a potential risk related to the Department of Health permitting process . . . " and seeking assistance in the matter. The message also stated: ". . . a project report will need to be submitted and approved by the Department of Health <u>prior to construction</u> of the water system (per WAC 246-290-110) . . . . " Exhibit 14.

The e-mail goes on to explain:

> The purpose of contacting you and potentially . . . [the 100K D&D Project Environmental Director] is to determine if the environmental group has any issue with the 100K project moving forward with this approach. If so, please contact the project management team . . . [100K IUUP Project Manager, Project Director, and Project Construction Manager] to discuss the issue further.

Id.

Several minutes later the ECO forwarded the message to the D&D Project Environmental Director requesting her assistance in this matter, and copied the Project Construction Manager, Construction Manager, Project Director, Project Engineer, and EP water subject matter expert.[5] Exhibit 15.

On January 11, 2010 the President and Chief Executive Officer of CHPRC sent a letter to Mr. M.D. Wilson, WDOH Regional Engineer titled, "Request For Waiver Of Pilot Study For New 100k Potable Water Facility." Accompanying this letter was an attachment with documentation supporting a waiver of pilot testing requirements of the PALL potable water treatment system proposed to be installed at the 100K Area. The conclusion of the attachment contains the following statement:

> A project report meeting the requirements of WAC 246-290-110, and tailored to fit the Hanford Site context, will be submitted to you as soon as the required information is obtained/developed and in advance of construction of the new 100K Potable Water Facility. Preliminarily, we expect that this will occur in the February 2010 timeframe. The project report will also include a section addressing the scope, protocols, and sampling/monitoring requirements associated with the Operational Testing phase introduced above.

Exhibit 16.

On January 28, 2010 CHPRC issued a letter to Watts Construction, Inc. for the "100K River Water Isolation Project Import Water Line Notice to Proceed." This letter stated that all work was to be performed under this task no later than June 30, 2010 and to notify the CHPRC Contracts Office if that deadline could not be achieved. Exhibit 17.

On February 17, 2010, Mr. Wilson of WDOH wrote a letter to the CHPRC 100K Area Potable Water Engineer with responses to the CHPRC submission of January 11, 2010 in which he stated:

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[5] No written response to this e-mail has been provided, although the surveillance team requested that the D&D Project Environmental Director search her files and disclose any response that she may have retained.

> As outlined in your request, a project report, meeting the requirements of WAC 246-290-110, will be submitted in advance of the construction documents and will include the scope, protocols, and sampling/monitoring requirements for the testing of the full-scale facility. This project report shall include the rational for selecting the Pall [sic] membrane.

Exhibit 18.

On March 16, 2010, the 100K Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP.[6] The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." This permit was signed by, among others, the Design Authority/Technical Representative, ECO, Water Utilities Representative and the Facility/System Owner. Exhibit 19.

On April 7, 2010 a CHPRC Contracting Officer, sent a letter to George A. Grant, Inc. regarding "Contract Number 36534-31 ARRA-Potable Water Treatment Facility Contract Award Documents Transmittal." The purpose of the letter was to formally authorize George A. Grant, Inc. to proceed with the work scope defined as "ARRA – Potable Water Treatment Facility." The letter also stated that "Construction work shall be complete by July 23, 2010." Exhibit 20.

Also on April 7, 2010 and again on April 21, a Project Review Board (PRB) for the 100K IUUP was convened and evaluated the Project's readiness to proceed. Materials presented to the PRBs contained no mention of applicable regulatory requirements. Exhibits 55 and 57. Actual construction activities on the potable and fire water lines portion of the project inside 100K Area began on April 13, 2010. Exhibit 21. Construction on the Import Raw Water Line (outside of the fence) began on April 28, 2010. Exhibit 22. Construction on the Potable Water Treatment Facility by Grant Construction began on May 14, 2010. Exhibit 23.

On May 18, 2010, CHPRC's EP & SP Vice President and members of his staff travelled to Spokane, Washington to meet with WDOH and discuss water system construction in Hanford's 200 Area that had commenced without WDOH approvals. While in route, the EP & SP Vice President was contacted by the 100K IUPP Potable Water Project Engineer and was informed that work had begun on the 100K Area's new potable water delivery and treatment system prior to obtaining written approval from WDOH. He was also informed that the Project Report and construction documents required by regulations had not yet been completed and sent to WDOH. Upon learning this information, the CHPRC EP & SP Vice President advised 100K IUUP management to immediately issue a STOP WORK order and the Project was halted.

Upon arriving in Spokane later that morning, the EP & SP Vice President explained that CHPRC had requested the meeting that day with WDOH "in the interest of developing a better working relationship." According to the Spokane meeting summary, later prepared by the CHPRC EP

[6] While the ECO signed the Excavation Permit on March 16, 2011, it did not become effective until March 18, 2011 when all other required signatures had been secured.

Environmental Compliance Manager, discussion then followed concerning the use of the PALL Membrane Filter Technology, appropriate content of a project report, and "General Discussion."

Based on meeting summary notes, WDOH reiterated that while the PALL system is considered alternative filtration technology, WDOH was comfortable with the technology based on its use elsewhere in the State. WDOH then discussed the requirements for a project report and indicated they were expecting the Project Report for their review and approval. "CHPRC noted [to WDOH] that "some construction" was initiated prior to formal approval." Exhibit 24. CHPRC then asked for clarification about water purveyor responsibilities and how WDOH "would like to see roles and responsibilities implemented at a large DOE site with multiple drinking water systems and contractors." *Id.*

There was also some discussion about what constitutes the "commencement" of construction. WDOH confirmed that while construction is not defined it is intended to mean to "build or install any component that is part of the drinking water system" and that "WAC regulations do not allow for construction prior to written approval from WDOH." *Id.* WDOH further advised CHPRC that if construction began before a project report was approved, it would be "assuming risks, including the risk of needing to remove a component that is not approved in the project report. *Id.* WDOH policy prohibiting construction prior to obtaining required approvals is clear in official documents. WAC 246-290-110(2) and DOH 331-123 (Rev. 12/09), *Water System Design Manual*, Sections 2.1 and 3.1. Statements of the WDOH Regional Engineer made during this meeting are also documented in an October 19, 2010[7] CHPRC Root Cause Analysis Report which states:

> CHPRC Environmental Protection Vice President . . . and Environmental Director . . . met with WDOH on May 18, 2010. Results of meeting were that even though in the past, WDOH informally allowed construction of a water system to commence prior to formal receipt of approvals for the Project Report, per WAC 244-290-110(2), [sic] approval must be received prior to installation or construction of a water system. Therefore, noncompliance with WAC 246-290-110(2) had occurred.

Exhibit 25 at p.16.

During the return trip on May 18, 2010 to the Hanford Site, the CHPRC EP and SP Vice President contacted the 100K IUUP Project Manager and reported the results of the meeting with WDOH. 100K IUUP personnel then met and a decision was made to restart construction on the water delivery and treatment system. Later that day, the 100K IUUP Project Manager wrote an e-mail message to the CHPRC D&D Vice President copying the 100K IUUP Project Director, D&D Project Environmental Director, and the 100K IUUP Water Project Engineer giving them a brief history and status of the Project. The e-mail states in part:

[7] The Report date is listed as October 19, 2010, but the last approval signature is November 2, 2010, suggesting the latter date is that of the Report's adoption.

> . . . State Code WAC 246-290-110 requires that a project report to be [sic] submitted prior to water system construction, expansion, or improvement. . . . [W]e are not compliant with requirement WAC 246-290-110.

Exhibit 26. The message also states:

> Following CHPRC senior management's meeting earlier today with DOH, we have been directed to continue with our construction activities. Whereas it is apparent that DOH may not be fully pleased with commencing construction prior to the receipt and concurrence with the project report, it is not a critical misstep. Therefore, at this time we will thoroughly review all of our project requirements, work to submit our project report as early as possible, and engage DOH further on our project status.

Id.

In the interviews conducted with the 100K IUUP Project Manager, he stated his recollection that a teleconference was conducted on or about May 19, 2010 involving himself, the CHPRC President and CEO, CHPRC D&D Vice President, and the 100K IUUP Project Director concerning the future direction of the Project. At the conclusion of the teleconference the participants jointly decided to continue with construction activities on the potable water delivery system even though required WDOH approvals had not been obtained. He also stated that this decision was unilateral, as no approval of this decision was sought from any DOE representative.

On June 1, 2010, CHPRC submitted the "Project Report For 100K Potable Water Facility" to the WDOH for its review and approval. Exhibit 27. In the two weeks immediately following the meeting on May 18, 2010 with WDOH, the CHPRC EP group conducted an analysis of the applicable WAC potable water regulations with respect to fire system applicability. These activities resulted in the CHPRC EP and SP Vice President sending an e-mail message on June 2, 2010, to the CHPRC President and CEO, CHPRC D&D Vice President, and the 100K IUUP Project Director concerning the fire system applicability issue. This message states, in relevant part:

> Based on the review below, we can confirm that the Fire System is <u>not</u> under [W]DOH's authority. There are parts of this system that have dual purpose (both potable water and Fire System), those have to comply with the Safe Drinking Water regulations. This does not change our path forward as discussed yesterday. We need to get this Project Report (permit) into DOH's hands as soon as possible and within a week should be talking to [W]DOH in person. In the mean time we can go ahead with the Fire System installation (including the building) but should slow down on the drinking water system, until we have [W]DOH's approval.

Exhibit 28.

In the interviews conducted with the 100K IUUP Project Director and the Project Manager, when asked what the phrase "slow down on the drinking water system until we have [W]DOH's approval" meant to each of them, they both stated they didn't know, and acknowledged that construction continued.

On June 5, 2010, the CHPRC 100K IUUP Project Manager requested that the CHPRC 100K IUUP Potable Water Project Engineer contact the WDOH Regional Engineer to arrange a time to meet with him to discuss the recently submitted Project Report. According to a June 7, 2010 e-mail sent by the CHPRC 100K IUUP Potable Water Project Engineer to the 100K IUUP Project Director (copying the CHPRC D&D Vice President, CHPRC EP Director, CHPRC D&D Environmental Director, and the 100K IUUP Project Manager) the WDOH Regional Engineer did not see a need for a meeting until after he and a colleague had had time to review the Project Report. This e-mail also addresses the ARRA funding nature of the Project stating:

> Due to the fact that the 100K Infrastructure project is funded by the American Recovery and Reinvestment Act (ARRA), CHPRC is moving forward with certain activities in order to meet the aggressive schedule requirements. I stated the 100K project is moving forward with site preparatory work for the 750,000 gallon dual use water tank, foundation work and underground piping for the water treatment facility building, installation of the fire and potable water system with approximately 25% of the fire main and 20% of the potable water distribution system already installed. Mr. Wilson explained that CHPRC construction activities are being performed at risk. Based upon the review of the project report and construction documents, the Department of Health may request changes to the system and those would be at project cost. It is Department of Health's expectation that the changes would be made by CHPRC to correct any outstanding issues and issuance of the final permit.

Exhibit 29. The Assessment Team asked the CHPRC IUUP Project Potable Water Engineer if the WDOH Project Engineer noted above had supplied any written confirmation of the content and understandings contained in the above e-mail. He told the Assessment Team he had not received any such confirmation from the WDOH Regional Engineer.

On June 16, 2010, the WDOH Regional Engineer wrote back to the 100K IUUP Potable Water Project Engineer acknowledging receipt of the report and assigning a project report tracking number. Exhibit 30. The following week the 100K IUUP Project Manager submitted to WDOH construction documents (drawings and specifications) for the following components of the water delivery and treatment system: 1) 100K Area Water Line; and Water Filtration Drawings, 2) 100K Area Water Treatment Facility Plan Drawings, 3) 100K Export Water Line Drawings, 4) Construction Specification for 100K Fire Protection and Water Lines, 5) Construction Specification for 100K Water Export Line, 6) Construction Specification for 100K Water Line

and Filtration System, 7) Procurement Specification for Water Storage Tank, 8) Procurement Specification for Microfiltration System. Exhibit 31.

On July 8, 2010, the WDOH sent its formal response to the submission of the Project Report addressed to the 100K IUUP Potable Water Project Engineer. This letter provided comments to the Project Report and addressed the timing of work on the Project vis-à-vis formal written approval by WDOH. Paragraph 8 of this letter states:

> The schedule indicates that some potable water components have been or are being installed. Please note that anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service [WAC246-290-050(7)], and may be required to expose system components for our inspection, at their expense. DOH may be unable to accept any component that is installed or constructed prior to approval.

Exhibit 32.

The Assessment Team conducted interviews with the 100K IUUP Potable Water Project Engineer and the CHPRC D&D Environmental Director. Both of these individuals stated that there had been verbal communications between the WDOH Regional Engineer and the 100K IUUP Potable Water Engineer on the issue of construction prior to WDOH approval. These communications were said to have occurred on or about July 8, 2010 and that the WDOH Regional Engineer had told the 100K IUUP Potable Water Engineer that the warning language contained in paragraph 8 of the July 8, 2010 letter from WDOH to CHPRC was "standard language" that WDOH was required to put in the letter. However, the warning language notwithstanding, WDOH reported it was satisfied with how the Project was progressing and the communications that were occurring between CHPRC staff and the WDOH. The CHPRC D&D Environmental Manager told the Assessment Team members she believed she saw, or possessed, an e-mail from the WDOH Regional Engineer memorializing this understanding that WDOH would not bring an enforcement action. She told the Assessment Team she believed she might be able to produce and deliver that e-mail. However, to date, she has not provided such an e-mail to the Assessment Team.[8]

On July 22, 2010 WDOH acknowledged receipt on July 1, 2010 of the construction documents that had been sent to WDOH by CHPRC on June 23, 2010. Exhibit 33. Also on July 22, 2010 the 100K IUUP Project Manager sent a letter to the WDOH Regional Engineer acknowledging CHPRC's receipt of WDOH's comments on the Project Report "dated June 8, 2010 and discussed with WDOH in subsequent conversations on July 8, 2010." This letter then responds to WDOH's comments as enumerated by WDOH. Under comment #8 about early construction

[8] A significant number of CHPRC employees stated that no violation of regulatory requirements had occurred as CHPRC had WDOH staff's verbal permission to start construction without normally required formal approvals, and that no enforcement action would occur. Any WDOH representation notwithstanding, persons holding or needing a permit have an absolute duty to comply with permit requirements. This duty remains regardless of oral or written representations by the permitting agency allegedly excusing compliance with permit requirements.

penalties, noted in the preceding paragraph of this report, the response is, "Comment noted." Exhibit 34.

On August 3, 2010 WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer with its comments concerning the "new membrane facility." Exhibit 35. Then, on August 5, 2010, WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer approving the Project Report received June 3, 2010. Exhibit 36. Finally, on September 15, 2010 WDOH sent a letter addressed to the 100K IUUP Potable Water Project Engineer approving the construction documents received on July 1, 2010. Exhibit 37. Construction began on April 14, 2010. The WDOH approval to proceed to construction was not obtained until 155 days after the start of construction.

On January 27, 2011 the 100K IUUP Project Manager sent the Operational Performance Testing Report and associated attachments to WDOH for its review and approval. Exhibit 38. In response, on February 1, 2011, WDOH sent a letter addressed to the 100K IUUP Project Manager acknowledging receipt of the Operational Performance Testing Report. Exhibit 39. On February 18, 2011 WDOH sent its approval of the Operational Performance Testing Report and associated attachments which it had received on August 10, 2010 and January 27, 2011.[9] Exhibit 40. On March 10, 2011 WDOH again wrote to the 100K IUUP Project Manager acknowledging its receipt of the Operation and Maintenance Manual. Exhibit 41. Five days later the WDOH Regional Engineer wrote an e-mail addressed to the 100K IUUP Potable Water Project Engineer and the CHPRC 100K Area Water Purveyor which states: "O & M Manual Review (sic) We completed our review of the O&M manual that was received in this office on March 4, 2011. I have two comments, but nothing that will prevent the start-up of the new membrane WTP." Exhibit 42.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F02

CHPRC did not apply for a categorical exclusion determination (CX determination) pursuant to requirements of the National Environmental Policy Act (NEPA) prior to commencing construction of the100K IUUP facilities.

Requirement(s):

1. National Environmental Policy Act, 42 U.S.C.A. § 4321, et seq.

2. 10 CFR 1021, *National Environmental Policy Act Implementing Procedures*

[9] This letter incorrectly states that WDOH received some of these documents on January 27, 2010. This is inaccurate as the subject documents had not been generated by that date. Therefore WDOH must be referring to the Operational Performance and Testing Report submitted January 27, 2011 not January 27, 2010.

3. DOE Contract No. DE-AC06-08RL14788, Sec. H.19 (a), and Attachment J.2, Table J.2.1.

4. PRC-PRO-EP-15333, *Environmental Protection Processes*

5. PRC-RD-EP-15332, *Environmental Protection Requirements*

Discussion:

On June 18, 2009 the100K Area Environmental Compliance Officer (ECO), sent an e-mail message with an attached Environmental-Activity Screening Form (EASF) to the CHPRC NEPA subject matter expert stating that: "Because this is stimulus funded . . . we will need to obtain a [sic] activity-specific CX for our NEPA coverage." Exhibit 7.

The ECO also requested a meeting to discuss the contents of the EASF and asked when the activity-specific CX could be expected. This e-mail message was also copied to the 100K IUUP Project Director, 100K IUUP Construction Manager, D&D Project Environmental Director, and the CHPRC EP Manager. The EASF identified that the activities to be undertaken involved the constructing or modifying of a public water, raw water, or export water system. *Id.*

On April 23, 2010 the CHPRC D&D Project Environmental Director wrote an e-mail message to the 100K Area ECO asking whether the "ecological review" had been completed for the Project. Exhibit 43. Three days later (April 26, 2010) the ECO forwarded the Environmental Director's e-mail to the CHPRC NEPA Subject Matter Expert (SME) who wrote back the same day stating that now he needed to "close with . . . [the DOE Hanford NEPA Compliance Officer] on the CX" and also stated that he would "follow-up with you and . . . [the CHPRC D&D Project Environmental Director] this week." Exhibits 44 and 45. Then on April 28, 2010, the CHPRC SME wrote an e-mail message to the DOE Hanford NEPA Compliance Officer requesting approval of the ". . . activity specific CX for 100K Area Utilities Reroute." The DOE Hanford NEPA Compliance Officer did not respond, and the CHPRC SME did not make further inquiry about the status of the NEPA determination until May 24th and 25th, 2010. Exhibits 46 and 47. By that time construction, which started on April 14, 2010, had been ongoing for nearly six weeks without receiving a NEPA CX determination. On May 26, 2010, the RL NEPA Compliance Officer signed the CX for the Project. Exhibit 48.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F03

Upon discovery of its failure to meet environmental regulatory requirements, CHPRC did not recognize the extent of condition, to timely perform an analysis of causes, and to implement corrective actions.

Requirement(s):

1. DOE M 231.1-2 (Supp Rev 8), *Occurrence Reporting and Processing of Operations Information,* and CRD attached thereto.

2. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

3. DOE O 413.3A Chg 1, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

4. PRC-PRO-QA-052, *Issues Management*

5. DOE Contract Number DE-AC06-08RL14788, Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

Discussion:

On July 20, 2010 a team was assembled and convened to determine the root cause(s) of the failure to obtain WDOH written approval prior to commencing construction activities on the 100K potable water delivery and treatment system. A follow on session was performed on August 3, 2010 to further evaluate the conditions and identify the root causes. The Root Cause Analysis Report (RCA Report) was released on November 2, 2010, five months after the team was first assembled.[10]

The RCA Report contains several factual errors. First, the report states that on May 26, 2010 the CHPRC NEPA SME determined that the NEPA CX had not been obtained and that the CX approval was obtained on May 27, 2010. Realization of the lack of NEPA CX approval occurred on May 24, 2010 and actual approval from RL was obtained on May 26, 2010. The RCA Report also states that work was suspended during the week of June 1, 2010 on portions of the project "that clearly required WDOH approval." There is no evidence that any suspension of activities occurred on the project except for a few hours on May 18, 2010. In fact, CHPRC ARRA weekly reports for the weeks of April 14, 2010 to July 21, 2010, clearly detail in both text and photographs that work continued without interruption on the project during that period. Exhibit 21.

The RCA Report further states that the combination of two separate events (one at 200 East Area and one at the100K Area) was determined to be a significant issue because of noncompliance with several WAC Chapter 246-290 and Code of Federal Regulations (CFR) requirements, and CHPRC procedures. The RCA Report did not identify WAC 246-290-120, *Construction Documents,* which is a critical WAC requirement applicable to the 100K IUUP. Furthermore, the Report also does not address CHPRC requirements identified in PRC-PRO-PM-25000 which require completion of a Project Execution Plan prior to start of construction. The RCA Report also does not acknowledge applicability of DOE O 413.3A Chg 1 CRD to the project.

[10] During July, August, and the first half of September 2010 construction continued on the project without receiving the required WDOH approval, and without completion of the RCA Report.

The RCA team identified two root causes for the failure to obtain WDOH approval prior to the start of construction. The Phoenix Analysis process and the "Five Whys" were employed to identify the adverse conditions. With regard to Root Cause #1 the report states, in relevant part:[11]

> Management expectations were not clearly understood concerning unacceptability of proceeding at risk concerning environmental, regulatory approvals . . . , and, Furthermore, the Environmental Activity Screening Form (EASF) checklist did not have the drinking water requirements checked as applicable to the 100K project.

Neither of the conclusions contained in the quote above were correct. CHPRC's official correspondence with the WDOH prior to commencing construction establishes that management understood the applicable requirements. In its letter of January 11, 2010 CHPRC requested a waiver by the WDOH of the pilot study for the Potable Water Treatment Facility and acknowledged in the attachment to that letter that:

> A project report meeting the requirements of WAC 246-290-110, and tailored to fit the Hanford Site context, will be submitted to you as soon as the required information is obtained/developed and in advance of construction of the new 100K Potable Water Facility.

Exhibit 16, p. 8 Attachment to Letter.

In response to the above letter the WDOH Regional Engineer acknowledged this understanding was correct by stating in his letter of February 17, 2010 addressed to the CHPRC's 100K IUUP Potable Water Project Engineer:

> As outlined in your request, a project report, meeting the requirements of WAC 246-290-110, will be submitted in advance of the construction documents and will include the scope, protocols, and sampling/monitoring requirements for the operational testing of the full-time facility. . ."

Exhibit 18.

Thus, as early as January 11, 2010, CHPRC conveyed its understanding that construction could not commence on this Project until it received WDOH's formal written approval. The author of that letter was the 100K IUUP Potable Water Project Engineer, and the D&D Environmental

[11] According to the RCA Report the above statement correlates to the Phoenix Analysis #A4B1C01-Management policy guidance/expectations not well-defined understood or enforced. Exhibit 25, pp. 6-7 of 17, Section 6.3 RC-01.

Manager approved release of the letter prior to its being sent to WDOH. WDOH acknowledged and confirmed that requirement in its response letter dated February 17, 2010.[12] *Id.*

Furthermore, the statement under Root Cause #1 concerning the EASF not addressing the applicability of the drinking water requirements is incorrect. Under the section entitled "Constructing or Modifying Facilities, Equipment, or Processes" subsection 5.7 "Constructing or Modifying Public Water, Raw Water, or Export Water Systems" is clearly marked on the EASF. In checking that box the 100K Area ECO, acknowledged that the WDOH drinking water requirements were applicable. When the ECO sent the EASF to the CHPRC NEPA SME and copied the CHPRC EP Manager, he clearly indicated the project involved the construction of a potable water system. Furthermore, on August 24, 2009, the ECO sent an e-mail message to the CHPRC EP Manager requesting assistance in obtaining the necessary WDOH approval for this new system. Exhibit 8. The Assessment Team, in its interviews with the ECO, asked if he had received any response to his August 24, 2009 e-mail, and he stated he had not.

Root Cause #2 suggests that inexperience of some personnel, and lack of familiarity with regulatory requirements led to a belief that it was acceptable to commence construction without all WDOH approvals. It also discloses that proceeding at risk was necessary to meet project schedule. Root Cause #2 of the RCA Report states:[13]

> Individuals relied on past experience with WDOH regulators and previous drinking water installation projects outside of Hanford and the DOE Complex. Due to this experience individuals believed that:
>
> - WDOH would informally allow the simultaneous preparation and review of the Project Report while construction activities such as excavations and placement of material commenced
> - An environmental "at-risk" position was acceptable to the regulators and CHPRC
> - The "at-risk" position was also considered necessary to meet the fast-track project schedule. WDOH confirmed to CHPRC that they know and may informally allow projects to proceed at-risk even though the regulations do not allow for this interpretation.

Exhibit 25.

However, other information establishes that the project staff were fully informed that proceeding at risk was not an acceptable practice from WDOH's perspective. In order to assess historic

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[12] WDOH reconfirmed its position on this issue in its letter addressed to the CHPRC 100K IUUP Potable Water Project Engineer dated July 8, 2010.

[13] The above statement is noted in the RCA Report as correlating to the Phoenix Analysis #A3B3C06-Individuals underestimated the problem using past events as a basis.

WDOH enforcement postures, a former Hanford Site Water Purveyor was interviewed. According to this individual a WDOH Regional Engineer made it clear on many occasions that it was a violation of WDOH regulations to proceed with construction prior to obtaining WDOH approval, that such practice was not endorsed or condoned by WDOH. The former Hanford Site Water Purveyor stated that he had had discussions with the 100K IUUP Potable Water Project Engineer and the Project Manager prior to and during construction, and conveyed to the them that proceeding "at risk" was not endorsed or condoned by WDOH and could result in an enforcement action.

Finally, while CHPRC performed a root cause analysis, it did not do so in a timely fashion. Considering the guidance contained in DOE M 231.1-2, timely or prompt completion of the RCA Report would have been within forty-five days of discovery of the issues on May 18, 2010. Furthermore, the title of the RCA Report, *Root Cause Analysis Report EM-RL-CPRC-GENLAREAS-2010-0013* suggests it was prepared in connection with *Occurrence Report EM-RL-CPRC-GENLAREAS-2010-0013,* in which case it should have been published within forty-five days of the event covered by the occurrence report. *See* DOE M 231.1-2 (Supp Rev 8).

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F04

CHPRC identified environmental compliance requirements (WDOH permitting and NEPA determinations), but it did not include actions necessary to timely comply with the NEPA requirements in its Project Execution Plan (PEP) and Field Execution Schedule (FES).

Requirement(s):

1. DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

2. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

3. PRC-PRO-PM-24889, *Project Initiation and Execution*

4. PRC-PRO-PM-25000, *Project Execution Plans*

5. PRC-PRO-CN-14990, *Construction Management*

6. PRC-POL-EP-5054, *CH2MHILL Plateau Remediation Company Environmental Policy*

Discussion:

While CHPRC accurately identified environmental regulatory requirements that would need to be met during construction of the 100K IUUP, it did not address those requirements in project execution plans in a manner consistent with applicable CHPRC procedures. While 100K IUUP FES documents included schedules for obtaining approvals for the construction of the drinking water system from the WDOH, the schedules were unrealistically short and hence unachievable.

The 100K Area ECO completed a CHPRC EAS Form in July, 2009, and at that time accurately identified the need to obtain a NEPA determination and that the 100K IUUP involved construction of a drinking water system requiring approvals from WDOH. This early identification of environmental regulatory requirements is both consistent with guidance and procedures, and is expected. Exhibit 7. Unfortunately, neither the draft nor final 100K PEPs contained a strategy for meeting these requirements.

As noted under Finding 13 below, the 100K IUUP didn't adopt a final PEP until July 29, 2010. It operated under a draft PEP from approximately January 2010 until July 2010, during which period there was little or no updating occurring, nor change control exercised. CHPRC procedures preclude start of field work until a PEP has been approved. *See* PRC-PRO-CN-14990, *Construction Management,* Sec. 3.3.3.1 2.

CHPRC procedures require that environmental and other regulatory requirements be identified and PEPs prepared during the conceptual design phase (CD-1) of projects. Relevant procedures direct that during conceptual design:

> [T]he initial environmental documents applicable to the project need to be prepared including National Environmental Policy Act (NEPA) strategies, analysis, and permit applications.
>
> . . . The project manager needs to work in close coordination with the CHPRC environmental management organization to develop these strategies and documents. Failure to adequately recognize these requirements can result in lengthy and costly delays to the project.

See PRC-PRO-PM-24889, *Project Initiation and Execution*, Sec. 6.2.8. Functional design criteria documents should also be developed at this state of the project. *Id.*, Sec. 6.2.3.[14]

Initial PEPs developed at conceptual design are required to include: " . . . a description of the project's tailoring strategy for implementation of CDR O 413.3 documentation for each phase of project execution and the strategy for execution of the project phases and CD decisions by the CHPRC PRB, if applicable. *Id.* at Sec. 6.2.9. To meet these requirements, a PEP must contain an Environmental Regulatory Strategy. The Strategy must:

[14] The functional design criteria document for the 100K IUUP was not adopted and effective until April 19, 2010 at which time construction had already started. *See* PRC-EDC- 10- 45986.

> Provide a reference or identify documents that establish the environmental regulatory strategy for the project. The section should include the following: . . . Description of the governing environmental regulatory requirements for the project (e.g., RCRA, CERCLA) . . . A brief description of environmental regulatory documents and permits required for the project . . . Status and plans for National Environmental Policy Act (NEPA) compliance [sic]

See PRC-PRO-PM-25000, *Project Execution Plan.* Neither the draft nor final PEP adopted by the 100K IUUP meet the requirements specified in the preceding paragraphs. Furthermore, inaccuracies contained in the tables at the end of the 100K IUUP PEP are misleading. The PEP tables indicate no drinking water permits or approvals were needed, which was incorrect. The January 2010 version tables also state that NEPA determination had been obtained, when in fact the determination was not secured until May 26, 2010.

While FES design and construction documentation included a schedule for obtaining WDOH approval of the drinking water system, they made no provisions for obtaining required NEPA determinations.[15] It is unclear when provisions for obtaining WDOH approval were first included in the FES documentation; however it is clear that such provisions were present as of January 7, 2010. The schedule for completing these activities to support a May start of construction, as they appear in the January FES were unreasonably short and unachievable. Given the time allocated to WDOH to perform documentation reviews, address comments exchanged between the State and the permit applicant, and for the State to issue construction approvals, a process that can require at least 60 days or more, the Projects proposed submission of its application on March 9, 2010 and its expectation of obtaining required approvals by April 5, 2010 was unreasonable. It should also be noted that the same January FES scheduling submission of an application for approval to WDOH on March 9, 2010, also schedules start of construction of drinking water system components on January 29, 2010, more than a full month before even making the application for approval.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F05

CHPRC proceeded with the installation of the IUUP fire sprinkler system knowing that the design did not meet applicable codes and standards.

[15] While provisions were made to perform work necessary to obtain Cultural Resources Reviews which are a prerequisite to obtaining NEPA determinations, no provision was made for activities necessary to comply with NEPA.

Requirement(s):

1. CRD 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B requires that fire protection for DOE facilities will "meet or exceed applicable building codes for the region and National Fire Protection Association (NFPA) codes and standards." Section D.2 requires contractors to use DOE-STD-1066-99, Fire Protection Design Criteria. Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter.

2. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter - New projects and facility design, construction and modifications involving fire alarm systems, fire suppression, or water supplies shall be designed in accordance with this Handbook. Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation.

3. DOE-STD-1066-99, *Fire Protection Design Criteria* – New project and facility design, construction and modifications shall comply with this Standard. All references to the word "should" in this Standard will be interpreted as a "shall" as required by SCRD 420.1B.

Discussion:

The fire sprinkler system design (drawings and calculations) for the Potable Water Treatment Facility was not approved by a Deputy Fire Marshal (DFM) before the system was installed as required by CRD 420.1B. During construction of the 100K IUUP, K-Basins was assigned a resident DFM who held delegated review and approval authority from the Hanford Fire Marshal's Office (HFMO). However, CHPRC contracted with a private fire protection engineer (FPE) for a review and approval of design drawings. This contract FPE had no delegated approval authority from the HFMO. Drawings were reviewed by the contract engineer and comments returned to ARES Engineering, the company that produced the design. Installation began prior to any approval of the design by either the DFM or HFMO.

During personal interviews, the Assessment Team was told that the 100K IUUP Director was verbally informed by the 100K DFM in April 2010, that the design for the Fire Protection System as developed by ARES Engineering was defective and would not comply with applicable code requirements if constructed as designed. This statement is supported by entries in a Review Comment Record (RCR) generated in October 2009 that documents sixty defects. Exhibit 59. Although the 100K DFM informed 100K IUUP management of the system design defects, and that it was necessary to correct the defects and obtain HFMO approval before commencing construction, construction commenced without that approval.

After participating in an inspection tour, the DFM immediately submitted the following item into the CHPRC Corrective Action System:

> On Tuesday, August 24th, 2010, the 100K Fire Protection Engineer (Deputy Fire Marshal) was notified by facilities operations personnel that the scope of work for the day for the

> 100K new water treatment facility was to include installation of the fire suppression system. The design for this system has significant comments still outstanding from 100K Fire Protection Engineering, and has not been reviewed and approved by the Fire Marshal's Office. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes. HNF-36174, DOE Fire Protection Handbook – Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the Hanford Fire Marshal's Office. The [Engineering Projects and Construction] EPC construction manager was notified that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. The EPC construction manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the Fire Marshal's Office.

Exhibit 60. Work continued at the 100K IUUP without resolution of this Condition Report.

On September 28, 2010, 100K Senior Management issued a Field Stop Work order on the 100K Fire Suppression System Upgrade pending a comprehensive design document review and approval (CR-2010-3049). At that time, CR 2010-2597, written by the DFM, was screened out and rolled over to CR-2010-3049. An Apparent Cause Analysis was performed as a result of the Field Stop Work. Four of the corrective actions identified in the Apparent Cause Analysis were related to the clarification of the authority of the HFMO and interface with CHPRC. The causal analysis did not identify that CHPRC is required by contract to have a Memorandum of Understanding with the HFMO identifying its authority, responsibilities, and duties. See Finding S-11-EMD-PRC-001-F15 for details.

On October 13, 2010, a walk down of the 100-K Potable Water Treatment Facility was performed by the RL FPE to review fire protection and life safety features and was recorded in Operational Awareness (OA) Entry 33896. The following information was documented in the OA:

> Interviews were conducted with Fire Protection Engineers involved with the project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft. Some of the RCR review comments provided by the FPEs have still not been incorporated over one

> year later, yet RCR comments were dispositioned as "Comments Accepted." Portions of the fire alarm system (initiating devices and conduit) were also installed prior to any review of the system design by project fire protection engineering or the Fire Marshal's Office. A final (as-built) design package has not been issued by the Project to date. Therefore, the Project has not received approval for the design as installed. This is also in violation of HNF-36174, DOE Fire Protection Handbook, which requires that as-built drawings be approved by the HFMO prior to acceptance of the system.

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system have been installed on the job without prior approval of the HFMO or an authorized DFM. This is in violation of the CHPRC Fire Protection Program. MSC-RD-9118, Fire Protection Design/Operations Criteria, section 2.1.1 states:

> Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F06

CHPRC applied a Stop Work Order on the Potable Water Treatment Facility Project that was not properly executed, including improper use of the CRRS system for closure.

Requirement(s):

1. DOE-0342, Rev 2, *Stop Work*, Effective January 18, 2010

Discussion:

On September 28, 2010, CHPRC senior management issued a Stop Work on the 100K Fire Suppression System Upgrade activities pending a comprehensive design document review and approval. On September 29, 2010, a CHPRC Condition Report, number CR-2010-3049, was issued and screened at an Adverse Significance Level to initiate and document the investigation and corrective actions. This Condition Report replaced a previous Condition Report, CR-2010-2597, which had been "screened out" at the request of the responsible manager as stated in that report:

> Significance Level Justification: Sent back from Assignment by . . . Responsible Manager. Please screen out this CR to CR-2010-3049. Although submitted a month apart both CRs represent the exact same condition and screened at the same level as adverse.
>
> This condition was rescreened from an adverse condition to a screen out at the request of the responsible manager per above Justification. CR-2010-3049 is screened adverse will document the apparent cause analysis and corrective actions to address the condition.

The first Condition Report, CR-2010-2597, was initiated on August 24, 2010 by the CHPRC 100K Area FPE and included and identified four "Requirements Not Met." See Exhibit 60 for details. However, the replacement Condition Report, CR-2010-3049, identified the "Requirements Not Met" as "N/A." No explanation was stated why the requirements identified in the earlier Condition Report, CR-2010-2597, were not included in the replacement Condition Report, CR-2010-3049. Exhibit 61. The replacement Condition Report admits that a design document review should have been done prior to start of construction. Exhibit 61, "Significant Level Justification" section.

When examined on March 11, 2011, CR-2010-3049 contained a list of "Associated Files" including the D&D Project "Apparent Cause Analysis 100K Fire Suppression Stop Work." (File: 100kFireSuppressionStopWorkACA.pdf). The fifth full paragraph of page 2 of that document states: "Closure of the Corrective Actions outlined in CR-2010-3049 is required to lift the Stop Work and resume work on the Fire Suppression System Upgrade Project."

The list of "Recommended Corrective Action Items" is then enumerated. Item 2 states:

> Obtain clarification on the authority of the Deputy Fire Marshal role. MSA currently has draft document in DOE-RL for review and Approval – Mike Koch, 1/31/2010.

The Apparent Cause Analysis is signed and dated by D&D Technical Support and the 100K IUUP Project Manager on November 10, 2010.

On January 31, 2011, D&D Engineering sent an e-mail to CHPRC Corrective Action Management requesting an extension of the due date for Item 2 noted above to April 27, 2011. On February 2, 2011, a D&D Project Senior Operations Specialist then wrote an e-mail on behalf of the 100K IUUP Project Manager to CHPRC Corrective Action Management approving the April 27, 2011 extension date for CR-2010-3049 correction action Item 2. See CA-2-Extension.pdf in CR-2010-3049 Associated Files.[16]

[16] The question of the Fire Marshal's role in approving designs prior to construction is an overarching question that should have been resolved promptly. Construction activities on most of the components of this project resumed without resolving this corrective action.

It is noteworthy that no actual written Stop Work Order is listed among the "Associated Files" in the CR-2010-3049 Condition Report. However, the Apparent Cause Analysis noted above states:

> After additional discussions the 100K Areas Senior Management extended the Stop Work to cover the Fire Suppression System Upgrade project pending a comprehensive Design Document review and approval. The extended Stop Work superseded the earlier Stop Work and was documented in CR-2010-3049.

See 100K FireSuppressionStopWorkACA.pdf second full paragraph of page 2.

The Apparent Cause Analysis contains no section that allows any work to be restarted before the completion of all the corrective action items. This is consistent with DOE-0343 Stop Work which applies to all Hanford contractor and subcontractor employees and can be accessed on the CHPRC Home Page on the Hanford Site Intranet and states, in relevant part:

> Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented* in accordance with Contractor procedures (logbook or other established method of reporting/tracking/communicating safety issues and corrective action management). *NOTE: For resumption of radiological work, consult the Radiological Control Manual for additional approval requirement."

See DOE-0343 Stop Work Revision 2 Effective Date: January 18, 2010 page 3 of 6 third paragraph.

Work was restarted on this Project in October 2010. This restart of work was conducted prior to completion of the CR-2010-3049 D&D Project 100K Fire Suppression Stop Work Apparent Cause Analysis which evidently is the only written documentation of the terms and conditions of the Stop Work Order issued September 28, 2010.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F07

The design review process applied to 100K IUUP systems did not comply with contractual requirements and the Contractor's procedures.

Requirement(s):

1. CRD 420.1B (Supplemented Rev. 4), *Facility Safety*, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter.

2. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter requires that drawings for fire alarm systems, fire suppression systems, and water supplies must be approved by the HFMO prior to installation.

3. *100K MinSafe Administrative Procedure*, FP-4-014, Fire Protection Program, Section 1.1 states that: "this procedure applies to 100K Area facilities, including new project design and construction, modification, alteration, and demolition of 100K Area facilities. It also applies to operations performed within the 100K Area by the CHPRC D&D Project and other organizations." Section 3.14 states: "all construction, including modification of existing facilities, shall be in accordance with the requirements of MSC RD 9717, DOE-STD-1066, CRD 420.1B, HNF-36174, and applicable NFPA Codes and Standards."

4. *CH2M Hill Requirements Applicability Matrix* states: ". . . the following Requirements Applicability Matrix Reports (RAM) are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, etc) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The RAM lists MSC-RD-9118, Fire Protection Design/Operations Criteria as satisfying the categories of 29 CFR 1910, *Occupational Safety and Health Standards*, and CRD O 420.1B Supplemented, Rev 4, *Facility Safety*. The RAM lists MSC-RD-10606, *Fire Protection Program Requirements* as satisfying the categories of 29 CFR 1910, *Occupational Safety and Health Standards*, CRD M 231.1-1A, *Environmental, Safety, and Health Reporting Manual*, and DOE O 420.1B Supplemented, Rev 4, *Facility Safety*.

5. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.1 states: "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, Life Safety Code, shall be approved and permitted by the HMFO prior to installation or modification in accordance with MSC-RD-8589, Hanford Fire Marshal Permits."

6. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.4 states: " . . . [The Hanford Fire Marshal (HFM)], who shall be a member of the . . . [Hanford Fire Department (HFD)], shall have the authority to develop, administer and enforce the Fire Prevention Program for the . . . [Mission Support Contractor (MSC)] as directed by SCRD O 420.1B, Rev. 4, *Facility Safety*, and by RL approval of the HFM's Charter, which establishes the authority, responsibilities and duties of the HFM. The HFM's authority shall extend to all work performed under or on behalf of MSC. RL will support the HFM in enforcement of the codes and standards and execution of the HFM's duties as

described below . . . . Section 2.4.2 states: "To support the development, administration and enforcement of the Fire Prevention Program the duties of the HFM shall include but not be limited to: Review and approval of new fire protection system designs and modifications/ upgrades to existing fire protection systems per MSC-PRO-8635, Review and Approval of Technical Documents."

7. DOE O 414.1C, *Quality Assurance*, Attachment 2 , Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc." Section 3.g. paragraph (1) states: "Procure items and services that meet established requirements and perform as specified."

Discussion:

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system were installed on the job without prior approval of the HFMO or HFMO representative. DOE O 414.1C, *Quality Assurance*, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

On August 24, 2010, the CHPRC 100K FPE was notified by facilities operations personnel that the scope of work for the day for the 100K new Potable Water Treatment Facility was to include installation of the fire suppression system. The design for this system had significant comments still outstanding from 100K Fire Protection Engineering, and had not been reviewed and approved by the HFMO. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes. As a result, Condition Report CR-2010-2597 was generated on August 24, 2010, by the CHPRC 100K FPE.

CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the *DOE Fire Protection Handbook*, Hanford Chapter. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter, requires that drawings for fire alarm systems, fire suppression systems, and water supplies, must be approved by the HFMO prior to installation. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the HFMO.

The 100K IUUP Project Manager was notified on August 24, 2010, by the 100K FPE/DFM (CR-2010-2597), that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. At that time, the 100K IUUP Project Manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the HFMO.

CHPRC also procured fire protection equipment and had it installed prior to completion and approval of the associated design. The RL Electrical SME and the RL Fire Protection SME

obtained a copy of Contract #36534-31 Statement of Work (SOW) for the K-Basin/ARRA Potable Water Treatment Facility project, dated April 7, 2010, and observed within section 3.1.5 paragraph D that the construction Contractor (George A. Grant Inc.) was directed to install "the Buyer (CHPRC) provided diesel power fire pump, jockey pump, fire pump controller, and the fire alarm control panel." This equipment was procured on April 14, 2010 (based upon the vendor's certificate of compliance submittal). However this procurement was completed before the associated design was completed and approved. The fire pump installation drawings were not approved by the HFMO until January 18, 2011 (100K Water Treatment Project Status Report January 25, 2011). If CHPRC ARRA Project management and staff had procured the mentioned equipment after the design was completed and approved, they would not have needed to procure and install the jockey pump. HNF-36174, *DOE Fire Protection Handbook* – Hanford Chapter, requires that drawings for fire alarm systems, fire suppression systems, and water supplies, must be approved by the HFMO prior to installation.

A tour of the new 100K Potable Water Treatment Facility was conducted on September 1, 2010, by representatives from a DOE GSSC support contractor (PAI Corp.) and CHPRC Fire Protection Engineering (OA 32906). The Potable Water Treatment Facility was designed to provide several fire areas in the building rated at one and two hours, but no fire barrier designs had been submitted by the Project for approval by the HFMO. Not all interior walls extended to the roof level of the building and several rooms had suspended ceilings. At that time work was progressing on installing a two hour fire rated suspended ceiling in the electrical room. The submitted, but not yet approved, sprinkler drawings showed only sprinklers at roof level. Without the approval of the CHPRC FPE, sprinkler installation had started. When this was discovered, the work was halted and the CR was generated. The installation included sprinkler drops into suspended ceiling areas, but these were not in accordance with design drawings.

The building sprinkler riser had been installed on an inside wall in the pump room and was fed directly from the fire pump with no control valve, contrary to NFPA requirements. The CHPRC FPE/DFM required that it be moved to an outside wall and that a wall control valve be installed for isolating the system without turning off the pump or entering the building. The fire pump skid had also been delivered to the pump room, but the design for the fire pump and piping had not been approved by the DFM.

A significant amount of work was proceeding without review and approval of the DFM. Under Requirements Not Met in the CR-2010-2597 it stated:

> CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter. HNF-36174, DOE Fire Protection Handbook – Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the HFMO prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the HFMO.

It is noted that prior to the discovery of these problems on the 100K Potable Water Treatment Facility, RL had released its Assessment of the CHPRC Fire Protection Program, S-10-SED-PRC-023, on 8/19/2010. This assessment included the following concern: "Concern A-1O-SED-PRC-023-CO1 - CHPRC Procedures and Policies, D4 activities, and subcontractor activities, have not fully integrated FPP requirements. CHPRC Work Management Procedures that initiate, implement, and perform work do not have adequate integration of Fire Protection Procedures. This is a significant weakness in the CHPRC Integrated Environment, Safety, and Health Management System (ISMS) Program." It was clear that CHPRC still had not integrated or implemented fire protection requirements.

Questions were raised on September 22, 2010. The fire pump and piping was in the process of being installed, but the fire pump system controller was not, nor had any review data been submitted for approval by the HFMO. The fire pump piping drawings had reportedly been sent by CHPRC back to ARES for revision and had not been approved through the HFMO. Some piping and the fire pump/driver skid had reportedly been installed with "verbal" approval. The fire pump/diesel driver skid had been bolted and concrete filled. It could not be determined at that time if that was done in accordance with the manufacturer's approved/listed requirements and specifications.

At this same time, concerns were raised on the fire wall construction as to what UL listed design was being used, overlap of joints, fastener spacing, a wall ventilation louver that did not have a fire rated damper, etc. Electrical and piping installation and equipment setting were still ongoing in the Potable Water Treatment Facility, with power supply to the building planned for later that week. The Chemical Storage Room was still being worked on to complete fire walls, fire damper replacement, and sample tubes penetrations protection. For the Electrical Room the fire walls still need to be extended to the roof and an approved wall/roof membrane interface detail still needed to be resolved.

The fire alarm system was still in the submittal/review stage. Some conduit and boxes were installed at an earlier date but this work was stopped to get approvals. A fire alarm panel was submitted that did not meet specifications (a FireLite-4 zone was specified), was undersized by the design, and was not a Hanford Site standard panel that maintenance and testing forces are trained on. A new submittal and approval was being processed to increase the size of this panel and resolve this issue. Once again there was no installation permit for the fire alarm system and one had to be created after work had already commenced (HFM Permit Number 2010-860 of December 16, 2010).

Filling and hydro-testing of the new 750,000 gallon water tank was reported to be complete, and final insulation of the tank roof was in progress. Pressure testing of the fire line loop around 105KW was reported to be complete. The fire water distribution piping off the South East corner near Cold Vacuum Drying Facility (CVDF) was in place, but the project changed a section of 12 inch distributions system to 8 inch. This is contrary to the requirements of CRD 420.1B, Supplemented, rev. 4, Section B.7.a, which states, "Distribution mains, either sanitary or raw water, that are being extended to supply water for domestic and/or process water and will provide water for fire suppression systems (sprinklers and/or hydrants), shall be at least 12

inches in diameter." The project did not request relief from this contract requirement until after the piping was installed.

The continuing project goal at that time was to have all review, approval, installation, and acceptance testing for the Project completed by the end of September. Considering the large number of continuing unresolved issues, that did not happen.

On October 13, 2010, another walk down of the 100-K Potable Water Treatment Facility was performed to review fire protection and life safety features. The walk down was attended by several individuals including, the field work supervisor, the K-Basin FPE /DFM, CHPRC Fire Protection Program Manager, contract FPE supporting K-Basin, FPE supporting the HFMO, RL Electrical Subject Matter Expert (SME), and the RL FPE. The 100-K IUUP Project Director joined the tour in progress. At that point, the fire sprinkler system had been installed. Some components of the fire alarm/notification system (back plates for notification appliances and conduit) had also been installed. The fire pump and piping were in place. For the most part the fire pump piping was complete with the exception of a few segments of piping that were missing. Internal fire barriers had also been partially constructed, existing construction of the fire rated walls did not connect with the unrated roof assembly, and barrier penetrations were not properly sealed.

Interviews were conducted with FPEs involved with the Project and the Fire Marshal's Office. All reviews performed by the FPEs were of partial submittals, DCNs, and some drawings in draft, even though full submittals had been requested of the Project. Some of the RCR review comments provided by the FPEs had still not been incorporated over one year later, yet RCR comments were dispositioned by the Project as "Comments Accepted." Final review packages for the fire alarm and fire sprinkler systems had not been reviewed by the FPEs, yet the systems were installed in the building. A final design package, requesting 100% design review, has never been issued. Therefore, the Project had not received approval for the final design.

The FPEs involved with the 100K IUUP have concluded that the individual(s) designing the Potable Water Treatment Facility fire protection systems working for outside firms, such as ARES Corporation, were not technically qualified in the fire protection field. Although the drawings submitted were stamped by a Washington State Licensed Engineer, the drawings contained a variety of defective specifications that if built would have resulted in code violations.

The fire sprinkler system, fire pump/piping, and portions of the fire alarm/notification system had been installed on the job without prior approval of the HFMO or DFM. This is in violation of the CHPRC Fire Protection Program. MSC-RD-9118, *Fire Protection Design/Operations Criteria*, section 2.1.1 These systems had been installed without the required approvals. When the 100K IUUP Project Director was asked why the systems were installed without approval from the HFMO, he stated that "those procedures don't apply to me, those are MSC procedures." When explained that the MSC Fire Protection Program and Procedures were adopted and endorsed by CHPRC as its Fire Protection Program as identified in CHPRC Requirements Applicability Matrix he stated, "I don't care, they still don't apply to me."

Work on installation of fire protection systems, including fire barriers was then shut down by CHPRC upper management. The Project then hired Hughes and Associates, a fire protection consulting firm, who sent several FPEs to sift through the documentation and look over what had been installed to determine the path forward to obtain code compliance and to assist in completing the design of the Project. A final design had not been completed so that a 100% design review package could be submitted to the AHJ for review and approval.

As of the end of December 2010 the following 100K IUUP items were still open for either issues resolution, design modification, review completion, and/or approvals: fire barriers, fire pump re-design, fire pump room ventilation design, three water distribution system ICRs, water distribution system design modifications, and the water supply cross-over.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F08

Construction permits were not obtained from the Hanford Fire Marshall's Office by the 100K IUUP prior to commencing construction.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev 4), *Facility Safety*, Section D (8) states: "Conditions, operations, or materials hazardous to life or property pursuant to the Uniform Fire Code, Section 1.12, shall be permitted through the Hanford Fire Marshal Permit System."

2. *100K MinSafe Administrative Procedure, FP-4-014, Fire Protection Program*, Section 3.18 states that, "Several actions/activities require the development and approval of a HFM Permit prior to initiation of the action/activity. These actions/activities include:

- facility construction/demolition
- placement of relocatable structures
- transport and use of explosives
- use, handling, or storage of hazardous materials in excess of defined limits
- operation or storage of fossil-fueled vehicles inside any building not designed for such use, except as authorized by the facility FHA
- new or modified facility occupancy
- outdoor burning
- placement and use of electric heaters in excess of 1500 watts
- placement and use of fuel-fired heaters
- placement and use of portable generators
- blockage of roads
- facility egress modification
- utility outages

- fire protection system (including fire hydrant) installation or deactivation

3. *CH2M Hill Requirements Applicability Matrix states:* " . . . the following RAM Reports are compiled in accordance with PRC-PRO-MS-40117, *Requirements Management Process*, from the RAM2 database. These reports display directive (e.g. Laws, Regulations, DOE Directives, . . .) information based on Attachment J.2 (Requirements Sources and Implementing Documents) of the CHPRC Contract, DE-AC06-08RL14788, and associated company level procedure data from Docs Online." The applicability matrix lists MSC-RD-8589, Hanford Fire Marshal Permits under both 10 CFR 830 Nuclear Safety, and CRD O 420.1B Supplemented, Rev 4, Facility Safety.

4. MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities*, Section 2.1.2 states: "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, *Hanford Fire Marshal Permits*, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD, (initiated through a Hanford Fire Department Contractor Pre-Incident Plan Request Form, (A-6003-387) are submitted to the HFM prior to engaging in activities or processes governed by the forms (Ref: MSC-PRO-24889, Project Initiation and Execution, Appendix A Section 8.2)."

Discussion:

The 100K IUUP did not follow contractual requirements identified in CRD O 420.1B, (Supplement Rev. 4), and CHPRC procedures identified in MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities* and MSC-RD-9118, *Fire Protection Design/Operations Criteria.*

Construction permits allowing the construction of the Potable Water Treatment Facility (HFM Permit No. 2010-852) and the 100K Fire Water and Potable Water Distribution System (HFM Permit No. 2010-853) were not obtained until December 16, 2010 (long after construction was complete). Additionally, the fire sprinkler system construction permit (2010-861) and fire alarm system construction permit (2010-860) were obtained on December 16, 2010, after the systems had been installed.

MSC-RD-9118, *Fire Protection Design/Operations Criteria*, Section 2.1.1 states: "Installation or modification designs for all fire protection systems, water distribution systems, and life safety features as defined in NFPA 101, *Life Safety Code*, shall be approved and permitted by the Hanford Fire Marshal's Office prior to installation or modification in accordance with MSC-RD-8589, *Hanford Fire Marshal Permits*."

MSC-RD-9717, *Fire Prevention for Construction/Occupancy/Demolition Activities,* section 2.1.2 which states that, "The construction manager shall ensure that the applicable forms, as required by MSC-RD-8589, *Hanford Fire Marshal Permits*, (initiated through a Hanford Fire Marshal Permit Request Form) and by this RD are submitted to the HFM prior to engaging in activities or processes governed by the forms."

Additionally, section 2.1.3 that states that, "The construction manager, as part of the hazards communication effort, shall complete a *HFD Construction/Demolition Fire Safety Inspection Checklist* prior to the commencement of construction or demolition activities with the assistance from the Fire Protection Engineer (FPE) and perform follow-up inspections at a frequency determined by the FPE."

The contractor/project did not obtain a Construction Permit, issued by the HFMO, prior to engaging in activities and processes governed by the permit. Additionally, a HFD Construction/Demolition Fire Safety Inspection Checklist was not completed, to ensure that the requirements of MS-CRD-9717 were being implemented.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F09

The 100K IUUP installed a water distribution system that did not meet contractual requirements, and did not apply for and receive required exemptions and equivalencies from RL prior to commencing construction.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B.7.b.3 states: "Underground distribution systems for fire protection water supplies shall be of the looped grid type arranged with two-way flow and sectional valving to provide alternate flow paths from the source to any point in the distribution system for nuclear facilities and buildings or groups of buildings with an MPFL exceeding $15 million. The looped grid shall be provided with a second independent source of water supply for Category 2 Nuclear Facilities or where the MPFL exceeds $50 million. Application of this requirement to existing facilities will be made on a case-by-case basis after consultation with the RL AHJ."

2. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section B.7 a states: "Distribution mains, either sanitary or raw water, that are being extended to supply water for domestic and/or process water and will provide water for fire suppression systems (sprinklers and/or hydrants), shall be at least 12 inches in diameter. Sectional valves shall be installed in the following manner for new installations and water distribution main upgrades."

3. DOE O 414.1C, *Quality Assurance*, Attachment 2, Section 3.e (1) states: the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

Discussion:

The 100K IUUP installed water utility piping prior to applying for and receiving approved exemptions and equivalencies from RL. After installation of the water distribution system, CHPRC requested an exemption for the lack of a looped water distribution system for the 105-KE building, and for the substitution of an 8 inch water main in lieu of the required 12 inch water main.

A looped fire water distribution main was required to be installed around the 105KE reactor building in accordance with PRC Section J, Attachment J.2, Contractor Requirements Document Order 420.1B, Facility Safety, Supplemented Revision 4, Section B, Item 7.b.3. which states:

The newly installed 100-K water distribution system did not provide a looped supply main around the 100-K area, nor did it provide a loop around the 105KE reactor building. The 12 inch diameter supply terminates (dead ends) south of the 105KE reactor building. The new 105KE supply provides water to two new fire hydrants south of the 105KE reactor building, and one new fire hydrant east of the 105KE reactor building. An equivalency exemption was requested by the contractor (letter CHPRC-1100455) due to the difficulty of co-coordinating with the extensive soil excavation and remediation commitments in the areas around the 105KE reactor building, and areas further west toward the 105KW building.

Additionally, the original water loop design requirements called for 12 inch fire water mains in the 100K Area new water distribution system. CHPRC made a unilateral decision during installation of the water main piping to change the 12 inch loop around the 105KW to 8 inch pipe. However, the equivalency request for relief from contractual requirements was not submitted to RL until after the piping had been installed. *See* letter CHPRC-1101317.

A 12 inch diameter distribution main is required to be installed in accordance with PRC Section J, Attachment J.2, Contractor Requirements Document Order 420.1B, *Facility Safety*, Supplemented, Rev. 4 (SCRD), Section B.7. The 8 inch fire water distribution lines that were substituted around 105KW supply water to a fire suppression system, fire hydrants, feed the 105KW de-mineralized water system, and provide water to two controlled water fill stations located at the southwest and southeast corners of the 100K Area.

Final connections to the new fire water distribution system were performed at CVDF on February 5, 2011, and 105KW on February 19, 2011, completing the water distribution system installation. The non-looped water distribution exemption request was submitted to RL on February 28, 2011 (letter CHPRC-1100455). The 8 inch to 12 inch equivalency request was submitted on March 10, 2011 (letter CHPRC-1101317). In both cases, the exemption and equivalency requests were sent in by the contractor after the installation of non-compliant components.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F10

CHPRC began construction of the Potable Water Treatment Facility building prior to the review and approval of the design by a qualified Fire Protection Engineer/Deputy Fire Marshal.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), Chapter II, Facility Safety, Section 3.a.3 states: "Fire protection for DOE facilities, sites, activities, design, and construction must meet or exceed applicable building codes for the region and NFPA Codes and Standards."

2. CRD O 420.1B (Supplemented Rev. 4), Facility Safety, Section D.5 states: "Fire rated assemblies shall be installed, as required by DOE-STD-1066-99, the fire hazard analysis, NFPA or building code to reduce loss potentials."

3. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11 states: "Documents for new designs and modifications to existing facilities affecting fire protection or fire code compliance must be reviewed and approved by the Hanford Fire Marshal's (HFM) Office in accordance with MSC-PRO-8635, Review and Approval of Technical Documents, or equivalent requirements implemented by other contractors."

Discussion:

The first design submittal received by the 100K IUUP addressing the Potable Water Treatment Facility related to the building structure was submittal 36534-031 Sub 13125-03, sent from WHPacific, Anchorage, AK, on April 21, 2010. The correspondence stated that, "the Architect stamp will be added after initial review and comments have been incorporated." The submittal was reviewed by the 100K IUUP Project Engineer and the Buyers Technical Representative on May 4, 2010. No fire protection review was performed of this submittal.

The second design submittal, 36534-031 Sub 13125-02, was received on September 2, 2010; over four months after Project construction had begun. Exhibit 62. The Project Engineer forwarded the submittal on to the PFP Fire Systems Engineer for review along with the K-Basin DFM. The PFP Fire Systems Engineer responded with his observations of the buildings physical condition based on a walk down of the site, and clearly documented that building construction was well under way prior to seeking DFM approval. At this point in time, neither the PFP Fire Systems Engineer nor K-Basin DFM granted any approvals, but did make comment on several design deficiencies. While the CHPRC Contract requires obtaining HFM or DFM approval of designs prior to commencing construction, written DFM approval of the design was not actually granted until December 2010 at which point construction was nearly complete.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F11

CHPRC proceeded with construction without identifying and resolving an Unreviewed Safety Question (USQ). The potential for the new water system to provide excessive water flow, overflowing the KW basin and releasing radioactive materials, has not been evaluated for USQs.

Requirement(s):

10 CFR 830 requires identification and analysis of USQs prior to construction of new, or modification of new nuclear facilities. More specifically the regulations require:

> The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must establish, implement, and take actions consistent with a USQ process that meets the requirements of this section [and]. . . [t]he contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must implement the DOE approved USQ procedure in situations where there is a: (1) Temporary or permanent change in the facility as described in the existing documented safety analysis;(2) Temporary or permanent change in the procedures as described in the existing documented safety analysis;(3) Test or experiment not described in the existing documented safety analysis; or (4) Potential inadequacy of the documented safety analysis because the analysis potentially may not be bounding or may be otherwise inadequate.

10 CFR 830.203. Furthermore,

> If a contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility discovers or is made aware of a potential inadequacy of the documented safety analysis, it must: Take action, as appropriate, to place or maintain the facility in a safe condition until an evaluation of the safety of the situation is completed;(2) Notify DOE of the situation;(3) Perform a USQ determination and notify DOE promptly of the results . . . .

Id.

Discussion:

The nuclear safety aspects of the replacement water supply and fire suppression water distribution system were reviewed. There is considerable confusion in this area. While CHPRC staff and management are adamant that all revisions were properly reviewed, their responses were sometimes contradictory. Most nuclear safety issues have been resolved, but a few issues

remain. This team cannot definitively determine whether all changes received the required Unreviewed Safety Question (USQ) review.

The primary nuclear safety issue is: Can the new system provide excessive water, such that any leaked water could enter K West Basin and cause an overflow? The K Basin FSAR Section 3.4.2.9 "Overflow of Radioactive Water from 105-KW Basin" addresses an accident characterized as an operational spill event with a frequency of "unlikely." A pipe break in a 105-KW Basin building or an operating mistake can cause an overflow of the fuel storage basin water, with possible release of radioactivity to the environment. The maximum size water inlet line in the basin area (8 inch) is assumed to fail. The replacement water supply adds new water supply lines which may create the potential for higher water flow if a line breaks.

These issues should have been addressed through the USQ process. RL staff reviewed the USQ logs and found no evidence that these issues were addressed. Further, CHPRC nuclear safety staff have stated that no USQ screenings or evaluations address these issues. While CHPRC has analyzed the potential rupture of the new 750,000 gallon water tank and concluded that the basin is protected from such occurrence by topography, CHPRC did not address the potential increased flow through new water lines. Since being informed of the potential USQ issue, CHPRC has not entered the potential inadequacy of the documented safety analysis process as required by 10 CFR 830.203 (g).

The Assessment Team raised a second USQ question in that it remains unclear whether there was an adequate USQ evaluation covering the design change reducing the system from providing "a twelve inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW" to tying into the existing 8 inch loop around Building 142-K (CVDF), and use of a new 8 inch loop around 105-K West.

RL staff reviewed the USQ logs and found no evidence that the revision was addressed. In the course of this surveillance, CHPRC nuclear safety staff and management were asked "which USQ screening or evaluation is CHPRC relying on to support the change from 12 inch fire supply lines to 8 inch lines?" CHPRC staff responded that they were relying upon USQ-0025-2011. USQ-0025-2011 states that it reviewed DCN-KUP-073, which "modifies the fire line routing on the east side of CVDF and adds a fire hydrant south of 105-KW. The proposed revision does not conflict with the water system upgrade in Section 2.9.1.7 of the FSAR."

However, the proposed revision does conflict with requirements of the FSAR, which states:

> The planned system will provide a new water supply for the 100K Area . . . . The planned fire suppression water distribution system will provide a 12 inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW. Existing piping exterior to Building 105-KW will be replaced with a new loop, providing six new fire hydrants and the water supply to the Building 105-KW administrative area automatic sprinkler system. A single 12 inch fire main will serve facilities in the central corridor (1724-K, MO-

> 500, and hydrants in the central corridor) and on the east side of the 100K Area (MO-293, and hydrants on the east side, including hydrants in the vicinity of Building 105-KE). Normal system pressure will be maintained by new service water pumps, which will be sized and controlled to maintain system pressure at a level comparable to that provided by the existing system (approximately 120 psi)."

Facility Safety Analysis Report, Sec. 2.9.1.7.

USQ-0025-2011 addresses the fire line routing, but does not address the revision from 12 inch fire mains and loops to 12 inch mains and 8 inch loops. Therefore, there does not appear to be a USQ evaluation which covers the reduction from providing a "12 inch fire main throughout the 100K Area, with a looped and gridded system on the west side of the 100K Area, supplying Buildings 142-K and 105-KW" to tying into the existing 8 inch loop around Building 142-K (CVDF).

DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.e(1) states the contractor must, "Perform work consistent with technical standards, administrative controls, and hazard controls adopted to meet regulatory or contract requirements using approved instructions, procedures, etc."

CHPRC did calculate that the revision would still provide adequate water supply to CVDF (DD-47929, Revision 0, and dated 12/27/2010). The calculation was USQ screened October 20, 2010. Thus the USQ Screen 0245-2010, which specifies calculation DD-47929, Revision 0, was performed 2 months before the date of the document it screened against. This conflict in dates remains unresolved. Therefore, this team cannot determine what was reviewed in the USQ screening. Exhibit 58.

Both DD-47929 and USQ screen 1245-2010 were performed before the revision was tied in to the existing 8 inch water loop, therefore the USQ process was followed, but the adequacy of this process is in question because USQ Screen 0245-2010 relied upon a calculation which had not been done.[17] Resolution of these issues merits further inquiry, and that inquiry is recommended.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

[17] Work packages examined during the course of this Surveillance establish that CHPRC originally intended to connect the new fire water system components to the old fire suppression system on September 28, 2010. At that point in time no USQ had been performed. The planned connections were not made when CHPRC executive management issued, at the request of a Project Fire Protection Engineer, a Stop Work order to facilitate addressing other problems affecting the reliability of the fire water delivery system. All indications are that absent this unrelated Stop Work order, the new components would have been connected to the old system without first performing a required USQ analysis.

Finding: S-11-EMD-PRC-001-F12

CHPRC commenced construction of the 100K IUUP without a finalized and approved Project Execution Plan.

Requirements:

1. DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets,* and CRD attached thereto.

2. DOE O 414.1C, *Quality Assurance,* and CRD attached thereto.

3. PRC-PRO-PM-24889, *Project Initiation and Execution*, Section 5.8 and 6.1

4. PRC-PRO-PM-25000, *Project Execution Plans*

5. PRC-PRO-CN-14990 *Construction Management* Section 3.3.3.1 and 3.3.3.2

6. PRC-MP-CN-28049 *Construction Procedure Manual* Section 3.12

7. PRC-GD-WKM-12116 *Work Planning Guide* Figure 1

Discussion:

The 100K IUUP began construction activities without a required PEP. The Project continued on with construction for over three months before a final PEP was released. By that time substantial construction on both the water treatment system and the fire water system had occurred, and design for the fire water system was known to contain defects. The lack of a PEP was documented in an independent assessment conducted by the CHPRC Performance Oversight organization.

On April 14, 2010 the CHPRC Manager of Performance Oversight sent the *Final Report, Independent Assessment Of Engineering, Projects And Construction, CHPRC-PO-IA-10-02* to the CHPRC Vice President of Engineering, Projects, and Construction (EPC). This performance based independent assessment was conducted to evaluate EPC's implementation of programs, procedures, and policies as they relate to conduct of work. The assessment focused on the adequacy, compliance, and in-field execution of work activities and processes. The assessment made a number of findings including:

> 100K Utilities Upgrade Project PEP was in continuous revision without issuance of a controlled document. This practice was out of compliance with PRC-PRO-PM-25000, Project Execution Plans, Rev 1, Chg 0.

Exhibit 51.

The assessment also included a finding regarding another CHPRC project operating with an outdated PEP and stated, "The PEP was to be updated as changes occurred and at a minimum prior to the start of each phase of project execution as required by PRO-PM-24899, Project, Section 5,8 and PRC-PRO-PM-25000, Section 3.2." This finding was also applicable to the 100K IUUP as it continually changed without the benefit of a final PEP, or any updates as the project evolved. *Id.*

As a result of the assessment a CHPRC Condition Report Form was generated. This report assigned a significance level of "Track Until Fixed" to this item. The explanation for this level is stated as:

> This condition is screened as a Track Until Fixed (TUF).
>
> The stated condition documents a non compliance with the requirements of PRC-PRO-PM-24889. The CR does not document where the subject condition has resulted in an adverse effect upon the project. However, actions will need to be taken to correct the documented deficiencies. The screening level as a TUF is assigned to this CR which will require that a cause be identified and documented. This CR will also document the actions taken to address the subject condition.

Exhibit 52.

The condition report written on April 13, 2010 and Action #3 addresses the IUUP PEP. On June 30, 2010 the action item assignee wrote an e-mail message addressed to the CHPRC Corrective Action Management. This e-mail requested an extension for completion of the PEP and states:

> Please extend the above action due date to 7/22/2010 due to competing priorities and resource unavailability. The proper resources have now been applied and the action will be completed by the new due date.

Exhibit 53.

The PEP was finally released on July 29, 2010. The document is signed by the Responsible Manager and the Information Owner/Author Requestor. Under Section 3.4, "Funding Profile" the total project cost is $23,380,700. According to Section 5.8 of PRC-PRO-PM-24889 *Project Initiation and Execution* the CHPRC President's Office or the EPC Vice President is the approval authority for PEP's for projects with a total project cost of $20M to $100M. The PEP does not address whether the CHPRC President or the EPC Vice President formally approved of the final PEP and no evidence of such approval has been found.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F13

CHPRC issued excavation permits for 100K IUUP construction activities prior to obtaining an authorization from the Hanford Site NEPA Compliance Officer, and prior to verifying completion of a new, or the existence of a current and applicable cultural resources review.

Requirements:

1. National Historic Preservation Act (NHPA), 16 USC § 470-1, et seq.
2. Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC § 3001, et seq.
3. 10 CFR 1022, *Compliance with Floodplain and Wetland Environmental Review Requirements*
4. 36 CFR 60, *National Register of Historic Places*
5. 43 CFR 10, *Native American Graves Protection and Repatriation Regulations*
6. DOE M 450.4-1, *Integrated Safety Management System Manual,* and CRD attached thereto.
7. PRC-PRO-EP-15333, *Environmental Protection Processes*
8. PRC-RD-EP-15332, *Environmental Protection Requirements*
9. DOE-0344, *Hanford Site Excavating, Trenching and Shoring*

Discussion:

On March 16, 2010, the 100K Area ECO signed a Hanford Site Excavation Permit authorizing initiation of construction activities for the 100K IUUP. The Excavation Permit authorized: "Installation of approximately 900 linear meters of new 12 [inch] potable and fire water lines." This permit was signed by, among others, the Design Authority/Technical Representative, ECO, Water Utilities Representative and the Facility/System Owner. Exhibit 19. The construction activities covered by this Excavation Permit commenced on April 13, 2010. Exhibit 21.

CHPRC's procedures correctly identify the contractor's Cultural Resources review compliance obligations by stating that a Cultural Resources Compliance review is required:

> . . . when a proposed activity could affect a cultural or historical property or structure, disturb a Native American artifact, or occur

> within one-quarter mile of the Columbia River. A . . . review/report shall be completed before soil disturbance.

PRC-RD-EP-15332, Sec. 2.55.3. The 100K IUUP *Functional Design Criteria* document also recognizes this requirement by stating:

> All aspects of the outdoor design shall compliment the special requirements to protect cultural resources, wildlife activities and habitat, and environment and any special requirements as identified in the Ecological/Cultural Resource Review. This will be implemented through compliance with PRC-PRO-SH-090 [replaced by DOE-0344], Excavating, Trenching, and Shoring, which requires these reviews as part of the excavating permit process.

100K Water, Electrical, and KW Basin HVAC Upgrades Functional Design Criteria, KBC-41961, Sec. 4.2.12.[18] ECOs are prohibited from signing excavation permits until all environmental approvals, include cultural resources reviews have been obtained. *See* DOE-0344, Sec. 5.3 and Appendix E, Block 11 instructions.

A Cultural Resources Review addressing the 100K raw water line was performed by DOE's Richland Operations Office Cultural Resources Program Manager, and a determination was made releasing the 100K IUUP to proceed on April 22, 2010. Exhibit 54. The April 22, 2010 authorization expressly covered the cross site raw water line (i.e., work being performed outside the fenced boundary of the 100K Area) and (inside the fence) construction of "Water filtration . . . units . . . to provide sanitary water supply for . . . trailers, portable restrooms and shower trailers." Construction activities involving disturbance of soil inside the 100K fence actually began on April 13, 2010. The Hanford Site data Cultural Resources Data Base maintained by Mission Support Alliance has been searched, and no approval (No Potential to Cause Effect determination or any other appropriate determination) for work inside the fence on the potable and fire water system has been located.

After reviewing a preliminary draft of this Report, CHPRC informed RL that the Contractor had relied upon a "blanket cultural resources review" titled "*Cultural Resources Review of Ground Disturbing Activities Associated with the Decontamination, Decommissioning and Demolition of Spent Nuclear Fuel Facilities at 100K, Hanford Site, Richland, Washington (HCRC# 2003-100-021)*," issued by PNNL on May 17, 2004 as the basis for issuing its excavation permit on March 18, 2010. The cultural resources review cited by CHPRC covered thirty-four existing buildings in the 100K Area scheduled for removal under various CERCLA remedial actions. It does not discuss any construction of new buildings. CHPRC also provided e-mail documents that establish that the 100K Area ECO verified with PNNL on March 30, 2010 (twelve days after

[18] While both the cited document and CHPRC's environmental procedure PRC-PRO-EP-15333 refer to PRC-PRO-SH-090, it cannot be found in the current lists of CHPRC Procedures. It may have been superseded by DOE-0344, Rev 2, Nov 2010, however confirming this assumption was beyond the scope of this Surveillance. None the less, this error may be an additional indicator of the inadequacy of CHPRC's quality control systems.

signing the excavation permit) that the blanket review document as still valid for its intended purposes.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F14

CHPRC did not meet contractual requirements requiring the maintenance of an active Memorandum of Understanding between CHPRC and the Hanford Fire Marshal's Office.

Requirement(s):

1. CRD O 420.1B (Supplemented Rev. 4), *Facility Safety*, Section E (3) b – "Other contractors (PRC, RCC, OccMed) must institutionalize and recognize the HFM's authority as contained in the Authority, Responsibilities, Duties, and Enforcement section of the DOE approved Hanford Fire Marshal Charter. Prime contractors performing under a different contract from under which the Fire Marshal's Office performs shall form an agreement or memorandum of understanding with the Hanford Fire Marshal to implement this authority."

2. 10 CFR 122, *Quality Assurance Criteria*, Section A.1. – The Quality Assurance Program must address the following management, performance, and assessment criteria: "Establish an organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work."

3. DOE O 414,1C, *Quality Assurance*, Attachment 2, Section 3.a.1 mandates that Management/Programs must "Establish an organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work."

Discussion:

CRD O 420.1B, Facility Safety, Supplemented, rev 4, Section E.3.b, DOE O 414.1C, Quality Assurance, Attachment 2, Section 3.a.1, and 10 CFR 122, Quality Assurance Criteria, Section a.1 requires that an active MOU exist between CHPRC and the HFMO. No active MOU exists.

The RL Supplemental Contractor Requirements Document (SCRD) 0 420.1 B delineates the general functions of the HFMO. The SCRD also references the Fire Marshal roles and responsibilities as contained in the Authority, Responsibilities, and Duties of the Hanford Fire Marshal (a.k.a. Fire Marshal Charter), and requires RL contractors to recognize and institutionalize the HFM's authority. Through the Fire Marshal Charter, issued by the RL and ORP, the HFM has the responsibility to ensure a reasonable level of fire prevention and

protection for contractors and employees on the Hanford Site. This charter states that Hanford contractors and DOE will support the HFM in the enforcement of codes and standards and execution of the HFM duties on the site. The HFM also serves as the first level of Authority Having Jurisdiction (AHJ) on behalf of the DOE.

A MOU titled *Memorandum Of Understanding, Rev. 0, Between The Hanford Fire Marshal's Office And Other Contractors With Fire Protection Engineers Designated As Deputy Fire Marshals* (CHPRC-080081) was issued on July 17, 2009, but as a result of inaction expired one year later. The MOU itemized the functions of the Hanford Fire Protection Program and distributed these functions between the HFM and the FPEs designated as a DFM and assigned to contractors. The blue sheet cover page of the MOU stated that it should be updated and re-issued in one year. The MOU between CHPRC and the HFM expired and was never reinstated.

The 100K IUUP did not recognize the authority of the HFM or CHPRC FPEs designated as a DFM, nor did they understand the different roles and responsibilities of both parties. CHPRC generated several Condition Reports (2010-3049, 2010-3373, 2010-3375, and 2010-3376) which identified the lack of understanding of the roles and responsibilities of the HFM and DFMs, as one of the causes that resulted in construction of defective design and project delays at the 100K IUUP. On April 6, 2011, a *100K Infrastructure Water Project Post-Job Lessons Review Value Management Session* was conducted. One of the path forward actions of the session was to "review/clarify and define fire protection roles and responsibilities." 100K IUUP management did not realize that an expired MOU with the HFM existed, nor did they realize the contract requirements to keep the MOU current and implemented in their company. Had the MOU been in place and implemented, many of the issues identified in this surveillance would not have taken place.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Finding: S-11-EMD-PRC-001-F15

CHPRC did not ensure that the prime subcontractor for the 100K Potable Water Treatment Facility construction site maintained a current Job Safety Analysis (JSA) and provided adequate Lockout/Tagout (LOTO) notification and briefings.

Requirement(s):

1. DOE-0336, *Hanford Site Lockout/Tagout* program.

2. DOE M 450.4-1, *Integrated Safety Management System Manual,* and CRD attached thereto.

Discussion:

CHPRC had not ensured that the prime subcontractor safety representative for the 100-K Potable Water Treatment Facility construction site had completed the training requirements of the Hanford Site LOTO program prior to start of work. Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 5.1, paragraph I. states in part, "Prior to start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RL-92-36 Rev. 1, and certification that all training is current." The RL Electrical SME asked the Grant Safety Representative in September 2010 if he was ever trained to DOE-0336, *Hanford Site Lockout/Tagout* program, and he said that he was not. The SME asked the Grant Construction Manager explain how the Safety Representative could provide adequate safety oversight of other Grant construction workers and ensure compliance to DOE-0336 if he was not knowledgeable of the associated requirements. The Manager was unable to provide an explanation.

CHPRC did not ensure that the prime subcontractor LOTO point of contact for the 100-K Potable Water Treatment Facility construction site knew when and where authorized worker tags were applied using the eight criteria per DOE-0336. DOE-0336 Section 5.13, states in part, "Designate a qualified member(s) of the Controlling Organization (CO) to be the lockout/tagout point of contact for the outside contractor for facilities that have a physical interface with an existing facility. Determine which of the following methods of lockout/tagout is to be used: Use of Authorized Worker (AW) locks and tags alone when all of the eight criteria listed below are met." The RL Electrical SME asked the Grant Safety Representative and Construction Manager if the Potable Water Treatment Facility primary disconnect was LOTO, and the SME was informed by both sources that the primary disconnect was not LOTO, but rather individual branch circuits were LOTO. During the walkthrough in September 2010 the SME observed that the primary disconnect was LOTO by two authorized worker tags. It appeared that the Grant Construction Manager (who had primary responsible for LOTO at this site) did not have good configuration control.

Contract #36534-31, ARRA-Potable Water Treatment Facility, Part 1 Statement of Work, Section 4.9, paragraph B. states in part, "The Contractor will develop and maintain a work site Job Safety Analysis in accordance with PRC-PRO-SH-40078." In September 2010, the JSA for this construction site did not identify (LOTO) as a potential hazard. The Treatment Plant had power for over three weeks, and the JSA still had the "no" block re: LOTO as a hazard. When this was brought to the attention of the Grant Safety Representative, he stated that updates to the JSA were in the construction trailer and had not yet been added to the JSA package. It was the SME's understanding that Grant has only one JSA for this construction site, and so the construction workers who had signed this JSA had performed work during the previous three weeks without an adequate JSA advising them of the LOTO hazards.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O01

CHPRC's central environmental management organization did not respond to and provide environmental compliance analysis and technical advice timely requested by the 100K Environmental Compliance Officer (ECO).

Discussion:

On June 18, 2009 the 100K Area ECO sent an e-mail message to the CHPRC NEPA SME asking for help in obtaining a NEPA activity based CX determination. This message was copied to the IUUP Project Manager as well as the CHPRC EP Manager and other relevant individuals. This message also attached an EAS Form which identified construction or modifying a public water, raw water, or export water system as part of the work activities to be completed. Exhibit 7. No response to this e-mail was returned to the 100K Area ECO from either the CHPRC NEPA SME or the CHPRC EP Manager.

On August 24, 2009, the 100K Area ECO sent a second e-mail message to the CHPRC EP Manager which states:

> I have never been involved with installing a potable water treatment system . . . so I am heading into new territory. I checked out 15333, section 5.7 (see below). I also need your help as well. Thanks. If you could get me answers by COB, Wednesday, August 26, 2009. . . .

Exhibit 8.

The ECO told the Assessment Team that he sent two e-mails on this subject to the CHPRC EP Manager, but received no response to either e-mail. Had the CHPRC EP Manager responded in a timely manner to the e-mails, it would have been more probable that all applicable environmental requirements would have been identified and complied with.

RL Lead Assessor Closure Required: YES [x] NO [ ]

Observation: S-11-EMD-PRC-001-O02

Although requested by a member of the project management team, no evidence was found suggesting that an independent QA inquiry of the 100K IUUP was done prior to moving into actual construction activities.

Discussion:

During the Assessment Team's interview with the individual occupying the role of IUUP Project Manager from November 2009 to April 2010, he stated that he verbally requested that an independent quality assurance inquiry be done of the project prior to start of construction. A review of the CHPRC Integrated Evaluation Plan (IEP) Assessment Report data base reveals that no such inquiry was ever conducted by any CHPRC QA organization. Had an inquiry been conducted, in all likelihood, it would have revealed the lack of compliance with the applicable environmental requirements. This, in turn, would have resulted in a correction of these deficiencies prior to start of construction. Unfortunately, no such inquiry occurred.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O03

CHPRC's Project Review Board process did not evaluate the 100K IUUP's environmental and fire safety regulatory compliance status prior to recommending approval to proceed with construction activities.

Discussion:

On April 7, 2010 a PRB for the 100K IUUP was conducted for work that included "Inside the Fence" activities. The materials presented to the PRB on April 7 contained no mention of applicable environmental or other regulatory requirements. Exhibit 55. Later that day, the 100K IUUP Construction Manager sent an e-mail message to the 100K IUUP Project Director stating that the PRB had approved construction. Exhibit 56. On April 21, 2010 a second PRB was convened to review 100K IUUP work scope not reviewed by the first PRB on April 7. The additional work scope included an import water line and 100K fire water and potable water supply line. As with the materials presented to the first PRB, the materials presented on April 21 contained no mention of applicable environmental or other regulatory requirements. Exhibit 57. The PRB again approved commencement of construction.

Had a regulatory requirements check list, or some other form of review or evaluation of environmental and fire safety regulatory requirements been included in the PRB review process, compliance failures might have been avoided.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Observation: S-11-EMD-PRC-001-O04

After discovering its failure to meet environmental regulatory requirements, CHPRC filed an Occurrence Report pursuant to DOE requirements, however, the Report was not timely filed, contained inaccurate information, and may not have accurately categorized the event.

Requirement(s):

1. DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information,* and CRD attached thereto.

2. DOE O 226.1A (Supp Rev A), *Implementation of Department of Energy Oversight Policy,* and CRD attached thereto.

3. DOE M 231.1-2 (Supp Rev 8), *Occurrence Reporting and Processing of Operations Information,* and CRD attached thereto.

4. DOE Contract Number DE-AC06-08RL14788, Section H.19, *Environmental Responsibility*, and Attachment J.2, *Requirements Sources and Implementing Documents*, Tables J.2.1 through J.2.8.

5. PRC-PRO-EM-060, *Reporting Occurrences and Processing Operations Information*

Discussion:

DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information (*Occurrence Reporting Manual*)*, and PRC-PRO-EM-060, *Reporting Occurrences and Processing Operations Information* specify CHPRC's occurrence reporting requirements and obligations. The requirements of DOE M 231.1-2 are a contractual obligation created by CHPRC's Contract with DOE. *See* DOE Contract Number DE-AC06-08RL14788 generally, and its Table J.2.8 more specifically.

On June 8, 2010, CHPRC filed with DOE Occurrence Report Number EM-RL-CHPRC-GENLAREAS-2010-0013 (Occurrence Report). The Occurrence Report disclosed CHPRC's discovery that it had began construction of 100K IUUP facilities without obtaining a NEPA determination from the Hanford NEPA Compliance Officer, and construction approvals required from the WDOH. Exhibit 49. The Occurrence Report lists the date of discovery of the incidents reported as June 4, 2010, characterizes the incidents as a Management Concern, and assigns a significance level of SC4.

The significance level assigned in the Occurrence Report may not be consistent with the requirements of the Occurrence Reporting Manual. RL acknowledges that when an event is classed as a Management Concern, the assignment of Significance Category level is a somewhat subjective matter that may be subject to judgment errors. The Manual defines five levels of significance to be used in occurrence reporting. More specifically, it defines category 2, 3 and 4 as follows:

> Significance Category 2. Occurrences in this category are those that are not Operational Emergencies and that have a moderate impact on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
>
> Significance Category 3. Occurrences in this category are those that are not Operational Emergencies and that have a minor impact on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
>
> Significance Category 4. Occurrences in this category are those that are not Operational Emergencies and that have some impact on safe facility operations, worker or public safety and health, public/business interests.

DOE M 231.1-2, Sec. 1.2 d., e. and f. Because the incident reported involved at least a minor impact to "regulatory compliance," it may have been appropriate to assign a significance level of at least Category 3.

For either a Significance Category 3, or 4 event, the DOE Manual requires that a written occurrence report be filed with DOE within two working days of discovery of the incident. DOE M 231.1-2, Sec. 1.4.2 (c) and (d). The Occurrence Report lists the date of discovery in the instant matter as June 4, 2010. The DOE Manual defines the date and time of discovery as:

> The discovery date and time is when the facility staff discovered or became aware of the event or condition. The facility staff is those personnel assigned to the facility and cognizant of the area in which the event or condition is identified.

DOE M 231.1-2, Sec. 13.d. CHPRC actually discovered the conditions disclosed by the Occurrence Report on or about May 18, 2010, thirteen business days before CHPRC filed its Occurrence Report. The Occurrence Report section titled "Description of Occurrence" states:

> . . . On May 18, 2010 it was determined that construction had begun prior to approval of the project report by WDOH . . . . In this case, the approval of the National Environmental Policy Act (NEPA) Categorical Exclusion (CX) submittal was determined to have not yet been obtained. . . .

Exhibit 49, p. 2, Section 15. CHPRC's knowledge as of May 18, 2010 of its failure to obtain WDOH approvals prior to commencing construction is also documented in its e-mail traffic. Exhibit 28.

A Significance Category 3 Occurrence Report must assign a cause and identify appropriate corrective action. *See* DOE 231.1-2, CRD Sec. 1.5 b. and DOE M 231.1-2, Sec. 11. Because it

was assigned a Category 4 rating, the Occurrence Report contains no information regarding a determination of cause, nor any corrective action required or taken. Exhibit 49, Items 22 and 25.

The "Description of Occurrence," Sec. 15 contained in the Occurrence Report neither fully, nor accurately discloses all relevant information regarding the incidents. While the language of Sec. 15 accurately discloses that CHPRC learned on May 18, 2010 of its failure to obtain NEPA and WDOH approvals prior to commencing construction of 100K IUUP facilities, it fails to clarify, as differing from the 200 Area project discussed in this same Sec. 15, that applications for the required approvals had also not even been made prior to commencement of construction activities. Sec. 15 also states: " . . . CX [NEPA] approval was immediately obtained, and the Project Report submitted to WDOH for approval." In fact, the Project's NEPA CX determination was not issued until May 26, 2010, and the Project Report was not submitted to WDOH until June 1, 2010. Exhibits 48 and 50 respectively.

RL Lead Assessor Closure Required: **YES [x]** **NO [ ]**

Contractor Self-Assessment: CHPRC did not perform a formal self-assessment of the issues at the 100K IUUP that eventually resulted in CHPRC Senior Management issuing a Stop Work. The Assessment team concluded that the Contractor's self-assessment activities at the 100K IUUP were generally ineffective.

Contractor Self-Assessment Adequate: **YES [ ]** **NO [x]**

Contractor Management To Be Briefed:

CHPRC President
CHPRC Vice-President, Environmental Protection and Strategic Planning
CHPRC Vice-President, Safety

S-11-EMD-PRC-001

INDEX OF EXHIBITS

Exhibit-1	*Letter*, W.A. Rutherford, Director, Site Infrastructure Division, Department of Energy, Richland Operations Office, to President Westinghouse Hanford Company, HANFORD DRINKING WATER SYSTEMS, April 11, 1995	Page 60
Exhibit-2	*E-mail*, Douglas E. (Doug) Wertz, to Colburn E. Kennedy, cc: Bruce R. Johns, Walter J. (John) Geuther, Douglas C. (Doug) Bragg, VE SESSIONS – 100K AREA UTILITIES, April 13, 2009	Page 61
Exhibit-3	*E-mail*, Colburn E. Kennedy, to Douglas E. (Doug) Wertz, cc: Richard A. Harrington, RE: VE SESSIONS – 100K AREA UTILITIES, April 16, 2009 @ 9:47 AM	Page 61
Exhibit-4	*E-mail*, Douglas E. (Doug) Wertz, to Colburn E. Kennedy, RE: VE SESSIONS – 100K AREA UTILITIES, April 16, 2009 @ 10:03 AM	Page 61
Exhibit-5	*E-mail*, Christine E. Sumner, to Richard A. Harrington, Colburn E. Kennedy, Scott W. Story, Christopher Lucas, Michael R. Koch, Steven Moore, Scott (EU) Baker, Susan K. Omberg Carro, Jay R. Mills, John R. Parker, Timothy J. Davison, Steven N. Balone, Randall N Krekel, Mike Swartz, Douglas E. (Doug) Wertz, Steven P. Burke, Mark A. Wright, David B. Anderson, Floyd M. Maiden, Alastair J. MacDonald, colburn.kennedy@ch2m.com, 100K Infrastructure Project Charter Workshop, Undated	Page 62
Exhibit-6	*Project Scope Statement Sheet – 100K Infrastructure Project Charter Workshop*, May 5-6, 2009	Page 65

Exhibit-7	*E-mail with EAS form Attachment*, Brett M. Barnes, to Michael T. Jansky, cc: Darrell J. Riffe, Colburn E. Kennedy, Scott W. Story, David J. (Dave) Watson, Richard H. Engelmann, ACTIVITY – SPECIFIC CX FOR THE REROUTING OF 100K BASIN UTILITIES AND HVAC, June 18, 2009	Page 66
Exhibit-8	*E-mail*, Brett M. Barnes, to Richard H. Engelmann, FW: 100K Follow Up, August 24, 2009	Page 71
Exhibit-9	*Meeting Notes*, Sam E. Wajeeh, to Steve Moore (CHPRC), Sam Wajeeh (CHPRC), Tom Ashley (ARES), Elizabeth Bowers (DOE), Brett Barnes (CHPRC), Mike Wilson (DOH), New Water Treatment System for the 100K Basin, October 6, 2009	Page 73
Exhibit-10	*E-mail*, Elizabeth M. (Liz) Bowers, to Steven N. Balone, cc: Michael R. Koch, Dickie J. Ortiz, Thomas K. Teynor, Usama E. Wajeeh, Colburn E. Kennedy, RE: Meeting with Department of Health on Proposed Water Plant, October 7, 2009	Page 75
Exhibit-11	*PRC-PRO-AC-123, Requesting Materials and Services, Attachment 5, Functional & Project Concurrence Checklist*, See Exhibit 12 for date	Page 76
Exhibit-12	*E-mail*, Laurie L. Lafferty, to Scott W. Story, cc: David E. Fink, RE: Attachment 5 APPROVALS, December 21, 2009 @ 1:06 PM	Page 92
Exhibit-13	*E-mail, Scott W. Story, to Laurie L. Lafferty,* RE: Attachment 5 APPROVALS, December 21, 2009 @ 1:55 PM	Page 92

Exhibit-14	*E-mail*, Usama E. Wajeeh, to Brett M. Barnes, cc: Scott W. Story, David E. Fink, Colburn E. Kennedy, 100K Water Infrastructure Project-Potential Project Risk, December 16, 2009 @ 1:50 PM	Page 93
Exhibit-15	*E-mail*, Brett M. Barnes, to Dottie L. Norman, cc: Scott W. Story, David E. Fink, Colburn E. Kennedy, Usama E. Wajeeh, Jennie R. Seaver, RE: 100K Water Infrastructure Project-Potential Project Risk, December 16, 2009 @ 2:20 PM	Page 93
Exhibit-16	*Letter with Attachment*, John G. Lehew, President and Chief Executive Officer CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, REQUEST FOR WAIVER OF PILOT STUDY FOR NEW 100K POTABLE WATER FACILITY, January 11, 2010	Page 95
Exhibit-17	*Letter*, John D. Phillips, Contract Specialist CH2MHILL Plateau Remediation Company, to Watts, Construction, Inc., CONTRACT NUMBER 36538 100-K RIVER WATER ISOLATION PROJECT IMPORT WATER LINE NOTICE TO PROCEED, January 28, 2010	Page 106
Exhibit-18	*Letter*, Michael D. Wilson, PE Regional Engineer Washington State Department of Health, to Usama E. Wajeeh, CH2M Hill Plateau Remediation Company, Subject: Energy, Dept of/100K; PWS ID # 00177J; Benton County Justification to Avoid Pilot Study for New 100K Potable Water Facility DOH Project #10-0207A, February 17, 2010	Page 107
Exhibit-19	*CHPRC HANFORD SITE EXCAVATION PERMIT*, Brett M. Barnes et al, March 18, 2010	Page 109

Exhibit-20	*Letter, Noreen A. Clifford, Contracting Officer CH2MHILL Plateau Remediation Company, to George A. Grant, Inc.,* CONTRACT NUMBER 36534-31 ARRA – POTABLE WATER TREATMENT FACILITY CONTRACT AWARD DOCUMENTS TRANSMITTAL, April 7, 2010	Page 110
Exhibit-21	*CHRPC-CONSTRUCTION DAILY ACTIVITY REPORT,* Klint Johnson, Import waterline and 100K FW&PW lines, April 13, 2010	Page 119
Exhibit-22	*CHPRC-CONSTRUCTION DAILY ACTIVITY REPORT,* Klint Johnson, Import RAW waterline, April 28, 2010	Page 122
Exhibit-23	*EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS Compiled from IDMS, April 5, 2011*, Week Ending February 12, 2010 to Week Ending March 25, 2011	Page 125
Exhibit-24	*Meeting Summary*, Brian Dixon, Meeting with Washington State Department of Health Office of Drinking Water, Spokane Washington May 18, 2010, May 18, 2010	Page 146
Exhibit-25	*Root Cause Analysis Report*, EN Dodd III, PW Martin, DP Kimball, VM Pizzuto, Root Cause Analysis Report Potential Adverse Trend-Environmental Regulatory Requirements for Construction Projects Not Met EM-RL-CPRC-GENLAREAS-2010-0013, October 19, 2010	Page 148
Exhibit-26	*E-mail*, Max L. Edington, to Kurtis L. Kehler, cc: Colburn E. Kennedy, Dottie L. Norman, Usama E. Wajeeh, 100 K Water System Replacement Project, May 18, 2010 @ 3:33 PM	Page 165
Exhibit-27	*Letter*, John G. Lehew III President and Chief Executive Officer CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, SUBMITTAL OF PROJECT REPORT FOR 100K	Page 166

POTABLE WATER FACILITY, June 1, 2010

Exhibit-28 *E-mail*, Moses Jaraysi, to John G. Lehew, Kurtis L. Kehler, Colburn E. Kennedy, cc: Allan E. Cawrse, FW: Fire System Applicability, June 2, 2010 Page 167

Exhibit-29 *E-mail*, Usama E. Wajeeh, to Colburn E. Kennedy, cc: Allan E. Cawrse, Kurtis L. Kehler, Dottie L. Norman, Max L. Edington, FW: Discussion with Mike Wilson (WDOH) Regarding 100K Project Report Submittal, June 7, 2010 Page 170

Exhibit-30 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh PE CH2MHILL, Energy, Dept Of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System Project Report ; DOH Project # 10-0207B, June 16, 2010 Page 171

Exhibit-31 *Letter*, Max L. Edington, Project Manager 100K D&D CH2MHILL Plateau Remediation Company, to M.D. Wilson Regional Engineer, Washington State Department of Health, SUBMITTAL OF CONSTRUCTION DOCUMENTS FOR 100K POTABLE WATER FACILITY, June 23, 2010 Page 172

Exhibit-32 *Letter*, Michael D. Wilson, Regional Engineer Washington State Department of Health, to Usama E. Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System Project Report; DOH Project #10-0207B, July 8, 2010 Page 173

Exhibit-33 *Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy,Dept Of/100K; PWS ID #00177J; Benton County Construction Documents For 100K Potable Water Facility; DOH Project # Page 175

10-0207C, July 22, 2010

Exhibit-34	*Letter*, Max L. Edington, Project Manager 100K D&D CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, SUBMITTAL OF WDOH PROJECT REPORT COMMENT RESPONSE FOR 100K POTABLE WATER FACILITY, July 22, 2010	Page 176
Exhibit-35	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Potable Water Facility Construction Documents DOH Project #10-0207C, August 3, 2010	Page 178
Exhibit-36	*Letter,* Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID #00177J; Benton County 100K Area Water Treatment System; DOH Project #10-0207B; APPROVAL, August 5, 2010	Page 181
Exhibit-37	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to Usama Wajeeh, PE CH2MHILL Plateau Remediation Company, Energy, Dept of/100K Potable Water Facility; DOH Project #10-0207C APPROVAL, September 15, 2010	Page 182
Exhibit-38	*Letter*, Max L. Edington, Area Manager 100K D4 CH2MHILL Plateau Remediation Company, to M.D. Wilson, Regional Engineer Washington State Department of Health, Department of Energy 100K Water Treatment Facility PWS ID# 00177J; Benton County; Operational Performance Testing Report; DOH Project #10-0207D,	Page 183

January 27, 2011

Exhibit-39	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept Of/100K; PWS ID #00177J; Benton County OTP Report; DOH Project # 10-0207E, February 1, 2011	Page 184
Exhibit-40	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept of/100K; PWS ID # 00177J; Benton County Operational Performance Testing Report; DOH Project #s 10-0207D-10-0207E APPROVAL, February 18, 2011	Page 185
Exhibit-41	*Letter*, Michael Wilson, Regional Engineer Washington State Department of Health, to M.L. Edington, Area Manager CH2MHILL Plateau Remediation Company, Energy, Dept Of/100K; PWS ID #00177J; Benton County Operational And Maintenance Manual; DOH Project # 11-0313, March 10, 2011	Page 186
Exhibit-42	*E-mail,*, Michael Wilson / EH (DOH), to Max L. Edington, Steven Moore, FW: Energy, Dept of/100K; PWS ID #00177, Benton County: Membrane WTP Start-Up Approval, March 16, 2011	Page 187
Exhibit-43	*E-mail*, Dottie L. Norman, to Brett M. Barnes, Scott W. Story, FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018, April 23, 2010 @ 12:17 PM	Page 189
Exhibit-44	*E-mail*, Brett M. Barnes, to Michael T. Jansky, FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC #2009-600-018, April	Page 189

26, 2010 @ 7:25 AM

Exhibit-45	*E-mail*, Michael T. Jansky, to Brett M. Barnes, Dottie L. Norman, RE: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRD#2009-600-018, April 26, 2010 @ 7:45 AM	Page 189
Exhibit-46	*E-mail*, Michael T. Jansky, to Michael T. Jansky, Woody Russell, RE: CX FOR K AREA Utilities Reroute, May 24, 2010 @ 6:39 AM, and *e-mail*, Michael T. Jansky, to Woody Russell, CX FOR K AREA Utilities Reroute, April 28, 2010 @ 12:27 PM	Page 190
Exhibit-47	*E-mail*, Michael T. Jansky, to Woody Russell, RE: CX FOR K AREA Utilities Reroute, May 25, 2010 @ 6:15 AM	Page 190
Exhibit-48	*Categorical Exclusion for 100 K Area Utilities Reroute Hanford Site, Richland, Washington (an attachment to Exhibit 46)*, April 28, 2010	Page 192
Exhibit-49	*Occurrence Report EM-RL-CPRC-GENLAREAS-2010-0013*, June 8, 2010	Page 200
Exhibit-50	*EPC-40524, Rev. 1 100K Infrastructure Project Execution Plan*, July 29, 2010	Page 204
Exhibit-51	*INTEROFFICE MEMORANDUM with Attachment FINAL REPORT, INDEPENDENT ASSESSMENT OF ENGINEERING, PROJECTS AND CONSTRUCTION, CHPRC-PO-IA-10-02*, S.J. Turner, Manager of Performance Oversight CH2MHILL Plateau Remediation Company, to K.A. Dorr, EPC CH2MHILL Plateau Remediation Company, April 14, 2010	Page 253

Exhibit-52	*CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-1080*, Bonnie S. Harder Initiator, Deficiencies were identified in the implementation of the Project Execution Plan (PEP) process as required by PRC-PRO-PM-24889, Project Initiation and Execution, April 13, 2010	Page 289
Exhibit-53	*E-mail*, Daniel P. Kimball, to ^CHPRC Corrective Action Management, CR-2010-1080 Corrective action # 3, June 30, 2010	Page 292
Exhibit-54	*E-mail*, Annabelle L. Rodriquez, to Scott W. Story, Colburn E. Kennedy, cc: Steven N. Balone, Thomas K Teynor, Annabelle L. Rodriquez, Ellen L. Prendergast-Kennedy, April 22, 2010	Page 189
Exhibit-55	*Presentation*, Dave Fink, to 100-K Utility Upgrades Project PRB for: Inside the Fence Water Lines task 1, 105 KW Fire Water Supply Line, A9 Switch Yard Preparation, April 7, 2010	Page 293
Exhibit-56	*E-mail*, David E. Fink, to Kurtis L. Kehler, Colburn E. Kennedy, cc: Kent A. Dorr, Stephen R. Douglass, Good News the PRB Approved the following for Construction with Attachment image001.png, April 7, 2010 @ 3:20 PM	Page 315
Exhibit-57	*Presentation*, Dave Fink, to 100-K Utility Upgrades Project, April 21, 2010	Page 316
Exhibit-58	*E-mail*, Gregory Morgan, to Gail A. Chaffee, cc: Thomas Teynor, Alan L. Ramble, Calvin E. Morgan, Roger Quintero, Mark W. Jackson, Burton E. Hill, Dale C. West, Michael R. Koch, Dennis A. Clapp, FW: USQ in Support of New Water System, April 14, 2011 @ 3:27 PM, and *e-mail*, Gail A. Chaffee, to Gregory Morgan, cc: Thomas Teynor, Alan l. Ramble, Calvin E. Morgan, Roger Quintero, Mark Jackson,	Page 351

Burton Hill, Dale West Michael R. Koch, Dennis (CONTR), Richard E. Raymond, RE: USQ in Support of New Water System, April 14, 2011 @ 4:04 PM

Exhibit-59 *CRPRC-REVIEW COMMENT RECORD (RCR)*, Reviewers Susan Omberg Carro, Sam Wajeeh, Adam Moldovan, Richard Larson, 90% Design Review 100K Project, October 23, 2009 Page 356

Exhibit-60 *CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-2597*, Susan Omberg Carro Initiator, Installation of Fire Suppression System Without Required Design Approval, August 24, 2010 Page 371

Exhibit-61 *CHPRC CONDITION REPORT FORM CR NUMBER: CR-2010-3049*, Don Eide Initiator, 100K- Fire Suppression System Field Work Stop Work (ARRA): SAC-2010-1169, September 29, 2010 Page 373

Exhibit-62 *CHPRC CONTRACTOR DOCUMENT SUBMITTAL FORM*, Lisa Smyser CHPRC Project Records Specialist, 100K Potable Water Treatment Facility Contract No. 36534 Release No. 031, Submittal Register No. 13125-02, Version 03, August 31, 2010 Page 379

EXHIBIT 1

15C

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

APR 11 1995

President
Westinghouse Hanford Company
Richland, Washington

Dear Sir:

HANFORD DRINKING WATER SYSTEMS

The U.S. Department of Energy, Richland Operations Office (RL) is the owner of several Group A and Group B water systems, and Westinghouse Hanford Company and ICF Kaiser Hanford Company operate the water systems for RL. The purpose of this letter is to clearly state that the water systems on the Hanford Site are subject to the State of Washington Department of Health Drinking Water Regulations under Washington Administrative Code and the water systems will operate in accordance with these regulations. These regulations apply to the operation of the drinking water systems as well as to construction/modification on any system.

Should you have questions, please contact Mr. D. J. Ortiz, of my staff, at 376-0950.

Sincerely,

W. A. Rutherford, Director
Site Infrastructure Division

SID:DJO

cc: J. L. Day, ICF KH
S. E. Dieterle, ICF KH
J. U. Greenough, ICF KH
C. D. Lucas, WHC
P. I. Thakkar, ICF KH
C. A. Thompson, WHC

PLEASE COPY

Need 3 Copies

Send Copies To:
Watson
Cherri Arthur Price
Nowicki

Original:
☐ Send To: ____
☒ File Under: Water Plant
☐ ____

Post-it® 7670 GSM 1990

EXHIBIT 2 EXHIBIT 3 EXHIBIT 4

Kennedy, Colburn E

	Wertz, Douglas E (Doug)
	Thursday, April 16, 2009 10:03 AM
	Kennedy, Colburn E
Cc:	Harrington, Richard A
Subject:	RE: VE SESSIONS - 100K AREA UTILITIES

Ok: let's go! I will send a list of invitees. We will use two charge numbers: 50% of time to each. 301964, and 301965.

You are authorized to charge time to these numbers.

From: Kennedy, Colburn E
Sent: Thursday, April 16, 2009 9:47 AM
To: Wertz, Douglas E (Doug)
Cc: Harrington, Richard A
Subject: RE: VE SESSIONS - 100K AREA UTILITIES

Doug

I talked with Richard and he is available for conducting a Project Charter Workshop to make sure all parties are in agreement on 100K Electrical/Water/Ventilation Project approach before we get this project kicked off.

Here is the proposal

1. Hold a 1 day meeting with a select group of managers.
2. Objective will be to
    a. Scope work
    b. Define Schedule and Basis
    c. Determine Implementation Approach (subcontract/self perform)
    d. Review ROM cost
    e. Define where improvements can be made
3. Meeting can be scheduled for 4/27 through May 8. Need decision by 4/22 to book room.
4. Meeting to held offsite at a location to be determined later
5. Meeting will involve working through lunch (lunch provided)

We need a charge number to start getting this taken care of.

From: Wertz, Douglas E (Doug)
Sent: Monday, April 13, 2009 10:38 AM
To: Kennedy, Colburn E
Cc: Johns, Bruce R; Geuther, Walter J (John); Bragg, Douglas C (Doug)
Subject: VE SESSIONS - 100K AREA UTILITIES

Colburn: a couple candidates from STP to attend. Do you want me to reserve a room for the VE sessions?

Bruce Johns and John Geuther.

Thanks

ug Wertz
2-8168

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1 2, 4

EXHIBIT 5

Kennedy, Colburn E

Subject:	100K Infrastructure Project Charter Workshop
Location:	WSU-CIC, Room 212
Start:	Wed 5/6/2009 7:00 AM
End:	Wed 5/6/2009 12:00 PM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Sumner, Christine E
Required Attendees:	Harrington, Richard A; Kennedy, Colburn E; Story, Scott W; Lucas, Christopher; Koch, Michael R; Moore, Steven; Baker, Scott (EU); Omberg Carro, Susan K; Mills, Jay R; Parker, John R; Davison, Timothy J; Balone, Steven N; Krekel, Randall N
Optional Attendees:	Swartz, Mike; Wertz, Douglas E (Doug); Burke, Steven P; Wright, Mark A; Anderson, David B; Maiden, Floyd M; MacDonald, Alastair J; colburn.kennedy@ch2m.com

Team,

On behalf of Colburn Kennedy, Richard Harrington and myself, your participation is requested at the 100K Infrastructure Project Charter Workshop on Tuesday, May 5th from 7:30 to 4:30, at the WSU-CIC in the second floor conference room 214 (see map attached). In brief the objective of this workshop is to establish a foundation and path forward to develop the schedule, project estimate, and an integrated approach to achieve project delivery. Please note that while this effort is planned for a one-day workshop, we have reserved the conference room for the morning of the next day if required.

Attached is the workshop scope statement sheet and agenda, as well as a map for the WSU Campus. Lunch, along with morning coffee and a light snack will be provided. Looking forward to your active participation and a successful outcome.

Thanks –

Christine Sumner for
Richard Harrington

100K Infrastructure Project Ch...

WSU Campus.jpg

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5

100K INFRASTRUCTURE PROJECT WORKSHOP
WSU-CIC, Conference Room 214
May 5-6, 2009

AGENDA

Day 1, Tuesday, 05/05/09

7:30 - Welcome/Purpose, Safety Topic, Introductions (Project Roles and Responsibilities)
- Review Agenda, Guidelines and Expectations

8:00 - Opening Remarks and Project Overview
- Clarify four major components, needs, and project roles and responsibilities

8:30 - 1. Power Isolation
- Confirm scope, approach, needs, schedule, and cost basis
- Utilize parking-lot sheets, as required

9:15 - **BREAK**

9:30 - 2. River Water Infrastructure Isolation and 3. Closure Support Facilities
- Confirm scope, approach/needs, schedule, and cost basis
- Utilize parking-lot sheets, as required

11:45 - **LUNCH (provided)**

12:30 - 4. West Basin Airborne Contamination
- Confirm scope, approach/needs, schedule, and cost basis
- Utilize parking-lot sheets, as required

1:30 - Develop Project Logic Diagram and Approach
- Define major functions and apply logic
- Identify key interfaces (system and people) and schedule milestone

2:30 - **BREAK**

2:45 - Complete Project Logic Diagram and Approach
- Solidify logic and define method of performance
- Identify Project Execution Plan (PEP) needs and inputs

3:45 - Develop Path Forward Implementation Plan
- Review/validate parking-lot information sheets
- Finalize actions required to proceed
- Determine need to reconvene on day 2

4:30 - Round-Robin Close-out
- Last minute items/meeting utility

SCOPE

- **100K Infrastructure Project Charter:**
  - Scope, schedule, cost estimate basis, roles and responsibilities, key interfaces and requirements, and method of performance:
    - Power Isolation
    - Closure Support Facilities
    - River Water Infrastructure Isolation
    - West Basin Airborne Contamination

OBJECTIVES

- **Establish a foundation and path forward to develop the schedule, project estimate, and an integrated approach to achieve project delivery**
  - Solidify scope
  - Define schedule and cost basis inputs
  - Determine implementation approach
  - Identify potential improvement areas/concepts
- **Obtain consensus and build project team approach**

DELIVERABLES

- Documented flipchart listing of the scope and objectives details
- Method of performance and key interfaces (e.g. Mission Support Contract)
- Overall path forward implementation action plan

EXHIBIT 6

PROJECT SCOPE STATEMENT SHEET

Project Title: 100K Infrastructure Project Charter Workshop No. 001
Workshop Location: WSU-CIC, Room 214 Date: 05/05-06/09

TEAM MEMBERS

NAME	PHONE	DISCIPLINE	CO.
C.E. (Colburn) Kennedy (TL)	376-3152	Project Manager	CHPRC
S.W. (Scott) Story	376-4017	Project Construction Manager	FFS
C.D. (Chris) Lucas	373-1006	Operations	CHPRC
M.R. (Mike) Koch	373-2699	100K Engineering	CHPRC
S. M. (Steve) Moore	373-2567	Balance of Plant Water	CHPRC
S.M. (Scott) Baker	373-2028	Electrical Utilities	FH
S.K.(Susan) Omberg Carro	376-3202	Fire Protection	FFS
J.R. (Jay) Mills	373-2946	Project Schedule	FFS
J.R. (John) Parker	376-2695	Project Estimate	PSG
T.J. (Tim) Davison	376-2284	Project Execution Plan	CHPRC
S. (Sam) Wajeeh	37———	Water System Engineer	ENREP
S.N. (Steve) Balone	376-0236	Project Representative	DOE-RL
R.N. (Randall) Krekel	376-4264	Electrical	DOE-RL

TL = Team Leader

PART-TIME SUPPORT MEMBERS

M.M. (Mike) Swartz	373-0078	100K Project Management	CHPRC
D.E. (Doug) Wertz	372-8168	Project Control	CHPRC
S.P. (Steve) Burke	373-9034	K-West Operations	CHPRC
M.A. (Mark) Wright	376-4153	Work Control	CHPRC
D.B. (Dave) Anderson	376-0094	Construction Management	FFS
F.M. (Floyd) Maiden	373-2236	Electrical Engineering	AREVA
A.J. (Alastair) MacDonald	376-4599	Management Support	CHPRC

FACILITATORS

R.A. (Richard) Harrington	372-9601	Value Engineering	CHPRC
C.E. (Christine) Sumner	372-3692	Value Engineering	CHPRC

EXHIBIT 7

Barnes, Brett M

From:	Barnes, Brett M
Sent:	Thursday, June 18, 2009 11:23 AM
To:	Jansky, Michael T
Cc:	Riffe, Darrell J; Kennedy, Colburn E; Story, Scott W; Watson, David J (Dave); Engelmann, Richard H
Subject:	ACTIVITY-SPECIFIC CX FOR THE REROUTING OF 100 K BASIN UTILITIES AND HVAC
Attachments:	0618111226.pdf; 0618111241.pdf

Good Morning Mike,

Attached is a draft environmental activity screening form and supporting documentation for the rerouting of the 100 K utilities (e.g., water and electrical) and the installation of an HVAC system to the 100 K basin to provide for an increase in personnel comfort while performing work in the basins.

Because this is stimulus funded...we will need to obtain a activity-specific CX for our NEPA coverage.

The first attachment is the screening form, Attachment A and A1.

The second attachment A2.

Both constitute a complete package.

Scott Story is working on a statement of work for PNNL to come and do our CERR.

Should you have any questions, please give me a call on my cell phone. If you would like to meet to discuss and/or revise the form...please let me know. Thank you. Please let me know a schedule as to when we can get the activity-specific CX. Thank you.

Brett M. Barnes, CHMM
Environmental Compliance Officer, CHPRC, K Basins

Work: (509)376-3640/Cell: (b)(6)

President, Mid-Columbia Leadership Development Association, NMA Chapter #395

ENVIRONMENTAL-ACTIVITY SCREENING FORM

SECTION A. Work Description

Title and Summary (include a detailed summary):

See Attachment A.

Identification No. (e.g., Project No., Work Plan No., Work Order No.): To Be Determined	Date: 6/18/2009	Revision No.:

SEE FOLLOWING PAGES FOR SECTIONS B AND E

SECTION C. Work Management Applicability

- [x] The work is covered under existing NEPA Documentation (see Sections B-2 and B-3).
- [ ] The work is covered under existing CERCLA Documentation (see Section B-4).
- [x] Screening showed no new environmental documents, approvals, or other actions are needed.
- [ ] Screening showed the following new environmental documents, approvals, or other actions are needed (list):

SECTION D. Approvals	Name (Printed)	Signature	Date	Form Disposition
Initiator				MAINTAIN A COPY IN THE APPLICABLE PROJECT FILE OR WORK PACKAGE
Concurrence (Cognizant Environmental Compliance Officer [ECO], FH Environmental Regulatory Integration [ERI] Representative, 2-Day NEPA Trained Individual):	Brett M. Barnes, CHMM			

A-6003-727 (REV 1)

ENVIRONMENTAL-ACTIVITY SCREENING FORM

ECTION B. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)/CULTURAL AND/OR ECOLOGICAL RESOURCES/COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND JABILITY ACT (CERCLA)

B-1. CULTURAL AND/OR ECOLOGICAL RESOURCE EVALUATION	Yes	No
Vill work affect cultural and/or ecological resources, as described in HNF-'RO-15335, *Environmental Permitting and Documentation Preparation*, Section 5.1 (e.g., ultural artifacts, wetlands, historical facility, aquifers, Hanford Reach National Monument, areas within 1/4 mile of Columbia River)?	☒	☐
' all answers are NO, go to B-2. ' any answer is YES, list the cultural and/or ecological review and/or excavation permit umber that applies. :ultural Review To Be Developed :cological Review ECR- To Be Developed :xcavation Permit No. To Be Developed Go to B-2, unless adverse impacts are identified. If adverse impacts are identified, go B-3.		

B-2. SITEWIDE CATEGORICAL EXCLUSION (SWCX) APPLIES	Yes	No
s the work covered by a SWCX?	☐	☒
' YES, list SWCX that applies _____ nd go to B-5. If NO, go to B-3.		

B-3. SITEWIDE CATEGORICAL EXCLUSION (SWCX) DOES NOT APPLY	Yes	No
Does other DOE-approved NEPA documentation apply for this activity?	☒	☐
' YES, list document number that applies: DOE/EA- _____ DOE/EIS- _____ Other Activity-Specific CX ' *CX or EA preparation is needed, contact FH Environmental Regulatory ntegration (ERI): 376-1554.*		

B-4. CERCLA RESPONSE ACTION	Yes	No
*Is the work covered by CERCLA documentation? Doc. No./Title _____	☐	☒
If the answer is NO, go to Section B-5. ***Note: Although work performed under CERCLA does not require separate NEPA documentation, such work is limited to activities that directly support the response action identified in the associated CERCLA documentation. Actions planned at, or adjacent to, CERCLA facilities that are not within the scope of the CERCLA documentation must be reviewed separately under the NEPA process.*** ***If assistance is needed to coordinate a NEPA analysis, or to incorporate NEPA values into CERCLA documentation, contact FH ERI: 376-1554.***		

B-5. INTEGRAL ELEMENTS	Yes	No
Section E is provided as an optional tool to assist in answering the following Integral Element questions:		
Will work threaten to violate environmental laws, regulations, permits, or safety requirements?	☐	☒
Will hazardous substances be disturbed allowing uncontrolled/unpermitted releases?	☐	☒
If either answer is YES, contact the Cognizant Environmental Compliance Officer (ECO). If both answers are NO, print form and complete approvals. ***If assistance is needed to determine applicability of Section E activities, and/or impacts of these activities, contact the Cognizant ECO.***		

A-6003-727 (REV 1)

ENVIRONMENTAL-AC...ITY SCREENING FORM

SECTION E. Activity Screening Select the activities that apply to the workscope. Refer to HNF-PRO-15333, *Environmental Protection Processes*, Section 5.0, for Category Applicability Statements.

Performing Project Scoping Activities and Siting Studies

- [x] 5.2 Performing Project Scoping Activities and Siting Studies

Constructing or Modifying Facilities, Equipment, or Processes

- [ ] 5.3 General
- [ ] 5.4 Constructing or Modifying Stationary Criteria/Toxic Air Emission Sources
- [ ] 5.5 Constructing or Modifying Air Emission Units That Potentially Emit Radionuclides to the Ambient Air
- [ ] 5.6 Constructing or Modifying RCRA TSD Units
- [x] 5.7 Constructing or Modifying Public Water, Raw Water, or Export Water Systems
- [ ] 5.8 Constructing or Modifying Sanitary Sewer Systems, or Constructing or Modifying Onsite Sewage Systems, or Adding or Modifying Discharges to the Columbia River, or Discharges to the Land
- [ ] 5.9 Constructing or Modifying Storage Tanks or Container Storage Areas That Store Oil
- [ ] 5.10 Installing Regulated USTs
- [ ] 5.11 Relocating Portable Criteria Pollutant Air Emission Sources, or Bringing Portable or Stationary Criteria Air Pollutant Emission Source Onto the Site

Operating Facilities, Equipment, or Processes

- [ ] 5.12 General
- [ ] 5.13 Operating Facilities, Equipment, or Processes That Emit Criteria/Toxic Air Pollutants
- [ ] 5.14 Operating Stationary Facilities and Equipment That Potentially Emit Radionuclides to the Ambient Air
- [ ] 5.15 Operating Regulated USTs
- [ ] 5.16 Operating Onsite Sewage Systems
- [ ] 5.17 Operating Storage Tanks or Container Storage Areas That Store Oil
- [ ] 5.18 Operating Public Water Systems
- [ ] 5.19 Operating Interim Status RCRA TSD Units
- [ ] 5.20 Operating Final Status RCRA TSD Units
- [ ] 5.21 Using Portable or Temporary Air Emission Sources That Emit Radionuclides
- [ ] 5.22 Using PCB Oil-Filled Electrical Equipment, Electromagnets, Switches, and Voltage Regulators
- [ ] 5.23 Using and Storing Chemicals, Chemical Products, and Hazardous Materials
- [ ] 5.24 Performing Operations Consistent With NEPA Routine Administrative Activities
- [ ] 5.25 Finding Special Status Animals or Plants (Live or Dead) on the Hanford Site
- [ ] 5.26 Responding to Regulatory Agency Inspections

Maintaining and Repairing Facilities, Equipment, or Processes

- [ ] 5.27 General
- [ ] 5.28 Maintaining Stationary Facilities and Equipment That Potentially Emit Radionuclides to the Ambient Air
- [ ] 5.29 Maintaining or Repairing Major Continuous Emissions Monitoring or Emissions Measurement Systems

Maintaining and Repairing Facilities, Equipment, or Processes - Continued

- [ ] 5.30 Maintaining and Testing HEPA Filters
- [ ] 5.31 Starting Up, Shutting Down, or Performing Scheduled Maintenance on Stationary Air Emissions Sources
- [ ] 5.32 Repairing an Onsite Sewage System / Maintaining UIC Stormwater Well
- [ ] 5.33 Reporting New WIDS Sites and Reclassifying or Reassigning WIDS Sites
- [ ] 5.34 Maintaining Assigned WIDS Sites, Including Assessing Potential Impacts
- [ ] 5.35 Servicing "Motor Vehicle Air-Like" Conditioners
- [ ] 5.36 Maintaining, Servicing, or Repairing Stationary Heating, Ventilation, Air Conditioning, and Refrigeration Equipment
- [ ] 5.37 Performing Activities That May Break Up, Disturb, or Preclude Access to Regulated Asbestos-Containing Material
- [ ] 5.38 Removing and/or Disturbing Asbestos-Containing Material (i.e., Renovation)
- [ ] 5.39 Repairing Regulated USTs
- [ ] 5.40 Applying and Storing Pesticides
- [ ] 5.41 Conducting Open Burning
- [ ] 5.42 Decontaminating Materials and Equipment Contaminated with PCBs

Discontinuing Use of, DD&D, or Closing Facilities (Including Trailers), Equipment, or Processes

- [ ] 5.43 General
- [ ] 5.44 Temporarily Closing Regulated USTs
- [ ] 5.45 Permanently Closing Regulated USTs or Making a Change in Service
- [ ] 5.46 Closing RCRA TSD Units
- [ ] 5.47 Discontinuing Use of or Relocating a Satellite Accumulation Area
- [ ] 5.48 Discontinuing Use of or Closing a 90-Day Accumulation Area
- [ ] 5.49 Closing or Removing a Septic Tank From Service
- [ ] 5.50 Performing CERCLA Response Actions (HNF-PRO-25415)
- [ ] 5.51 Discontinuing Use of or Closing Injection Wells

Purchasing Goods or Services

- [ ] 5.52 Purchasing Refrigerants, Appliances Containing Refrigerants, System Components That Operate Using Refrigerants, or Refrigerant Recovery or Recycling Equipment
- [ ] 5.53 Procuring Pesticides or Pesticide Applicators
- [ ] 5.54 Procuring HEPA Filters

- [x] 5.55 Excavating or Otherwise Disturbing Soils

- [ ] 5.56 Environmental Event Notification (Including Spills and Releases and Agency Notifications)

A-6003-727 (REV 1)

ENVIRONMENTAL-ACTIVITY SCREENING FORM

SECTION E (continued). Activity Screening Select the activities that apply to the workscope. Refer to HNF-PRO-15333, *Environmental Protection Processes*, Section 5.0, for Category Applicability Statements.

Generating, Identifying, and Designating Waste

- [x] 5.57 Generating Waste
- [ ] 5.58 Identifying and Designating Waste
- [ ] 5.59 Generating Investigation Derived Waste Within a Waste Site or Suspected Waste Site
- [ ] 5.60 Generating Investigation Derived Waste Outside a Waste Site
- [ ] 5.61 Identifying and Designating Investigation Derived Waste

Managing, Accumulating, or Storing Waste or Materials

- [ ] 5.62 Managing Soil, Groundwater, and Debris Contaminated With Listed Dangerous Waste
- [ ] 5.63 Managing Waste Characterization and Treatability Study Samples and Their Residues
- [ ] 5.64 Managing Unknown Waste
- [ ] 5.65 Managing Materials With Potential Future Use
- [ ] 5.66 Accumulating Waste in a Satellite Accumulation Area
- [ ] 5.67 Accumulating Waste in a 90-Day Accumulation Area
- [ ] 5.68 Storing PCB Items For Reuse
- [ ] 5.69 Storing PCB Waste and PCB Items For Disposal
- [ ] 5.70 Storing Asbestos Waste
- [ ] 5.71 Storing Investigation Derived Waste

Treating Dangerous and/or Mixed Waste

- [ ] 5.72 Performing Treatability Studies
- [ ] 5.73 Performing Generator Treatment of Dangerous and/or Mixed Wastes
- [ ] 5.74 Treating Dangerous and/or Mixed Waste

Pollution Prevention/Waste Minimization (P2/WMin) Process

- [ ] 5.75 General
- [ ] 5.76 Recycling Process
- [ ] 5.77 Managing Recyclable or Reclaimable Materials Through the Centralized Consolidation/Recycling Center
- [ ] 5.78 Managing Lead-Acid Batteries That Will *Not* Be Sent to the Centralized Consolidation/Recycling Center
- [ ] 5.79 Accumulating Used Oil For Recycling and Managing Used Automotive Oil Filters
- [ ] 5.80 Accumulating Spent Antifreeze For Recycling
- [ ] 5.81 Accumulating Used Shop Towels For Recycling

Disposing of Waste Materials

- [ ] 5.82 Disposing of Containerized Waste
- [ ] 5.83 Disposing of Asbestos Waste
- [ ] 5.84 Disposing of Sanitary Waste
- [ ] 5.85 Disposing of Empty Containers
- [ ] 5.86 Disposing of Inert and Demolition Waste (Nonradioactive, Nondangerous)
- [ ] 5.87 Disposing of Nondangerous, Nonradioactive, Containerized Waste
- [ ] 5.88 Disposing of PCB Waste and PCB Items
- [ ] 5.89 Disposing of Investigation Derived Waste
- [ ] 5.90 Distributing, Excessing, or Disposing of Appliances Containing Refrigerants

Discharging Existing Approved Wastewaters

- [ ] 5.91 Discharging Wastewaters to the Columbia River
- [x] 5.92 Discharging Wastewaters to the Land Surface, Including Injection Wells
- [ ] 5.93 Discharging Wastewaters to a Sanitary Sewer System
- [ ] 5.94 Conducting a UIC Well Assessment
- [ ] 5.95 Annual UIC Well Update Submitted to Washington Department of Ecology
- [ ] 5.96 Portable Radioactive Air Emissions Monnitoring and Tracking Documentation

A-6003-727 (REV 1)

Barnes, Brett M

EXHIBIT 8

From: Barnes, Brett M
Sent: Monday, August 24, 2009 10:38 AM
To: Engelmann, Richard H
Subject: FW: 100K Follow Up
Attachments: Copy of Peak hour flow rate all months (min-max-avg).xlsm

Good Morning Rick,

As you aware...K Basins is working on installing a new potable water treatment system (we will connect to an existing water pipe south of the B Area) in an effort to start shutting down and D&Ding the 183 K East water treatment facility.

The new potable water treatment system will generate backwash (e.g., back-flushing filters, etc.). We would like to collect this backwash and use it for dust suppression. Most of the time it will contain TSS and small concentrations of aluminum and chloride (low ppm levels max). CIP solution will also contain TSS, some sodium, citric acid, and sulfate.

ARES corporation is working on anticipated constituent concentration data for backwash solutions.

I have never been involved with installing a potable water treatment system...so I am heading into new territory. I checked out 15333, section 5.7 (see below). I also need your help on this as well. Thanks. If you could get me answers by COB, Wednesday, August 26, 2009...that would be great. PS. There has been some very preliminary discussions with WDOH (Mike Wilson from Spokane) on this...very preliminary.

5.7 Constructing or Modifying Public Water or Raw Water Systems
[Basis: PRC-RD-EP-15332, Section 2.7]

Assignee	Step	Action
Responsible Manager	1.	Use the following instructions in addition to those found in Section 5.3, *Constructing or Modifying Facilities, Equipment, or Processes (Including Changes to Operating Processes) - General,* when performing construction activities near a public water system, or constructing or *modifying* raw water systems including collection, transmission, and distribution system components.
	2.	Contact the Water Purveyor to request authorization for construction or modification of the public water system, export water system or a raw water system. NOTE: *The water purveyors for the Hanford Site are as follows:* • *200 E and 200 W Areas, and 600 Area - FH Water Purveyor* • *100K and 400 Areas - CHPRC Water Purveyor* • *300 Area and 100N Area – WCH Water Purveyor* • *HAMMER Facility and 1100 Area – City of Richland*
Water Purveyor	3.	Based upon the requested construction or modification, determine permitting needs and develop an application for an operating permit or modify an existing operating permit in accordance with WAC 246-290, as appropriate.

1

Actionee	Step	Action
	4.	Maintain copies of permits and documents to show compliance with drinking water requirements and applicable permit terms and conditions according to the instructions in Section 7.0, *Record Identification*.
Regulatory Services & Reporting Manager	5.	Transmit the public water system permit application or modification for the public water system, export water system or raw water system to WDOH in accordance with PRC-PRO-EP-20571, *Communications with the Hanford Site Regulatory Agencies*.

2

EXHIBIT 9

Project: *New Water Treatment System for the 100K Basin*

Meeting Date: *October 6, 2009*

Time: *10:00 AM – 11:30 AM*

Meeting Location: *Department of Health Regional Office – Spokane, WA*

Prepared By: *Sam E. Wajeeh*

Participants: *Steve Moore (CHPRC), Sam Wajeeh (CHPRC), Tom Ashley (ARES), Elizabeth Bowers (DOE), Brett Barnes (CHPRC) and Mike Wilson (DOH).*

The meeting was requested by CHPRC to discuss the permitting requirements to install a new water treatment plant to replace the existing water treatment system, slated for deactivation and demolition (D&D) and to finalize the preferred method to dispose of the filter backwash water that is generated by the new water plant. The following items were key points discussed at the meeting:

1) CHPRC explained to the DOH that the purpose of the 100K project is to eliminate the use of the K East Sedimentation Basins and Water Filtration Systems, eliminate withdrawal of water from the Columbia River, and to prepare 100KE Area for demolition. The project is to first install approximately 11,000 feet of raw water line that will connect to the 100B-C area 42-inch export water line located southwest of the project site. The second part of the project includes the construction of a portable potable water treatment plant rated at 50 GPM. The replacement water plant has no net increase in capacity when compared to the existing water plant. Any increase of water demand due to the anticipated S.A. Robotics core removal and the sludge treatment project will be accommodated.

2) Mike Wilson explained that current rules require the state to request a 4-7 month pilot study for any approved alternative treatment technology. Currently, the Pall AP microfiltration units have been accepted by the State of Washington Department of Health as an alternative technology used to produce potable water. Under the Washington Administrative Codes (W.A.C.) 246-290-676(3) and 246-290-250(3) identifies that a pilot study along with a pre-design study will be required for all proposed filtration facilities unless justification to waive the need for a pilot study can be provided, and is acceptable to the Department of Health.

3) CHPRC and ARES mentioned that justification to waive the need for a pilot study is based on the fact that West Pasco has undergone pilot testing of their Pall microfiltration plant, similar to the 100K project application. The West Pasco water plant water intake is located on the north shore of the Columbia River just south of the I-182 bridge. The water quality at this location is only slightly impacted by the flow from the Yakima River. As such, the water quality at the West Pasco intake is incrementally "less" than that associated with upstream Columbia River locations. It is the Department of Health's understanding that the pilot testing was successful, however, the final report has not been submitted.

4) DOH has tentatively agreed that based on the fact that the proposed microfiltration unit to be used at the 100K site has been approved by the State of Washington Department of Health and that there is currently a local municipality utilizing the same technology and source water and is finalizing a successful pilot study, that the request to waive the need for a pilot study for the 100K project would be strongly considered. CHPRC will need to provide an e-mail and formal letter to the DOH providing justification in request to waive the pilot study. Along with the request, two additional pieces of information must be provided with the justification:

   a) Data showing that the raw water quality is stable.
   b) Discussion concerning disinfection byproducts (DBP) precursors in the raw water.

   Along with the information requested, the 100K project will provide a copy of the procurement specification for the microfiltration system and chlorine contact pipe calculations to expedite the review process. The information provided would be reviewed by Mike Wilson (Spokane – DOH) and his counterparts that are more familiar with microfiltration membrane technology, Sam Perry (Olympia – DOH), Ethan Moseng (Olympia – DOH) and Steven Baker (Olympia – DOH). A response back from the DOH is expected to take approximately one month.

5) It was agreed that ARES would prepare a draft of the justification letter to waive the need for a pilot study and submit to the 100K project for review as early as possible. After the letter has been reviewed by the DOH and the waiver submitted to the 100K project, a project report will need to follow. Four copies of the completed report must be provided to the Department of Health prior to any construction document submittals. Four copies of the completed project report should be submitted to Mike Wilson – DOH Spokane Office for review. Review time expected is approximately 35 days from receipt of the report. A project application number will then be assigned to the project for tracking purposes.

6) It is estimated that 5,000 to 7,000 gallons per day of filter backwash would be generated from the new water plant. CHPRC mentioned that the 100K project considered a few options to dispose of the filter backwash generated from the new water plant:

   a) Discharge filter backwash to a separate tank for use as dust suppression for D&D activities.
   b) Discharge filter backwash to a separate tank and transport the water to TEDF.
   c) Discharge filter backwash to an onsite evaporative pond.
   d) Reclaim/recycle the backwash by passing it through a filter and discharge to the onsite fire tank.

   It was CHPRC's preference to pursue option "d" and recycle the backwash water to the fire water tank. This option will obviate the need to construct multiple avenues for filter backwash disposal. In addition, discharging into the 750,000 gallon fire water tank allows for sufficient dilution and reduces the need for additional equipment. Due to site constraints, the DOH was more in favor of this alternative as a way to disposition filter backwash for the 100K project.

EXHIBIT 10

Kennedy, Colburn E

I:	Bowers, Elizabeth M (Liz)
.:	Wednesday, October 07, 2009 4:18 PM
To:	Balone, Steven N
Cc:	Koch, Michael R; Ortiz, Dickie J; Teynor, Thomas K; Wajeeh, Usama E; Kennedy, Colburn E
Subject:	RE: Meeting with Department of Health on Proposed Water Plant

Steve,
Two comments concerning the Tuesday meeting with Mike Wilson, Washington State Department of Health (DOH):

1. The meeting went very well & I anticipate positive results...it was worthwhile meeting face-to-face
2. Your contractor staff were very well organized, well spoken, and professional.

It was a pleasure to accompany these gentlemen to the meeting with Mike and I will be happy to continue to support your project with the ongoing DOH interface.

Liz Bowers
373-9276

From: Balone, Steven N
Sent: Thursday, October 01, 2009 1:29 PM
To: Wajeeh, Usama E; Kennedy, Colburn E
Cc: Koch, Michael R; Bowers, Elizabeth M (Liz); Ortiz, Dickie J; Teynor, Thomas K
Subject: RE: Meeting with Department of Health on Proposed Water Plant

Sam:

Liz Bowers will attend for DOE-RL, and she has offered RL government transportation for the trip- it's a Suburban, so it will carry several passengers.

Also, Liz would like to meet you and/or Scott Story prior to the trip if possible- she has taken over DOE-RL responsibility for water infrastructure projects from DJ Ortiz, and it would benefit the project for her to meet the CHPRC folks leading the charge on the project.

Let me know when I could set up a meeting for either tomorrow (Liz is working tomorrow) or Monday, or you are welcome to contact her directly at 373-9276 or 205-9610.

Steve

From: Wajeeh, Usama E
Sent: Wednesday, September 30, 2009 1:29 PM
To: Balone, Steven N; Kennedy, Colburn E
Cc: Koch, Michael R
Subject: Meeting with Department of Health on Proposed Water Plant

Colburn/Steve,

I have planned a meeting with Mike Wilson, Regional Engineer, Office of Drinking Water (Spokane Office) on October 6, 2009, to discuss permitting, proposed design/layout of the new water plant and to identify if there is a more expedient way to have the system accepted and operational. Does DOE want to be in attendance?

1

Review checklist for Acquiring services and materials

This table is intended to draw the requestor/BTR's attention to characteristics, and attributes of the proposed action which necessitate additional reviews by Subject Matter Experts (SME's), more detailed specifications, more complex subcontract requirements delineated in SOW / Procurement Specifications and/or additional approvals.

The BTR is responsible to review the characteristics, and mark the applicability column. Contact the designated organization/POC functional / project representatives / Subject Matter Experts (SME) and obtain assistance in incorporating appropriate requirements in the SOW.

Identify the applicable SME(s) that were contacted on this table and obtain their concurrence with the final SOW. Then place a copy of this table showing the person(s) contacted into the PassPort communications log for the requisition. A copy of the final, signed version should be kept in the BTR project file.

1. Review the criteria list
2. **Determine if there are there special features and requirements that need to be integrated into the Statement of Work and task descriptions.**
3. Mark the criteria or elements which appear to apply to the required product or service, obtain additional help or reviews as needed to ensure a knowledgeable review is completed.
4. For each item marked YES (applicable) contact the referenced supporting organization, subject matter expert or project contact for assistance.
5. Insert the name of the Technical Authority/SME who provided feedback & authorization to proceed
6. Incorporate or address the requirements as needed and obtain concurrence on the final documents.
7. When any of the questions/topics in the checklist are marked as "YES" applicable – then, place a copy of the completed checklist the Passport communications log (for service contract requisitions)

Project / Functional Group	100K INFRASTRUCTURE PROJECT (ARRA)
SOW / Work Scope Title	100K IMPORT WATER LINE
Start / End Date	
End-User / BTR	Scott Story
CAM	Carson Kennedy

Import water line 36538-22
~~Water Treatment Bldg. 36534-31~~

EXHIBIT 11

Criteria *Does this action/service....*	**Supporting Organization** **Reference procedure and SME**	**Applicability** **Yes / No / N/A**	**Project Contact / Reviewer**
Does this action affect potable water systems, raw water systems, or waste or hazardous systems that cross or come near potable systems? Does service involve replacement of backflow prevention assemblies or when spare parts are being used other than those of the original manufacturer and whenever a potable or raw water system will be breached? Does service involve design and/or work control documents, and changes thereto, that affect sewer systems?	Ref. SOW Section 3.1. Include as part of task descriptions or describe requirements in Section 4. Site Water Purveyor for the affected water system Sanitary Sewer System manager Project Environmental Compliance Officer PRC-PRO-EP-15333, *Environmental Protection Processes* RH Engelmann 376-7485 Fire Protection Engineering, Don Foti, 308-2487	YES No No	STEVE MOORE No Comment ~~DON FOTI~~ ~~RICK ENGELMANN~~
Include access to SNM or classified data? Involve security systems? Does service add, modify, or remove buildings from protected areas or change the security systems (monitors, cameras, etc.)? Does service impact Emergency procedures and/or plans, and changes thereto, for facilities containing SNM? Does the service require access to protected areas?	Safeguards and Security http://msc.rl.gov/ims/page.cfm/Safety,Security&Environment(SSE)/SafeguardsandSecurity Joe Bombino 376-5103	N/A	
Does this action include Controlled-Use information requiring special instructions/requirements?	Ref. SOW Section 3.3. Ref. PRC-PRO-IRM-184 Information Protection and	No	

Criteria *Does this action/service....*	Supporting Organization Reference procedure and SME	Applicability Yes / No / N/A	Project Contact / Reviewer
Controlled-Use information includes OUO, UCNI, NNPI, ECI, and AT information. Instructions/requirements pertaining to creating, storing, transmitting or managing information.	Clearance. Ryan Maloney 376-5585	NO	
Construction, drilling, or construction like services such as HVAC Cleaning, Richland Utilities, Concrete / Grout / CDF deliveries?	Project Construction or Groundwater Manager Kent Door 376-7559 David Capelle 372-0460 PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116	YES	KENT DOOR No Comment THURSBY No Comment LUTSHAM No Comment
Affects Configuration Managed (CM) Structures, systems and components (SSC) or related baseline documentation?	Design Authority / System Engineer/Authority Having Jurisdiction (AHJ) PRC-PRO-EN-20050 *Engineering Configuration Management* PRC-RD-SH-11827, *CHPRC Hanford Electrical Safety Program Requirement* PRC-PRO-NS-700, *Safety Basis Development* PRC-RD-EN-1819, *CHPRC Engineering Requirements*	YES	MIKE KOCH No Comments GAIL CRUTTFIELD No Comments
Does the subcontract result in subcontractor acquiring property or will Government Furnished Equipment be provided to the subcontractor?	Facilities and Property Management PRC-PRO-PMT-133 *Property Management Processes*	YES	T. HISSONG No Comments
Are there Civil / Structural Engineering issues including excavation, trenching or roof access?	Project Civil / Structural Engineer Central Engineering, Charlie Kronvall 376-9601 Fire Protection Engineering, Don Foti, 308-2487 PRC-PRO-SH-40078, Contractor Safety Processes Thursby, Chris Y, 376-6116	YES	KRONVALL No Comments

Does work involve on-site work requiring Work Package to execute activity?	PRC-PRO-WKM-12115, *Work Management* Project Work Management Representative CHPRC: Sandra Gray (376-2125) Fire Protection Engineering, Don Foti, 308-2487	YES	S. GRAY COMMENTS INCORPORATED
Are there mechanical engineering issues including pressure systems?	Project Mechanical Engineer, Central Engineering, Charlie Kronvall 376-9601 PRC-PRO-SH-00478, Contractor Safety Processes Thursby, Chris Y, 376-6116	YES	OK
Are there electrical engineering issues?	Project Electrical Engineer, Central Engineering, Charlie Kronvall 376-9601	YES	OK
Will Electrical equipment/tools be used onsite or provided as a deliverable?	Project: The electrical Authority Having Jurisdiction (AHJ). Carl Haller 373-1765 PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116	YES	HALLER No COMMENTS
Will hoisting and rigging be provided by the Contractor or hoisting and rigging equipment as a deliverable?	DOE-RL-92-36, Hanford Site Hoisting and Rigging Manual, rev. 1. Dana Morgan 376-2620 PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116	YES	D. MORGAN OK
Will there be significant flammable equipment additions to the site (wood, plastic, lubricants, gasoline, etc.)?	Project Fire Protection Engineer Site Fire Marshal HNF-RD-8589, *Hanford Fire Marshal Permits*	YES	S. ONBERG No COMMENTS

Does the SOW include cutting, welding or other work that requires a hot work permit?	PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116	YES	G. CANNELL NO COMMENTS
Does the scope include transportation of Hazardous Material / Waste?	Project Waste Control Specialist PRC-PRO-TP-156, *Onsite Hazardous Material Shipments* PRC-PRO-TP-157, *Offsite Hazardous Material Shipments* Jim McGrogan 372-1826	NO	

Does service document or change Respiratory Protection Equipment (RPE) listed on the *RPE Approved Equipment List?*	PRC-RD-SH-36716, *Respiratory Protection Program Requirements* PRC-PRO-SH-120, *Respiratory Protection Program* Respiratory Protection Stacey Dabler 373-4741	No	
Does service implement a new activity or change to an existing activity where hazardous, radioactive, and/or mixed hazardous material or waste is packaged for transportation between facilities onsite or offsite? Does service include procurement documents and changes to procurement documents for services or materials relative to transportation and packaging designated as level 1, 2 or impacts the ability to achieve or maintain compliance with hazardous and radioactive material transportation and packaging requirements?	Transportation and Packaging PRC-RD-TP-7900, *Transportation and Packaging Program Requirements*	No	
Is this for repair, replacement, or alteration of physical assets or property performed in CHPRC controlled or FH controlled facilities?	PRC-PRO-WKM-12115, *Work Management* Sandi Gray 376-2125 Fire Protection Engineering, Don Foti, 308-2487	No	
Will the service include HVAC system design/modification or use of HEPA filters?	PRC-PRO-EN-8323, *Management of HEPA Filter Systems* Randy Hallum 376-7089 Fire Protection Engineering, Don Foti, 308-2487	No	
Will the action include managed spare parts or spare parts list?	PRC-PRO-EN-129, Controlling Spare Parts Inventory Material CoordinatorRenee Finke 376-1155	No	

Will the scope include welding?	*PRC-RD-WLD-23775 Administrative Control of Welding* Gary Cannell 372-2894 Fire Protection Engineering, Don Foti, 308-2487	YES	G. CANNELL No Comment D. FOTI No Comment
PERSONNEL REQUIREMENTS			
Does this involve onsite work training or required training for a specific on-site work scope? Does scope implement or significantly change mandated training requirements; Training Implementation Matrices (TIMs)?	PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116 Training Coordinator Training Requirements and Standards Jamie Morris 373-9340	YES	THURSBY No Comment
Has a Job Hazard Analysis (JSA/AJHA/EJTA) been prepared or is one required?	PRC-PRO-WKM-079 Job Hazard Analysis PRC-GD-WKM-17132 Automated Job Hazards Analysis Process Guide. PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116 Miles Jaeger 372-3576	YES	M. JAEGER No Comment
Will access to or handling of classified information or special nuclear material; high risk or danger; hazardous materials be required?	Ref. HNF-PRO-27563, Drug and Alcohol Testing Performance and the Employee Reliability Program. Wiley Witherspoon 376-1805	NO	
ENVIRONMENTAL, SAFETY, HEALTH AND QUALITY ASSURANCE REQUIREMENTS			
Might industrial hygiene sampling plans and monitoring be needed for worker chemical/biological/environmental exposures?	PRC-PRO-SH-00478, Contractor Safety Processes Thursby, Chris Y, 376-6116	YES	THURSBY No Comment
Will the activity require a permit? (i.e. Asbestos Work Permit, Confined Space	PRC-PRO-SH-00478, Contractor Safety Processes Thursby, Chris Y, 376-6116	YES	THURSBY No Comment

Entry Permit, Critical Lift, Electrical Installation Permit, Electrical Utilities Disconnect Request, Energized Electrical Work Permit, Explosive Use, Fall Protection Permit for Portable Ladders, Hanford Site Excavation Permit, Hot Work Permit, Nonemergency Hydrant Tie In Permit)			SEE ABOVE
Does scope complexity require a delineation of facility specific procedures?	PRC-PRO-SH-00478, Contractor Safety Processes Thursby, Chris Y, 376-6116	YES	SEE ABOVE
Is this complex or hazardous onsite work at a DOE-owned or leased facility, as defined by HRB requiring hazard analysis and delineation in scope statement? (PRC-PRO-WKM-40004) Does Work affect the following? • Worker safety, public safety, or Industrial Safety/Industrial Hygiene requirements or activities (PRC-PRO-SH-40078) • Safety related equipment (Safety Class, Safety Significant, or General Service related to Industrial Safety and Health requirements) (PRC-MP-QA-599) • Emergency egress • Safety function of items required for occupational safety and health. (PRC-MP-QA-599) • Quality Class 1 or 2 procurement impacting industrial safety and health requirements. (PRC-MP-QA-599) • Application of safety and health specifications and practices. (PRC-PRO-SH-40078)	PRC-PRO-WKM-40004, *Hazard Review Board* PRC-PRO-SH-40078, *Contractor Safety Processes* PRC-MP-QA-599, *Quality Assurance Program* CHPRC Virtual Manual - *Occupational Safety & Industrial Hygiene* Chris Thursby, 376-6116 Rick Zimmerman, 372-1384 Fire Protection Engineering, Don Foti, 308-2487	YES	THURSBY NO COMMENT DON FOTI NO COMMENT RICK ZIMMERMAN NO COMMENT
Does this affect the following?			

• Safety, environmental, and quality requirements or established envelopes • Emergency response procedures • Emergency equipment • Safety or Fire Protection equipment • Accident or release consequences or response • Is work subject to DOE O 151.1C mandating that a hazard survey be performed for all new work?	Emergency Preparedness/Management Emergency Response Coordinator Fire Protection Engineering, Don Foti, 308-2487 Safety – Chris Thursby, 376-6116 Environmental – Brian Dixon 376-7053 Quality – Rick Warriner 376-6956 PRC-RD-EP-15332, *Environmental Protection Requirements*	YES	B. DIXON No Comment R. WARRINER No Comment
Will the work require subcontractor safety oversight, plans or controls?	PRC-PRO-MS-40213 , *Subcontractor Oversight* Rick Warriner 376-6956	YES	R. WARRINER No Comment
Does the work involve existing energy source isolation?	Project Lock and Tag Authority. Jerald Kinz 376-1168 PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116	YES	J. KINZ No Comment
Does the work require Quality Assurance, Control, and Inspection? Is the SOW quality class 1 or 2 Do any of the following apply to the item? • Is this item important to project mission and represent sufficient risk that controls beyond standard commercial practices are considered necessary to ensure the item or service is suitable for its intended purpose.	Quality Assurance Engineer PRC-MP-QA-599 , Quality Assurance Program PRC-PRO-QA-259, *Graded Approach* PRC-PRO-QA-301, *Control of Suspect/Counterfeit Items* PRC-PRO-QA-268, ; *Control of Purchased/Acquired Items and Services* Rick Warriner 376-6956 Shelby Turner 376-2144	YESS NO NO	S. TURNER No Comment

• Does failure of this item have any potential to cause radiological harm which was not designated as Quality Class 1. • Does this item require independent verification as specified by a national consensus standard (e.g., AWS D1.1; ANSI B31.3; ASME Section VIII) which was not designated as Quality Class 1 Does it affects or include any of the following? • Environmental permits • Shipping packages for radioactive (Type A, B, or LSA) or non-radioactive hazardous material • Safety class or safety significant SSCs • Quality class 1, 2, procurements • QA verification services • Documentation requiring regulatory agency approval • Documentation specifying QA requirements • Generation of quality affecting data or information.	Quality Assurance Engineer PRC-MP-QA-599 , Quality Assurance Program PRC-PRO-QA-259, *Graded Approach* PRC-PRO-QA-301, *Control of Suspect/Counterfeit Items* PRC-PRO-QA-268, ; *Control of Purchased/Acquired Items and Services* Rick Warriner 376-6956 Shelby Turner 376-2144	No	
Have potential to affect Structures, Systems, and Components related to compliance with environmental regulations, including generation, use, control, or disposal of hazardous/radiological/chemical waste materials (e.g., pest and weed control products, chemicals, lead or lead containing materials,	Project Environmental Compliance Officer PRC-RD-EP-15332, *Environmental Protection Requirements* PRC-PRO-EP-15333, *Environmental Protection Processes* RH Engelmann 376-7485	No	

asbestos, beryllium), or packages/transports waste ? Does this service have the potential to impact the environment? Should it be identified as a new aspect and/or impact? Will the work take place in a culturally sensitive area or involve a historic property? Will the work disturb plants, animals, or habitat on the Hanford site?	Fire Protection Engineering, Don Foti, 308-2487	No	
Will the work involve use, recycling, removal, treatment or disposal of asbestos, lead, PCBs, or ozone depleting substances?	Project Environmental Compliance Officer PRC-RD-EP-15332, *Environmental Protection Requirements* PRC-PRO-EP-15333, *Environmental Protection Processes* RH Engelmann 376-7485		
Will the work involve construction, maintenance or modification of facilities used for the storage, treatment or disposal of waste (e.g., dangerous, PCB, asbestos, radioactive, etc.).	Fire Protection Engineering, Don Foti, 308-2487		
Does the service involve potential for new emissions, the monitoring of, or changes to existing emissions or generation rates, or discharges (e.g., air, water, sewer, soil) of chemical, hazardous materials, radiation or radioactive materials, petroleum, or other pollutants from a facility or process?			
Does the service involve Ecology, Department of Health, or EPA requirements, investigations or remediation?		YES	ENGELMANN No Comment

Does the work involve construction, modification, repair, or decommissioning of a well?		No	
Does the work involve generation or disposal of wastewater or sewage or construction of structures for disposal of wastewater or sewage?. Does this service involve construction or excavation activities, installation or removal of building, trailers, or other structures?	Project Environmental Compliance Officer PRC-PRO-EP-15332, *Environmental Protection Requirements* PRC-PRO-EP-15333, *Environmental Protection Processes* RH Engelmann 376-7485 Fire Protection Engineering, Don Foti, 308-2487	No	
Will trash, construction debris, demolition debris, or other waste be generated during completion of the service or will the work involve construction or modification of facilities to manage any of these waste types? Will the work or service involve the use or storage of hazardous materials or the construction or modification of facilities that store hazardous materials? Does the service establish environmental, quality assurance and/or quality control requirements?	Project Environmental Compliance Officer PRC-PRO-EP-15332, *Environmental Protection Requirements* PRC-PRO-EP-15333, *Environmental Protection Processes* RH Engelmann 376-7485 Fire Protection Engineering, Don Foti, 308-2487	YES	ENGELMANN No COMMENT
Does the service have the potential for radiological dose or contamination and needs to incorporate ALARA design criteria and principles? Does the service include physical work within an area controlled for occupational radiation protection purposes?	Radiological Control Manager Radiation Protection CHPRC-00073, CHPRC *Radiological Control Manual* 10 CFR 835, "Occupational Radiation Protection" (Subparts H – Records, and K – Design and Control);	YES	G. HASTINGS COMMENTS INCORPORATED

• Radiologically Controlled Area (RCA);
• radiological areas
  o Radiation Area (RA);
  o High Radiation Area (HRA);
  o Very High Radiation Area (VHRA);
  o Contamination Area (CA);
  o High Contamination Area (HCA);
  o Airborne Radioactivity Area (ARA);
• Radioactive Material Area (RMA);
• Underground Radioactive Material Area (URMA);
Soil Contamination Area (SCA);
	PRC-PRO-WKM-079, *Job Hazard Analysis;*
	
	PRC-GD-WKM-17132, *Automated Job Hazard Analysis Process Guide;*
	
	D D BEERS 373-0766
	D T SOUTHERLAND 373-2255
		N/O	

Does this service have the potential to cause radiological harm? • Dose to workers/public? • Possible release of radioactive material to the environment? • Involve ionizing radiation/radioactive material? • Is the service intended to include containment or confinement of radioactive material? • Is the service to provide radiological personal protective equipment to protect workers from radioactive material in any form? Does the service involve design for new or modification of existing structure(s), system(s), or component(s) that involve or contain radioactive material, or could affect the radiological conditions of an existing facility (e.g., modifying ventilation, shielding, interrupting power to radiological monitoring and/or control systems or components)?	Radiological Control Manager Radiation Protection CHPRC-00073, CHPRC *Radiological Control Manual* 10 CFR 835, "Occupational Radiation Protection" (Subparts H – Records, and K – Design and Control); PRC-PRO-WKM-079, *Job Hazard Analysis*; PRC-GD-WKM-17132, *Automated Job Hazard Analysis Process Guide*; D D BEERS 373-0766 D T SOUTHERLAND 373-2255	No	
Does the service involve use of or procurement of radiological designs, equipment, and materials (including sources and radiation-generating equipment and equipment that affect control of radioactive materials [containments, vacuums, and ventilation systems, etc.])?	PRC-PRO-RP-387 *Sealed Radioactive Source Control* Radiological Control Manager D D BEERS 373-0766 D T SOUTHERLAND 373-2255	Yes	G Hastings comments incorporated
Affects the following? • Safety Class, Safety Significant, or Defense-in-Depth SSC(s) or associated TSRs. • Onsite fissile material handling / storage	Facility Licensing Manager Nuclear Safety Calvin Morgan 376-5018	No	

alteration. • Criticality alarm systems? Introduces onto the Hanford site: • Explosive materials. • Bulk storage tanks for flammable gases or liquefied flammable gases. • Bulk storage tanks for flammable or combustible liquids. • Bulk storage tanks for hazardous chemicals. Involves disturbing or digging into any waste site containing radioactive materials. Creates or modifies nuclear facility safety basis documents, i.e., DSA, TSR, hazards analyses, criticality safety evaluations, calculation notes, etc.	PRC-PRO-NS-700, *Safety Basis Development* PRC-PRO-NS-8366, *Facility Hazard Categorization* HNF-7098, *Criticality Safety Program* Raymond Puigh 376-3766	YES	RAY PUIGH NO COMMENT
Does SOW require • materials in quantities subject to the Emergency Preparedness and Community Right-to-Know Act (EPCRA) • Materials required to be tracked by management, and/or • Materials that could be replaced with more environmentally benign solvents and solvent-less systems that reduce or eliminate the use and/or generation of hazardous substances. Does this involve materials defined as hazardous by Occupational Safety and Health	Chemical Management Chemical Inventory Sheets and MSDS as a Submittal PRC-PRO-SH-10468, Chemical Management Process Marley Nickle 373-7275 PRC-PRO-SH-40078, *Contractor Safety Processes* Chris Thursby, 376-6116 PRC-PRO-EP-15333, *Environmental Protection Processes* RH Engelmann 376-7485	NO	

Act (OSHA), National Fire Protection Act (NFPA), or the Uniform Fire Code (UFC)?			
Does the SOW include Purchase of Controlled Software?	CIO Office PRC-PRO-IRM-309, *Controlled Software Management*, Adria Johnson 373-9533	No	

EXHIBIT 12

Lafferty, Laurie L

n: Story, Scott W
:l: Monday, December 21, 2009 1:55 PM
To: Lafferty, Laurie L
Subject: RE: Attachment 5 APPROVALS

EXHIBIT 13

All SME approvals have been received and all comments have been incorporated into the SOW – Scott Story.

From: Lafferty, Laurie L
Sent: Monday, December 21, 2009 1:00 PM
To: Story, Scott W
Cc: Fink, David E
Subject: RE: Attachment 5 APPROVALS
Importance: High

[redacted]

The above is what Jim Pearson requested. In our last progress meeting we did discuss that the signatures were not actually received although approvals had been received after all comments had been incorporated. All we need is an email that confirms the following:

All SME approvals have been received and all comments have been incorporated into the SOW – Scott Story.

ave no idea why signatures are now being requested as this was not covered under the BTR class I took either. It was ommended – but not required.

Thanks for your help.

Laurie L. Lafferty
100K Project Controls
CH2M HILL Plaza Remediation Company
(w) 509-372-0615
(b)(6)

Laurie_L_Lafferty@rl.gov

From: Story, Scott W
Sent: Monday, December 21, 2009 1:01 PM
To: Lafferty, Laurie L
Subject: RE: Attachment 5 APPROVALS

Not sure what you need. PRO-AC-123 does not require approval signatures on the Attachment 5. I have provided the emails that identify the requested reviewers as identified by PRC-PRO-AC-123, Attachment 5 and the follow-up email that identified that all provided reviewer comments have been incorporated. I have also updated the SOW approval table to identify additional SOW required approvers. Any questions call 376-4017.

From: Lafferty, Laurie L
Sent: Monday, December 21, 2009 12:41 PM
To: Story, Scott W
Subject: Attachment 5 APPROVALS
Importance: High

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Kennedy, Colburn E

EXHIBIT 15

.:	Barnes, Brett M
.c:	Wednesday, December 16, 2009 2:20 PM
To:	Norman, Dottie L
Cc:	Story, Scott W; Fink, David E; Kennedy, Colburn E; Wajeeh, Usama E; Seaver, Jennie R
Subject:	RE: 100K Water Infrastructure Project - Potential Project Risk

Dottie,

I asked Sam Wajeeh to provide a write-up on why we will probably need some regulatory relief (see yellow highlight below). We have previously met with the Department of Health representative on this project, Mike Wilson, Spokane Office, and he was very supportive of our new water treatment system. We are requesting your assistance on this effort. If you would like me to set up a meeting on this subject with you and project engineers, please let me know. Should you have any questions, please give me a call.

Thank you.

Brett M. Barnes, CHMM
Environmental Compliance Officer
100 K Project

14

From: Wajeeh, Usama E
Sent: Wednesday, December 16, 2009 1:50 PM
To: Barnes, Brett M
Cc: Story, Scott W; Fink, David E; Kennedy, Colburn E
Subject: 100K Water Infrastructure Project - Potential Project Risk

EXHIBIT 14

.t,

I wanted to describe to you a potential project risk related to the Department of Health permitting process and to get your assistance in the matter. As you are already aware, the 100K site is in the process of designing a new potable water (and fire protection) system utilizing the export line from the 100BC area as our source water. This effort is to allow the 100K site to discontinue drawing water from the river pumps and to accelerate the deactivation and decommissioning (D&D) of the 100KE site (sedimentation basins, building structures, etc.). On October 6, 2009, CHPRC and the Department of Energy (DOE) met with Mike Wilson, Regional Manager for the Department of Health (DOH), to discuss our proposed project and to get some confirmation regarding permitting procedures. CHPRC proposed to use a microfiltration system, which would fit the potable water needs of the 100K site. Since the technology requested for use at the site is considered "alternative technology", a pilot study (approx. 4-7 month) would be required to demonstrate potable water quality to State standards. However, since the manufacturer of the microfiltration technology has been used at various sites within the State of Washington and has proven to provide favorable water quality, a justification letter requesting to waive the pilot study will need to be submitted. Mr. Wilson suggested that the justification letter include a comparison of raw water quality between the current raw water intake at the 100K site and the raw water intake at the 100BC site. After receipt and approval of the justification letter, a project report will need to be submitted and approved by the Department of Health prior to construction of the water system (per WAC 246-290-110). The project report will describe the proposed project, reasons for altering/removing the existing system, a comparison of alternative technologies considered and why the selected technology was chosen, construction schedule for activities and drawings of the proposed project. According to our construction schedule, the 100K project intends to begin construction of the new raw water line infrastructure in the next few months. We anticipate that the project report will be submitted around the same time construction activities commence. It is unlikely we will receive an approval by the time we begin construction of the water system. In order to mitigate the situation, the 100K project intends to make contact with Mr. Wilson prior to the submittal of the project report to request some lenience for requirements. Also, we intend to insert some language stating that the proposed water treatment system will not be connected to the distribution system until such time the project report has been reviewed and approved.

1

The purpose of contacting you and potentially Ms. Dottie Norman is to determine if the environmental group has any
- with the 100K project moving forward with this approach. If so, please contact the project management team
d Fink, Scott Story and Colburn Kennedy) to discuss the issue further. I appreciate your time and diligence in the
matter

Sincerely,

Sam Wajeeh

2

EXHIBIT 16

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

January 11, 2010

CHPRC-0900784

Mr. M. D. Wilson, Regional Engineer, Eastern Regional Office
Office of Drinking Water
Washington State Department of Health
16201 E. Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216

Dear Mr. Wilson:

REQUEST FOR WAIVER OF PILOT STUDY FOR NEW 100K POTABLE WATER FACILITY

Thank you for taking the time to discuss the new 100K Potable Water Facility with the CH2M HILL Plateau Remediation Company (CHPRC) Project Team on October 6, 2009. We appreciate the information that you provided and look forward to a continued interaction with you and your subject matter experts as the project evolves.

As discussed, the CHPRC Project Team is requesting a waiver to the requirement for a pilot study of the Pall Aria Microza membrane alternative filtration technology that we intend to deploy at the new 100K Potable Water Facility. This letter is intended to provide "....engineering justification acceptable to the department..." pursuant to WAC 246-290-676 (3)(a), for the pilot study waiver.

Please take note that the existing 100K water treatment facility will remain in operation during operational testing to determine effective pre- and post-filtration dose rate and coagulant type (Polyaluminum Chloride and Aluminum Chlorohydrate) and dose rate. A formal approval from the State of Washington, Department of Health will be obtained prior to establishing the new water treatment system as its sole source of potable water production at the 100K Area.

We anticipate that the attached document will provide the necessary information to make a determination for the pilot study waiver request.

Matters pertaining to this letter have been discussed with E. M. Bowers of the U.S. Department of Energy, Richland Operations Office. You may contact me at 376-0556, or your staff may contact U. E. Wajeeh at (509)373-1830 or by e-mail at Usama_E_Wajeeh@rl.gov with any questions regarding this matter.

Sincerely,

John G. Lehew III
President and
Chief Executive Officer

uew/llm

Attachment

RL - E. M. Bowers
L. Erickson
K. L. Flynn

ATTACHMENT

CHPRC-0900784

SUPPORTING DOCUMENTATION TO WAIVE PILOT TESTING REQUIREMENT AT 100K AREA

U. E. Wajeeh and T. M. Ashley

Consisting of 9 pages,
including this cover page

A-6004-535 (REV 1)

SUPPORTING DOCUMENTATION TO WAIVE PILOT TESTING REQUIREMENT AT 100K AREA

The information subsequently presented includes a discussion of the developmental status of the Pall Aria Microza-based filtration systems, the performance of a pilot study by the City of Pasco, and a presentation of Columbia River raw water quality. Additional information includes a brief discussion of Disinfectant By-Products (DBP) and the approach to optimization of the performance of the new 100K Potable Water Facility, which we hope to undertake during the Operational Testing phase of the project (in approximately June 2010).

Developmental Status

The Pall Aria Microza-based filtration systems have been approved by the State of Washington, Department of Health (DOH) as an alternative filtration technology and are certified under ANSI/NSF Standard 61. Over the past several years, these systems have been deployed in the Pacific Northwest with increasing frequency. Recent deployments of the Pall Aria systems in the Pacific Northwest for the treatment of surface waters include:

- Clallam County Public Utility District (PUD) #1 Water Treatment Plant (WTP), Washington, commissioned in 2006
- City of Salmon WTP, Idaho, commissioned in 2006
- City of Cottage Grove WTP, Oregon, commissioned in 2008
- Chinook WTP, Washington, commissioned in 2009.

In addition, the City of Pasco has recently completed a pilot study of the Pall Aria filtration technology, and construction activities have begun on their new West Side Water Treatment Plant.

Of particular note is the Clallam County PUD #1 WTP located in Port Angeles, Washington. This is the longest running plant in Washington State that uses Pall Aria filtration technology and uses surface water as its raw water source. The CH2M HILL Plateau Remediation Company (CHPRC) Project Team has discussed the performance of these Pall Aria systems with Mike Kitz of Clallam County and has found that Mr. Kitz considers the performance of the systems to be excellent from product water quality, reliability, and maintenance perspectives. Over the three years that the systems have been in operation, no membrane failures have occurred; they have been consistently capable of producing product water with a turbidity of significantly less than 0.1 Nephalometric Turbidity Unit (NTU), even when the raw water turbidity and Total Organic Carbon (TOC) are high. Tom Martin, Assistant Superintendent of Water/Wastewater Systems, and Ken Hansen, Lead Senior Water Technician, hosted the CHPRC Project Team on November 5, 2009, on a tour of their water treatment facility. The system design, operation and maintenance history were discussed. The resulting information and appropriate lessons learned will be integrated into the ongoing design of the new 100K Potable Water Facility.

In summary, membrane type filtration technologies are being deployed with ever-increasing frequency for the treatment of potable water. As this operational and performance history continues to grow as a result, it is anticipated that these technologies will achieve demonstrated status from a regulatory perspective in the relative near term. Nonetheless, from a technical perspective,

conversation with the purveyors from the facilities listed above indicate that the Pall Aria filtration systems consistently meet all applicable water quality and performance requirements, are robust, and are very reliable.

City of Pasco Pilot Study

In 2009 the City of Pasco conducted a pilot study of the Pall Aria system. This pilot study used raw water obtained from the Columbia River upstream of its confluence with the Yakima River. There are no notable discharges to the Columbia River between the intake for the new 100K Potable Water Facility and the City of Pasco intake, although the City of Richland Wastewater Treatment Plant outfall is located in the vicinity of, but on the opposite side of the Columbia River from the City of Pasco intake. The source for both the City of Pasco Pilot Study and the new 100K Potable Water Facility is the Columbia River, and the raw water quality is expected to be very similar at the respective intake locations. A comparison of selected raw water quality data documented in the *City of Pasco West Side Water Treatment Plant Feasibility Assessment and Conceptual Design Report* (CH2MHill, 2008), and raw water quality data associated with samples collected at the location of the intake for the new 100K Potable Water Facility is presented in Table 1 below.

Table 1
Comparison of Raw Water Quality

	City of Pasco[1]	100K Potable Water Facility[2]
Average Turbidity (NTU)	1.21	0.80
Maximum Turbidity (NTU)	10	7.6
Average Temperature (°C)	12.93	14.41
Average pH	8.05	7.91
Average Alkalinity (mg/L as $CaCO_3$)	58.98	62.5
Average Total Organic Carbon (TOC) (mg/L)	1.26	1.43
Maximum TOC (mg/L)	2.10	2.58[3]

Notes:

(1) Data compiled from CH2MHill, 2008, Table 3-1. Note that data are associated with intake of City of Pasco existing Butterfield WTP which is located approximately eight miles downstream of the intake for their new West Side WTP. Data for 2000 through 2007.

(2) Data from January 2007 through August 2009 associated with Columbia River raw water samples collected at intake of new 100K Potable Water Facility.

(3) "Outlier" from June 2007, next highest maximum TOC was 2.12 from July of 2008. See Table 3 for additional details.

As shown above, the raw water quality at the intake of the new 100K Potable Water Facility may be considered incrementally "better or cleaner" in terms of turbidity, temperature, and pH and incrementally "worse" in terms of TOC.

According to the City of Pasco Pilot Study, varying concentrations of sodium hypochlorite, both pre- and post-filtration, as well as varying concentrations of coagulant, specifically aluminum chlorohydrate (ACH), were addressed. Therefore, the City of Pasco Pilot Study report is expected to address two issues of great interest to the CHPRC Project Team; the optimum dosages of hypochlorite both pre- and post-filtration and the effectiveness and optimum dose of ACH.

In summary, the City of Pasco Pilot Study was conducted using a Pall Aria system and Columbia River raw water of virtually identical quality to that associated with the new 100K Potable Water Facility. In addition, the two most important "questions" that could be answered through pilot testing are addressed by the City of Pasco Pilot Study. Thus, the results of the City of Pasco Pilot Study are expected to be of direct applicability, or use, in the design, start up, optimization, and operation of the new 100K Potable Water Facility.

Source Water Quality

Source water quality data are obtained on a monthly basis at the intake of the Hanford Site export water line, i.e., the source of raw water to the new 100K Potable Water Facility. These data are summarized in Table 2 for the last three years.

Table 2: Columbia River Raw Water Quality Data – January 2007 To Present

Raw Water Intake	Turbidity (NTU)			Water Temp (C)			pH			Alkalinity	Fecal Coliform
Month	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	(mg/l as $CaCO_3$)	(# of Organisms/100 ml)
January-07	0.480	0.900	0.596	5.000	8.000	6.077	7.800	8.600	8.161	62.00	<1.0
February-07	0.500	0.700	0.574	6.000	8.000	7.193	8.100	8.900	8.468	64.00	<1.0
March-07	0.400	1.300	0.586	8.000	12.100	10.052	8.100	8.900	8.490	60.00	<1.0
April-07	0.650	1.200	0.821	11.000	15.300	13.037	8.500	9.900	9.080	60.00	<1.0
May-07	0.580	1.700	0.950	14.200	19.100	16.532	8.900	9.800	9.429	56.00	<1.0
June-07	0.680	1.460	0.924	17.000	31.300	19.667	7.700	9.900	8.567	58.00	7.8
July-07	0.630	1.600	1.105	21.300	25.600	23.077	7.300	8.500	7.865	60.00	2.0
August-07	0.540	1.100	0.768	21.000	28.000	22.313	7.400	8.800	7.952	56.00	<1.0
September-07	0.670	0.920	0.771	16.900	22.000	20.040	7.600	8.700	7.940	58.00	<1.0
October-07	0.660	1.000	0.822	13.000	17.000	15.006	7.400	8.600	7.797	58.00	4.0
November-07	0.730	1.000	0.830	7.900	13.300	10.767	7.500	8.300	7.940	60.00	2.0
December-07	0.560	0.890	0.651	5.000	9.000	7.081	6.600	8.800	7.839	58.00	<1.0
January-08	0.510	0.710	0.569	4.700	6.000	5.376	7.000	7.900	7.306	58.00	<1.0
February-08	0.580	0.750	0.604	5.500	9.000	6.521	7.100	8.100	7.452	72.00	<1.0
March-08	0.480	0.730	0.581	7.700	10.100	9.277	6.600	8.600	7.645	72.00	<1.0
April-08	0.610	1.200	0.777	9.300	14.000	11.957	6.900	9.100	7.783	72.00	<1.0
May-08	0.780	7.600	1.261	13.000	18.300	15.420	8.300	9.400	8.800	74.00	<1.0
June-08	0.640	2.600	1.014	15.200	22.300	18.447	7.600	9.200	8.573	76.00	4.0
July-08	0.600	1.300	0.789	20.000	23.900	22.387	7.500	9.100	8.293	62.00	<1.0
August-08	0.520	0.960	0.699	21.000	23.300	22.013	7.700	8.700	8.183	66.00	<1.0
September-08	0.530	0.830	0.707	18.000	21.000	20.063	7.000	8.600	7.833	64.00	<1.0
October-08	0.560	0.770	0.662	13.000	20.200	16.100	7.000	8.100	7.594	56.00	<1.0
November-08	0.560	1.000	0.816	8.500	15.000	11.823	7.000	7.900	7.333	68.00	<1.0
December-08	0.770	1.300	0.912	4.900	14.000	7.739	7.000	7.700	7.274	60.00	<1.0
January-09	0.580	2.200	0.920	5.300	8.400	6.490	7.000	7.500	7.158	64.00	<1.0
February-09	0.590	0.980	0.702	5.800	8.200	6.996	6.800	7.500	7.200	60.00	<1.0
March-09	0.630	0.960	0.758	7.000	20.700	9.361	6.900	7.400	7.255	60.00	<1.0
April-09	0.610	1.300	0.746	9.800	20.000	12.593	6.800	7.600	7.260	62.00	<1.0
May-09	0.790	2.100	1.234	11.100	20.100	15.306	7.200	8.400	7.506	62.00	<1.0
June-09	0.750	1.700	1.082	18.000	22.700	20.610	7.400	8.800	7.880	60.00	4.5
July-09	0.460	0.900	0.680	19.600	26.000	22.719	7.500	8.000	7.694	66.00	<1.0
August-09	0.350	0.860	0.553	21.300	24.400	22.581	7.500	8.100	7.703	56.00	7.8
September-09	0.520	7.000	0.908	18.000	23.000	20.747	6.800	8.200	7.900	N/A	<1.0
Min	0.350	—	—	4.700	—	—	6.600	—	—	—	1.0
Max		7.6	—	—	26	—	—	9.4	—	—	7.8
Average	0.59	1.80	0.81	12.22	17.65	14.50	7.17	8.28	7.70	62.50	<1.76

Generally, the water quality of the Columbia River can be described as very good and can be characterized as somewhat basic with low turbidity and only moderate levels of TOC and alkalinity. A brief discussion of each of the parameters presented in Table 2 follows.

Turbidity – Generally, the turbidity is lowest in the winter months and highest in the late spring (e.g., May) during runoff. The maximum turbidity observed over the past three years, 7.6 NTU, occurred in May 2008. This value is not considered to be "high" but is atypical of the maximum turbidity that may be expected with significant frequency. This conclusion is reflected in the average maximum turbidity value over the three-year time period of 1.56 NTU.

TOC – Similar to turbidity, the TOC content is lowest in the winter months generally being in the range of 1 mg/L, and highest in early summer (e.g., June/July) at values slightly above 2 mg/L.

pH – The pH ranged from a low of 6.6 (December 2007, March 2008) to a high of 9.9 (April and June 2007) over the subject three-year time period. The average pH over this time period was approximately 7.9 with average maximum pH and average minimum pH values of approximately 8.5 and 7.4, respectively.

Alkalinity – Alkalinity values throughout the year are within a relatively tight range bounded by a low of 56 mg/L and a high of 76 mg/L; the three year average is 62.5 mg/L.

Temperature – Water temperature varies from a low near 5°C in the winter to a high of 25°C or more in the summer. The three-year average water temperature is approximately 14.4°C.

The values and associated ranges of the raw water quality parameters described above are consistent with the surface water nature of the Columbia River source, and none constitute noteworthy impediments to efficient and compliant potable water treatment.

As will be documented in the 100K Potable Water Facility Project Report, the Facility design addresses the observed ranges of the parameters presented in Table 2 and will result in the production of potable water which meets or exceeds all applicable regulatory requirements while maintaining required residual chlorine levels of 1.0 mg/L or less.

Disinfectant By-Products

The current 100K Potable Water Facility employs hypochlorite, both pre-filtration and post-filtration, and polyaluminum chloride (PAC) as the coagulant. The use of hypochlorite prior to the removal of organics (pre-filtration) can result in the potential for the formation of trihalomethanes (THM) and haloacetic acids (HAA). These compounds have been associated with potential undesirable health impacts to humans and, accordingly, limits on the allowable concentrations in treated potable water have been established by applicable regulatory agencies. Collectively, these compounds are known as Disinfection By-Products (DBP) and are regulated as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (HAA5). Currently, the

associated regulatory limits (i.e., Maximum Contaminant Limit [MCL]) are 0.080 mg/L and 0.060 mg/L, respectively, both calculated on a Running Annual Average (RAA) basis.

Table 3 presents the DBP analytical results for the current 100K Potable Water Facility for the past three years; note that these are individual quarterly results, not RAA.

Table 3: Disinfection By-Products -- Quarterly Analytical Results (2007 through 2009)

Raw Water Intake	Total Organic Carbon (mg/l)	*Trihalomethanes (Quarterly Samples)					*Haloacetic Acids (Quarterly Samples)					
Month	Sample	Chloroform (ppb)	Bromodichloromethane (ppb)	Chlorodibromomethane (ppb)	Bromoform (ppb)	Sum	Monochloroacetic Acid (ppb)	Dichloroacetic Acid (ppb)	Trichloroacetic Acid (ppb)	Monobromoacetic Acid (ppb)	Dibromoacetic Acid (ppb)	Sum
January-07	0.78											
February-07	1.14	11.8	1.1	ND	ND	12.9	ND	5.8	5.7	ND	ND	11.5
March-07	1.20											
April-07	0.99											
May-07	2.00	27.1	1.5	ND	ND	28.6	ND	16.5	18.1	ND	ND	34.6
June-07	2.58											
July-07	1.30											
August-07	1.61	38.8	2.1	ND	ND	40.9	ND	9.5	9.6	ND	ND	19.1
September-07	1.34											
October-07	1.34											
November-07	1.31	17.7	1.4	ND	ND	19.1	ND	7.1	9	ND	ND	16.1
December-07	0.72											
January-08	0.91											
February-08	1.17	9.8	1.3	ND	ND	11.1	ND	6.2	6.1	ND	ND	12.3
March-08	1.01											
April-08	1.19											
May-08	1.69	29.0	2.4	ND	ND	31.4	ND	11.0	10.3	ND	ND	21.3
June-08	1.80											
July-08	2.12											
August-08	1.25	41.5	2.5	ND	ND	44.0	ND	11.2	14.3	ND	ND	25.5
September-08	1.91											
October-08	1.47											
November-08	1.33	19.7	1.6	ND	ND	21.3	ND	11.7	10.1	ND	ND	21.8
December-08	1.25											
January-09	1.09											
February-09	1.11	12.8	1.5	ND	ND	14.3	ND	5.9	7.2	ND	ND	13.1
March-09	1.14											
April-09	1.43											
May-09	1.41	21.5	2.2	ND	ND	23.7	ND	7.3	6.3	ND	ND	13.6
June-09	2.08											
July-09	2.10											
August-09	1.87	50.5	2.6	ND	ND	53.1	ND	14.3	11.4	ND	ND	25.7
September-09	N/A											
Min		9.80	1.10			11.10		5.80	5.70			12.30
Max		50.50	2.60			53.10		14.30	18.10			34.60
Average	1.43	25.47	1.84			27.31		9.68	9.83			19.51

* Samples for TTHM and HAA5 are taken at the furthest point of the distribution system - building 142K

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TTHM – No individual quarterly sample exceeded the MCL of 80 parts per billion (ppb). The "straight" average over the three-year period was 27.31 ppb; the maximum RAA was 28.1 ppb.

HAA5 – No individual quarterly sample exceeded the MCL of 60 ppb. The "straight" average over the three-year period was 19.51 ppb; the maximum RAA was 20.5 ppb.

In summary, the current 100K Potable Water Facility has been successfully treating raw water from the Columbia River for years. The RAA for TTHM and HAA5 DBP over the past three years have been significantly less than half of their respective MCLs. While the new 100K Potable Water Facility will employ pressurized membrane filtration technology, specifically the Pall Aria AP-2 systems, this change (relative to the current 100K Potable Water Facility) is expected to improve treated water quality even further. Please note that the initial operational phase of the project, i.e., Operational Testing, will involve the determination of the most effective pre-filtration hypochlorite dose, *if indeed needed*, coagulant and dose (e.g., PAC, ACH), and post-filtration hypochlorite dose. It is anticipated that Operational Testing will be conducted in approximately June of next year. During this time, the current 100K Potable Water Facility will remain in operation serving the potable water needs of the 100K Area. Water treated by the new 100K Potable Water Facility during Operational Testing will be recycled back to the 750,000 gallon tank which constitutes the "headworks" for the new Facility. DOH approval will be obtained prior to formally commissioning the new 100K Potable Water Facility as the potable water "source" for the 100K Area.

Proposed Path Forward

A project report meeting the requirements of WAC 246-290-110, and tailored to fit the Hanford Site context, will be submitted to you as soon as the required information is obtained/developed and in advance of construction of the new 100K Potable Water Facility. Preliminarily, we expect that this will occur in the February 2010 timeframe. The project report will also include a section addressing the scope, protocols, and sampling/monitoring requirements associated with the Operational Testing phase introduced above.

We appreciate this opportunity to "technically introduce" the new 100K Potable Water Facility Project to the DOH. We request your concurrence with the selection of the Pall Aria AP-2 systems as appropriate alternative filtration technology for the new 100K Potable Water Facility and request that the requirement for a pilot study be waived for this project in accordance with the engineering justification provided herein. We also request that you assign a project number to the new 100K Potable Water Facility Project which we will reference in all future correspondence.

A-6004-535 (REV 1)

EXHIBIT 17

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

January 28, 2010

WCI-36538-103

Watts Construction, Inc
4828 Southridge Blvd
Kennewick, Washington 99338

To Whom It May Concern:

CONTRACT NUMBER 36538
100-K RIVER WATER ISOLATION PROJECT IMPORT WATER LINE
NOTICE TO PROCEED

The purpose of this letter is to authorize you to proceed at the agreed to price of $599,506.05 with the 100-K Import Water Line work scope. Any discussions or correspondence to this work should reference Release No. 022.

Preconstruction Conferences and Prejob Labor Conferences are to be scheduled with the BTR prior to beginning any on-site work. Notification is to be made by completing the Prejob Labor Conference Form and sending to the BTR no later than the Friday morning preceding the requested Wednesday conference. The next available Labor conference would be February 10, 2010. All work performed under this task is requested to be completed no later than June 30, 2010, and you are requested to notify this office if this cannot be achieved.

All field work is to be coordinated on a daily basis with Mr. Scott Story, Buyer Technical Representative, CH2M Hill Plateau Remediation Company (CHPRC), at 376-4017. All work performed under this task is to be in accordance with this Contract and the CHPRC OS & H Safety Program. If you have any questions, please contact this office.

Please sign the Contract Release Signature Documents and return documents to this office within five (5) working days after receipt of this letter. After receipt of the subject Contract Signature Document, properly signed by you without exceptions, and approval and execution by CH2M Hill Plateau Remediation Company, a fully executed copy will be forwarded to you for your records.

Sincerely,

John D. Phillips
Contract Specialist

EXHIBIT 18

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

February 17, 2010

Usama E. Wajeeh, PE
CH2M Hill Plateau Remediation Company
PO Box 1600
Richland WA 99352

Subject: Energy, Dept of/100K; PWS ID # 00177J; Benton County
Justification to Avoid Pilot Study for New 100K Potable Water Facility
DOH Project #10-0207A

Dear Mr. Wajeeh:

The Department of Health (DOH) Office of Drinking Water has reviewed your report received in this office on January 15, 2010. Your report had three requests:

1. The pilot study for the proposed filtration facilities is avoided based upon engineering justification in accordance with WAC 246-290-676(3)(a).
2. DOH concurrence with your selection of the Pall Aria AP-2 systems as the appropriate alternative filtration technology for the new 100K Potable Water Facility.
3. DOH assigns one project number for the 100K Potable Water Facilities Project.

Response to Request #1: Your request to avoid piloting the proposed technology prior to constructing the full-scale filtration facility is granted. Full-scale operational testing will be conducted during the commissioning period of the new filtration facility to determine the operating parameters.

Response to Request #2: At this time, I cannot approve your selection of the Pall membrane. In your forthcoming project report, you need to include an analysis of filtration alternatives and the rational for selecting the proposed option [(WAC 246-290-110(4)(c)].

Response to Request #3: The DOH project number for this project is "10-0207". We will assign a letter to submittals to identify different portions of the project. For example, this request is *10-0207A* and the future project report will be *10-0207B*.

As outlined in your request, a project report, meeting the requirements of WAC 246-290-110, will be submitted in advance of the construction documents and will include the scope, protocols, and sampling/monitoring requirements for the operational testing of the full-scale facility. This project report should also include the rational for selecting the Pall membrane.

In accordance with WAC 246-290-990, the review of engineering documents is subject to a review fee. Enclosed please find an invoice for $204.00.

Please contact me at (509) 329-2117, if you have any questions.

Sincerely,

Michael D. Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosure: Invoice

cc: Benton-Franklin Health District
Liz Bower, Dept. of Energy
Steve Moore, CH2M Hill Plateau Remediation Company

EXHIBIT 19

CHPRC HANFORD SITE EXCAVATION PERMIT

NOTE: Use Formal Operations Work Release to Control Work

EXCAVATION PERMIT NO. DAN-3913

1. EXPIRATION DATE 5/18/10

Work Package No. or W.O./Project No.: 100 K Fire protection and waterlines

3. Location of Excavation: 100K Area, Township 13N, Range 26E, Section 5/6

4. Originated By/Phone: Jeff Williamson/308-8857 — Date: 01DEC09

5. Engineering Change Notice (ECN)/Facility Modification Package (FMP): NA

6. Drawings, Plans/Procedures Required (Identification Numbers): H-1-91185 Sheet 1 Rev B (Preliminary), H-1-91185 sheets 2, 3 and 12

7. Description of Work (Attach composite drawing of excavation location and all known interferences)

Installation of approximately 900 linear meters of new 12" potable and fire water lines. The trenching depth will be approximately 96".
This permit will cover the area upper third of the area demarcated as the western section shown on H-1-91185 sheet 1. The southern border is Wagner Street (main road between KE & KW reactors). North of Wagner Street is an underground radioactive material area.

See H-1-91185 sheet 4, zone E-5,6,7 for piping excavation associated with this permit.

8. Special Instructions and Comments

- **Notify Site Utilities 24 hours prior to digging.**
- **For Telecommunications Cable Locate, call 1-800-424-5555.**
- **Walk down the excavation site and verify that scan marks are still visible - If not, call scanning organization to refresh marks.**
- **When anything unusual or unexpected is identified in an excavation, STOP until the discovery can be properly evaluated. Also refer to any company-specific safety procedures.**
- **When changes occur in the field that could impact the validity of this form and/or the job/task AJHA, both the AJHA and this form shall be reviewed and updated, as necessary, to reflect the field changes.**

Pothole to find existing buried lines near the affected area prior to machine excavating or installing or driving anchors. HAND DIG ONLY OR USE REGULATED GUZZLER within URMA boundaries and/or 5 feet of all known or discovered lines. A non-regulated guzzler may be used outside of the URMA boundary. Stop work immediately and contact Brett Barnes, 100K ECO, if cultural material is (e.g. bones or artifacts) discovered. Stop work immediately and notify the 105KW Shift Manager (373-3422) if radioactive or chemical materials are discovered.
Excavation is within the 100K Underground Radioactive Material Area (URMA) boundary markers. RCT support is required. Contact KW Rad Con Supervisor on 373-4164 prior to digging.

9. List Facilities, Services, Utilities, and Groundwater Wells Affected by Excavation

Water, electrical, telecommunications

REVIEW/CONCURRENCE: Insure Permit is Completed Acceptably and Safe Work Conditions are Achievable

10. Design Authority / Technical Representative: Frank Muller — Date: 3/17/10		17. Process Sewer: NA	Date
11. Environmental: Brett Barnes — Date: 3/16/10		18. Traffic Engineer: NA	Date
12. Radiological Control: Gary Hastings — Date: 3/16/10		19. Road and Track Maintenance: NA	Date
13. Steam System: NA	Date	20. Safeguards and Securities: NA	Date
14a. Electrical Utilities (Transmission/Distribution): Tod Smith	Date	21. Land Use Planning/600 Area Landlord: Ron Ingram — PRC Telecom — 8:52 AM 3-17-10	Date
14b. Facility Electrical Systems (Secondary): Floyd Maiden — Date: 3/16/10		22. Sanitary Sewer: ~~Jim L. Day~~ N/A	Date
Water Utilities: Steve Moore — PRC Telecom — 10:48 AM 3-17-10	Date	23. Facility/System Owner(s): Terry Hissong/Steve Burke — 3-18-10	Date
16. Telecommunications: Shirrell Brown — PRC Telecom — 9:17 AM 3-17-10	Date	100K FPE SOC 3/18/10	

Work Complete

A-6004-751 (REV 0)

April 7, 2010

GAG-36534-31-00

George A. Grant, Inc.
1333 Gillespie
Richland, Washington 99352

Gentlemen:

CONTRACT NUMBER 36534-31
ARRA - POTABLE WATER TREATMENT FACILITY
CONTRACT AWARD DOCUMENTS TRANSMITTAL

The purpose of this letter is to formally authorize you to proceed with the work scope defined as ARRA - POTABLE WATER TREATMENT FACILITY at the not to exceed price of $3,087,000.00. Please note this scope of work is being issued under your CHPRC Basic Ordering Agreement No. 36534. Any discussions or correspondence related to this work scope should reference Contract 36534, Release 31.

The Project defined as "ARRA - POTABLE WATER TREATMENT FACILITY" for products and services to be provided, including any specific CH2M HILL standards and requirements, required for the successful completion of this work activity includes the following task: The Contractor shall provide all work necessary to install a potable water treatment facility, multi-purpose water storage tank and foundation, diesel powered fire water pump, and piping distribution systems for potable water and fire water

As a reminder, all Submittals required for working at Hanford shall be received in accordance with the schedule as noted within the Submittal Register attached. **Construction work shall be complete by July 23, 2010.**

All work is to be coordinated on a daily basis with Mr. Stephen R. Douglass, BTR, at 509-308-7714. All work performed under this task is to be in accordance with this Contract and the CHPRC OS & H Safety Program. Please immediately schedule the site labor conference, contact Frank Blowe, FH, at 509-376-5205. If you have any questions, please contact this office at 376-0919.

Sincerely,

Noreen A. Clifford, C.P.M.
Contracting Officer
CH2MHILL Plateau Remediation Company
PO Box 1600, M/S H8-42
Richland, WA 99352
Phone: (509) 376-0919
Fax: (509) 376-5562
noreen_a_clifford@rl.gov

PART I - STATEMENT OF WORK

1.0 INTRODUCTION / BACKGROUND

As a prime contractor to the U.S. Department of Energy (DOE), CH2M HILL is focusing on the safe, environmental cleanup of the Central Plateau of DOE's Hanford Site. CH2M HILL's scope of work includes treatment and disposal of various radioactive waste streams, groundwater, management of spent nuclear fuel, disposal or disposition of nuclear materials, and non-reactor nuclear facilities, and environmental remediation activities currently funded through DOE's Office of Environmental Management.

This statement of work identifies the Contractor's scope as it relates to the support of 100K River Water Isolation Project.

2.0 DESCRIPTION OF WORK – GENERAL

The Buyer requires the Contractor to perform all work necessary to install a potable water treatment facility, multi-purpose water storage tank and foundation, diesel powered fire water pump, and piping distribution systems for potable water and fire water. Contractor will procure all material required for the installation unless identified as supplied by others in this Statement of Work (SOW), the specifications, or drawings.

The Contractor shall be responsible for execution of the work in accordance with the quality standards and requirements specified in the SOW, the specifications, and drawings.

3.0 DESCRIPTION OF WORK – SPECIFIC

The Contractor shall furnish all necessary labor, supervision, materials, tools, services, and equipment required to perform the work scope as detailed in this SOW. Equipment and material includes tools and procurement of all material, including consumables, and the construction, testing, and quality assurance necessary to construct/install systems and facilities in accordance with Tasks identified in this SOW, Drawings, Specifications, and associated Contract Documents.

3.1 Tasks

The following is intended to be broad in scope, identifying major work elements only and should not be considered all inclusive.

3.1.1 Task 1 – Site Preparation

Perform all necessary site preparation (clear, grub, level, etc.) for installation of the foundations for the water storage tank, potable water treatment building, and required underground utilities. Contractor will dispose of excess material to location specified by the Buyer.

3.1.2 Task 2 – Water Treatment Building

A. Procure and erect the pre-engineered building per the specifications and drawings. In general the Contractor's responsibility is inclusive of: building and foundation design to match floor plan and details shown on the drawings. Contractor will coordinate details of foundation to match structural details of prefabricated building systems. Contractor will be responsible for design and engineering, all procurement and fabrication as further defined in the specification and drawings.

B. The erector of the pre-engineered building, if different from the manufacturing company, shall have specialized experience in the erection of steel building systems, having completed a minimum of five projects, and shall be licensed or certified by the manufacturer of the building system.

C. Provide interior wall framing and walls for the water treatment area, electrical and motor control center room, and fire protection room as required by the specifications and drawings.

D. Procure and install the waste water cistern and connect to the building drain piping as required by the specifications and drawings.

E. Procure and install specified process tanks, process pumps, process piping, and instrumentation as required by the specifications and drawings.

F. Provide and install the building ground system, building electrical distribution system, building lighting, and other electrical components as required by the specifications and drawings.

G. Install fire protection pump, jockey pump, associated piping, and electrical.

H. Install fire protection piping and associated equipment in the fire protection room.

I. Sequence building erection and/or building design to accommodate Contractor installation of Buyer furnished equipment. Specifically, the fire water pump and the microfiltration water treatment skid and associated equipment.

- Microfiltration system availability date to the Contractor is
- Fire and jockey pump availability date to the Contractor is

3.1.3 Water Storage Tank

A. Contractor will procure and erect the multi-purpose water storage tank. Water Storage Tank will procured by the Contractor in accordance with procurement specification KBC-42023. In general, the Contractor's work responsibility is inclusive of: all tank and foundation design and engineering. Contractor will be responsible for design and engineering, all procurement and fabrication as further defined in the specification and drawings.

B. Contractor will perform excavation/backfill for the tank foundation, structural fill, trench excavation/pipe bedding/backfill under the tank for piping that penetrates the tank bottom (to the point each pipe is 10 feet beyond the outside of the tank).

C. Contractor will place concrete foundation, anchor bolts, pipe penetrations through the tank bottom and inclusive of the associated piping to the point each pipe is 10 feet beyond the outside of the tank.

D. Contractor will provide and install all tank bottom/wall/ roof steel components, roof supports, hatches, manholes, overflow, roof vent, nozzles, ladders, railing at the roof edge.

E. Contractor will provide and install lightning protection including all associated grounding.

F. Contractor will provide and apply coating and/or other permissible corrosion protection features.

G. Contractor will provide and apply the specified tank insulation/lagging.

H. Contractor will provide all required testing of the Contractor's installations, and all required documentation (including submittals, Quality Assurance, Quality Control, testing, and certification[s]).

3.1.4 Task 4 – Install Microfiltration System

A. Install the buyer furnished microfiltration water treatment skids
B. Install associated Contractor provided piping, instrumentation, and electrical wiring.
C. Pressure testing
D. Electrical testing
E. Instrument loop wiring and termination verification
F. Support for equipment testing and acceptance

3.1.5 Task 5 – Fire Protection Piping, Fire Pump, and Fire Alarm Control Panel

A. The Contractor is responsible for the design and proper installation of the automatic sprinkler system in accordance with the specifications and drawings. The Contractor is responsible to coordinate with the architectural, mechanical, and electrical design and construction documents.

B. The design and installation of the automatic sprinkler system shall be accomplished by a licensed sprinkler contractor or licensed company regularly engaged in this type of work.

C. The FACP installer will be licensed to engage in the design, fabrication, and installation of the fire alarm system and will have extensive experience with the installation and testing of systems of this nature. Installer will be factory certified representative of the manufacturer of the FACP.

D. The Contractor will install the Buyer provided diesel powered fire pump, jockey pump, fire pump controller (reference Procurement Specification KBC-42021), and fire alarm control panel. The Contractor will furnish all equipment and appurtenances necessary for the proper installation of the diesel powered fire pump, jockey pump, fire pump controller, and the fire alarm control panel (FACP) as identified in the specifications and drawings.

E. Contractor will provide support during pump installation certification and acceptance testing of the fire pump.

3.2 Acceptance Criteria

3.2.1 Task 1 – Site Preparation

A. Required site elevation and contours achieved to the extent necessary to begin installation of required footings and foundations and underground utilities. Removal of all boulders, cobbles, and other unusable materials to the approved location.

3.2.2 Task 2 – Water Treatment Building

A. Finished work, including tests, inspections, verifications, submittals, and construction documentation shall conform to and meet the requirements as set forth and stated in this SOW, drawings, specifications, attachments, and other Contract Documents.

3.2.3 Task 3 – Water Storage Tank

A. Finished work, including tests, inspections, verifications, submittals, and construction documentation shall conform to and meet the requirements as set forth and stated in this SOW, drawings, specifications, attachments, and other Contract Documents.

3.2.4 Task 4 - Install Microfiltration System

A. Finished work, including tests, inspections, verifications, submittals, and construction documentation shall conform to and meet the requirements as set forth and stated in this SOW, drawings, specifications, attachments, and other Contract Documents.

3.2.5 Task 5 – Fire Protection Piping and Fire Pump

A. Finished work, including tests, inspections, verifications, submittals, and construction documentation shall conform to and meet the requirements as set forth and stated in this SOW, drawings, specifications, attachments, and other Contract Documents.

3.3 Mobilization

The Contractor shall secure all necessary registrations, medical exams, bioassay evaluations, appropriate dosimeters and training required prior to performing any on-site work.

A. The Contractor shall mobilize required labor, equipment, and materials to the work site.

084640130-004, Rev. 0	*Construction Specification for 100-K Water Line and Filtration System*
KBC-42021	*Procurement Specifications for Fire Pumps* (reference only)
KBC-42022	*Procurement Specifications for Microfiltration System* (reference only)
KBC-42023	*Procurement Specification for Water Storage Tank*

4.4 Drawings

The drawings included below, are hereby incorporated into, and made a part of this Statement of Work. They shall have the same force and effect as if written into the body of the Statement of Work.

Drawing No.	Rev.	Title
H-1-91184 sht.7	1A	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.6	E	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.8	E	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.12	0	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.13	0	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.14	0	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.15	0B	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.16	0	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.18	B	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.21	B	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91185 sht.23	B	100K WATER LINE AND WATER FILTRATION 100K CIVIL SECTIONS & DETAILS
H-1-91186 sht. 1	0A	100K WATER TREATMENT PLANT GRADING PLAN
H-1-91186 sht. 2	0A	100K AREA WATER LINE AND WATER FILTRATION ENLARGED SITE PLAN
H-1-91186 sht. 3	0A	100K AREAWATER TREATMENT FOUNDATION PLAN
H-1-91186 sht. 4	0A	FOUNDATION 100-K WATER TREATMENT FOUNDATION EQUIPMENT PAD PLAN
H-1-91186 sht. 5	0A	100K AREA WATER LINE AND WATER FILTRATION SECTIONS

Drawing No.	Rev.	Title
H-1-91186 sht. 6	0A	100K WATER LINE AND WATER FILTRATION DETAILS
H-1-91502 sht. 1	0	100-K TREATMENT BUILDING FLOOR PLAN
H-1-91502 sht. 2	0	100-K TREATMENT BUILDING FLOOR PLAN
H-1-91505 sht. 1	0	100K WATER SYSTEM ELECTRICAL ONE-LINE DIAGRAGM
H-1-91505 sht. 2	0	100K WATER SYSTEM ELECTRICAL LEGEND
H-1-91506 sht. 1	0	100K AREA WATER SYSTEM ELECTRICAL ONE-LINE DIAGRAGM
H-1-91506 sht. 2	0	100K AREA WATER SYSTEM ELECTRICAL LIGHTING PLAN
H-1-91506 sht. 3	0	100K AREA WATER SYSTEM ELECTRICAL PANEL SCHEDULES
H-1-91506 sht. 4	0	100K AREA WATER SYSTEM ELECTRICAL DETAILS
H-1-91506 sht. 5	0	100K AREA WATER SYSTEM ELECTRICAL DETAILS
H-1-91508 sht. 1	0	100K AREA WATER SYSTEM ELECTRICAL INSTRUMENT PLAN
H-1-91509 sht. 1	0	100K AREA WATER SYSTEM CONTROL SYSTEM DIAGRAMS
H-1-91509 sht. 2	0	100K AREA WATER SYSTEM CONTROL SYSTEM LOOP DIAGRAMS
H-1-91509 sht. 3	0	100K AREA WATER SYSTEM CONTROL SYSTEM LOOP DIAGRAMS
H-1-91509 sht. 4	0	100K AREA WATER SYSTEM ELECTRICAL VFD ELEMENTARY
H-1-91509 sht. 5	0	100K AREA WATER SYSTEM ELECTRICAL SOFT START ELEMENTARY
H-1-91509 sht. 6	0	100K AREA WATER SYSTEM ELECTRICAL MOTOR CONTROL ELEMENTARY
H-1-91509 sht. 7	0	100K AREA WATER SYSTEM ELECTRICAL MOTOR CONTROL ELEMENTARY
H-1-91512 sht. 1	0	100K AREA WATER SYSTEM PIPING AND INSTRUMENTATION SYMBOLS, LEGEND & NOTES
H-1-91512 sht. 2	0	100K AREA WATER SYSTEM PIPING AND INSTRUMENTATION DIAGRAM
H-1-91512 sht. 3	0	100K AREA WATER SYSTEM PIPING AND INSTRUMENTATION DIAGRAM
H-1-91512 sht. 4	0	100K AREA WATER SYSTEM PIPING AND INSTRUMENTATION DIAGRAM
H-1-91512 sht. 5	0	100K AREA WATER SYSTEM PIPING AND INSTRUMENTATION DIAGRAM
H-1-91512 sht. 6	0	100K AREA WATER SYSTEM PIPING AND INSTRUMENTATION DIAGRAM

Drawing No.	Rev.	Title
H-1-91512 sht. 7	0	100K AREA WATER SYSTEM PIPING AND INSTRUMENTATION DIAGRAM
H-1-91513 sht. 1	0	PIPING 100-K WATER TREATMENT FACILITY PLAN
H-1-91513 sht. 2	0	PIPING 100-K WATER TREATMENT FACILITY PLAN
H-1-91513 sht. 3	0	PIPING 100-K WATER TREATMENT FACILITY PLAN
H-1-91513 sht. 4	0	PIPING 100-K WATER TREATMENT FACILITY PLAN
H-1-91513 sht. 5	0	PIPING 100-K WATER TREATMENT ENLARGED PLAN & SECT
H-1-91513 sht. 6	0	NOT USED
H-1-91513 sht. 7	0	NOT USED
H-1-91513 sht. 8	0	PIPING 100-K WATER TREATMENT PIPING DETAIL AND SECTIONS
H-1-91513 sht. 9	0	PIPING 100-K WATER TREATMENT PIPING DETAIL AND SECTIONS
H-1-91514 sht. 1	0	PIPING 100-K WATER TREATMENT FACILITY SECTIONS
H-1-91515 sht. 1	0	PIPING 100-K WATER TREATMENT FACILITY DETAILS
H-1-91515 sht. 2	0	PIPING 100-K WATER TREATMENT FACILITY DETAILS
H-1-91516 sht. 1	0	100K WATER TREATMENT HVAC PLAN

4.5 Exhibits

The exhibits included below, are hereby incorporated into, and made a part of this Statement of Work. They shall have the same force and effect as if written into the body of the Statement of Work.

Exhibit No.	Rev.	Title
A. Form A-6004-054		Daily Activity Report (DAR)
B. Form A-6004-757		Supplier Document Submittal
C. Form A-6003-063		Request for Clarification/Information (RCI)
D. Form BC-6004-967		Work Release for Construction/Services Organization
E. Form A-6003-412		Chemical Inventory Worksheet

Applies to Contract	Document Number	Title
☒	PRC-PRO-SH-7085	Safety Responsibilities
☒	PRC-RD-SH-7459	Safety Showers and Eyewashes
☒	PRC-PRO-SH-095	Scaffolding
☐	PRC-PRO-SH-105	Steam Generation and Distribution System Safety
☒	PRC-PRO-SH-3468	Stop Work Responsibility
☒	PRC-RD-SH-11198	Storing, Using and Handling Compressed Gases
☒	PRC-RD-SH-29096	Tags, Signs and Barriers
☒	PRC-PRO-SH-10321	Walking/Working Surfaces
Applies to Contractor	**Requirement documents not controlled by CHPRC**	**Title**
☒	DOE-0336	Hanford Lockout/Tagout Program
☒	DOE-RL-92-36	Hanford Hoisting & Rigging Manual
☒	PRC-PRO-SH-10468	Chemical Management Process
☒	HNF-RD-8589	Hanford Fire Marshal Permits
☒	HNF-RD-9900	Hot Work Performance Requirements
☒	HNF-RD-9717	Fire Prevention for Construction / Occupancy/Demolition Activities
☒	HNF-RD-10606	Fire Protection Program Requirements
☐	HNF-RD-11227	Use of Explosives of the Hanford Site

I. Prior to start of work, the Contractor shall submit documentation of successful completion of the training requirements of any applicable activities covered in DOE-RL-92-36 Rev. 1, and certification that all training is current.

For previous training or construction contractor equivalency training to be acceptable for Hanford Site qualification, documented evidence must include type and class of equipment. For qualifications not related to equipment operation, personnel must have documented evidence of training and experience related to the activity as specified by DOE-RL-92-36 Rev. 1. Specifically:

EXHIBIT 21

Report No. 006	CHPRC - CONSTRUCTION DAILY ACTIVITY REPORT	Page 1 of 3
Prepared by Klint Johnson	Contract/Package No. 2010-IWL-001	Date 4/13/10
Contract/Project Import waterline and 100K FW&PW lines		

Mo	Tu	We	Th	Fr	Sa	Su
	X					

AVERAGE FIELD FORCE

Company/Name	Craft	Exempt	Overtime Workers	Overtime Hours
Watts Const.	7	1		
CHPRC - IH		1		
OJEDA- Watts support		1		
CHPRC - Radcon	2			

EQUIPMENT AT SITE

Type/Model/Status	Inspected (Y) (N)
325 Hitachi Excavater	Y
624 Johndeere loader	Y
450 Hitachi Excavator	Y
1 Ton Service Truck	Y
Aspalt grinder attachment	Y
Water truck	Y
Vac truck	Y
Dump truck & pup	Y
Side dump	Y
Komatsu Mini Excavater	Y

WEATHER–WIND–TEMPERATURE

Bright [x] Rain [ ] Snow [ ] Cloudy [X]

Calm [Slight Breeze [x] High Wind [ ]

To 31	32-49	50-69	70-84	85-Up
[ ]	[ ]	[x	[ ]	[ ]

1. Progress 2. Safety 3. Discussions 4. Changes 5. General (Problems/Reasons for poor performance, etc.)

PROGRESS

- Completed compaction & backfill requirements to answer & prove the method described in the RCI could be completed satisfactorily to CHPRC Engineer.
- Completed installation of 160 LF. 12" FW 105KW pipe, & 140 LF. of bedding & backfill. Total of pipe installed_360 FT., backfilled& compacted _300 FT.
-
- Notified 100K shift office before starting vac truck and trenching activities.
- Contractor installed secondary boundary around trenches within required setback from trench edge.

SAFETY

- Re-iterated to contractor that they will have a line watch person designated for activities under powerlines.
- Stressed to contractor crew that eye protection & contact between equipment and ground personnel is very important.
- Required secondary boundary needed around trench excavation before ,during ,and after the trench is dug.
- Discussed proper PPE for their tasks to be worn at all times.
- Discussed the emergency number in which to dial on a cellular phone.(373-0911)
- Discussed good housekeeping, to prevent slips,trips & falls.

DISCUSSION

- Discussed lines of communications between crew and supervisor is understood &clear. Made sure the operators & RCT support had radios in order to communicate the needs between both parties.
- Concurred with Rick Swallow on the use of a nuclear densomiter to be used by intermountain testing for compaction testing. Shift office will be notified when intermountain is present.

CHANGES

- Placement of the first 90' fitting & alignment on North Wastch will be set 6FT. south of it's original design.
- Placement of Fire hydrant has changed from design to 134 FT. south of the placement of the 90 elbow and Hydrant will be on the west side of Wastch near new future parking lot.
- A DCN was put in place to allow for both changes.
- These changes were implemented in the field.

GENERAL

- WRCSOF completed for 4/14/10.

A-6004-822 (REV 0)

Report No. 006	CHPRC - CONSTRUCTION DAILY ACTIVITY REPORT	Page 2 of 3

NEXT WORK DAY

- Continuation of pipe installation & backfill with compaction.
- Backfill test conducted in the morning Mon. 4/14/10

A-6004-822 (REV 0)

Report No. 006	CHPRC - CONSTRUCTION DAILY ACTIVITY REPORT	Page 3 of 3

A-6004-822 (REV 0)

EXHIBIT 22

Report No. 002	CHPRC - CONSTRUCTION DAILY ACTIVITY REPORT	Page 1 of 3

Prepared by	Contract/Package No.	Date
Klint Johnson	2010-IWL-001	4/28/10

Contract/Project	Mo	Tu	We	Th	Fr	Sa	Su
Import RAW waterline			x				

AVERAGE FIELD FORCE

Company/Name	Craft	Exempt	Overtime Workers	Overtime Hours
Watts Const.	3			
CHPRC - IH		1		
OJEDA- Watts support	1	1		
MSA Radcon		1		

EQUIPMENT AT SITE

Type/Model/Status	Inspected (Y) (N)
225 Hitachi Excavater	Y
624 Johndeere loader	Y
450 Hitachi Excavator	Y
1 Ton Service Truck	Y
720 Johndeere blade	Y
Water truck	Y
Vac truck	Y
Dump truck & pup	Y
Side dump	Y
Cat 725 offroad dumptruck	Y

WEATHER–WIND–TEMPERATURE

Bright [x] Rain [ ] Snow [ ] Cloudy [x

Calm [Slight Breeze []x High Wind [ ]

To 31	32-49	50-69	70-84	85-Up
[ ]	[ ]	[x	[ ]	[ ]

1. Progress 2. Safety 3. Discussions 4. Changes 5. General (Problems/Reasons for poor performance, etc.)

PROGRESS

- **Contractor has completed the design staking & surveying.**
- **Continued Clearing & grubbing up to 4500 FT. (45%)-of total.**
- **Contractor to mobilize needed equipment for project.**
- **Set up meeting with a PNL represenitive for a walk down, & observation of excavation activities.**

SAFETY

- Using eye & radio contact with equipment operator's and ground personnel within their work areas.
- Continued use of proper PPE for the task's encountered by all crafts.
- Discussed the need for coordinating truck & equipment traffic with spotters in conjested areas to allow
- For an extra set of eyes during operations.

DISCUSSION

- **Notified contractor to avoid the two main culturally sensitive ares until there is a representative from tribunal community there onsite.**
- **Stressed the importance of keeping good housekeeping with all boundaries on the project.**
- The importance of closing rope barrier at pit 23 at the end of shift.

CHANGES

A-6004-822 (REV 0)

Report No. 002	CHPRC - CONSTRUCTION DAILY ACTIVITY REPORT	Page 2 of 3

GENERAL

- Should have concurrence on last signature needed on the Excavation report by close of business.

NEXT WORK DAY

- Contractor to begin clear & grub activities along pipe route.

A-6004-822 (REV 0)

Report No. 002	CHPRC - CONSTRUCTION DAILY ACTIVITY REPORT	Page 3 of 3

A-6004-822 (REV 0)

EXHIBIT 23

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS

Compiled from IDMS, April 5, 2011

Week Ending February 12, 2010
(First instance of water/fire project in ARRA Weekly Reports)

Facility D&D
Isolation of 100K Area utilities continued in support of cold and dark conditions for buildings, structures, and waste sites that are planned for D&D and remediation. This includes replacing portions of the current electrical and water supply systems with temporary systems to limit restrictions on demolition and remediation activities. Contracts have been awarded for construction of a temporary underground water line, microfiltration unit, and a skid-mounted electrical substation. A cultural and ecological review of the locations for the water line and microfiltration unit are nearing completion.

Week Ending February 19, 2010

Facility D&D
Isolation of 100K Area utilities continued in support of cold and dark conditions for buildings, structures, and waste sites that are planned for D&D and remediation. This includes replacing portions of the current electrical and water supply systems with temporary systems to limit restrictions on demolition and remediation activities. The cultural and ecological review of the locations for the water line and microfiltration unit continued.

Week Ending February 26, 2010

Facility D&D
Isolation of 100K Area utilities continued in support of cold and dark conditions for buildings, structures, and waste sites planned for D&D and remediation. A total of 16,500 feet – more than three miles – of piping arrived for the water line that will be constructed to ease restrictions on work activities in the 100K Area. Planned construction sites are being scanned with ground-penetrating radar to support safe excavation. Engineering and electrical utilities organizations are reviewing modifications to the electrical system. Cultural and ecological reviews of locations for the water line and microfiltration unit are in progress.

Week Ending March 05, 2010

Infrastructure Utilities Upgrade Project
Isolation of 100K Area utilities continued in support of cold and dark conditions for buildings, structures, and waste sites planned for D&D and remediation. Scanning of planned construction sites with ground-penetrating radar continued. Construction materials are being delivered. A pre-bid conference was conducted with potential bidders for a design/build contract for the water treatment facility and dual-use water tank. The cultural and ecological reviews of the locations for the water line and treatment plant facility have been completed and the results are being reviewed internally by the Pacific Northwest National Laboratory. Engineering design reviews for re-routing the 13.8KV electrical lines were completed. Transformer and switch gear procurements are being accelerated as result of a meeting with the contractor for the skid-mounted substation to identify opportunities for schedule acceleration.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending March 12, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued in support of cold and dark conditions for buildings, structures, and waste sites planned for D&D and remediation. Ground-penetrating radar scanning of planned construction sites and delivery of construction materials continued. The cultural and ecological reviews of locations for the water line and treatment plant have been completed and the results are being reviewed internally by the Pacific Northwest National Laboratory. The fire water and potable water supply Statement of Work was revised to support future procurement activities. Design drawings for the fire water supply and potable water supply are being reviewed internally. Staff continue to be added to support construction activities. Final engineering design and specifications for re-routing the 13.8KV electrical lines were completed and transmitted to the CHPRC procurement organization for preparation of a request for bid. The Infrastructure Utilities Upgrade Project activities are being closely coordinated with other 100K Area activities to ensure safe and efficient operations.

Week Ending March 19, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. Equipment and materials to support construction activities are being procured and staged for the start of construction. Excavation permits are being prepared. The cultural and ecological reviews of locations for the water line and treatment plant have been approved and will be provided to interested Native American Tribes for review.

Week Ending March 26, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. Equipment and materials to support construction activities are being procured and staged for the start of construction. Backfill material needed for construction activities is being staged for future use. Heavy equipment is being received. Work execution documents are being prepared and construction bids are being received and evaluated.

Week Ending April 02, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. Equipment and materials to support construction activities are being procured and staged for the start of construction. Backfill material needed for construction activities is being staged for future use. Heavy equipment has been received. Work execution documents are being prepared, designs are being finalized, and construction bids are being received and evaluated. The cultural and ecological review report for the import water line installation was approved by DOE and a 30-day public review period has commenced. Fabrication of the fire pump and microfiltration unit for the Water Treatment Facility is ongoing.

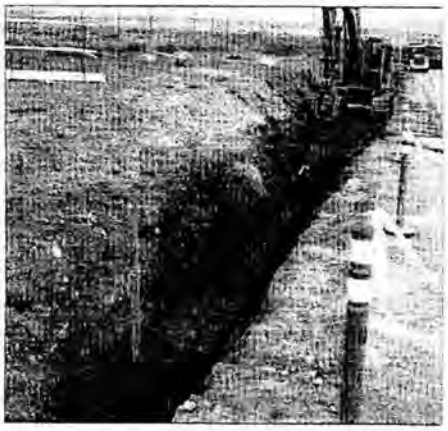
EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending April 09, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. Equipment and materials for construction activities are being procured and staged for the start of construction. Backfill material is also being staged for future use. Work execution documents are being prepared and designs are being finalized. Field construction activities are expected to begin next week. The 30-day public review period for the cultural and ecological review report for installation of the import water line continued. Fabrication of the fire pump and microfiltration unit for the Water Treatment Facility is ongoing. Design and fabrication of the skid-mounted electrical substation continued.

Week Ending April 16, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. Equipment and materials for construction activities are being procured and staged for construction. Backfill material is being staged for future use. Work execution documents are being prepared and designs are being finalized. The 30-day public review period for the cultural and ecological review report for installation of the import water line continued. About 380 feet of pipe for the fire water line have been installed. Backfilling and compaction were completed for about 300 feet of the pipe trenches. Fabrication of the fire pump and microfiltration unit for the Water Treatment Facility is ongoing. A ground-penetrating radar survey of the Water Treatment Facility building footprint was completed. Design and fabrication of the skid-mounted electrical substation is continuing.



Week Ending April 16, 2010
Pipe for the fire water line is being installed in the 100K Area. The line will provide water for use in the event of a fire and is being constructed with Recovery Act funding as part of the 100K Area Infrastructure Utilities Upgrade Project to reroute utilities to ease impacts on upcoming demolition and remediation activities.

Week Ending April 23, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. The 30-day public review period for the cultural and ecological review report regarding the installation of the import water line was completed and construction of the import line was approved to move forward. Excavation documents were completed and are being approved. A traffic safety plan for locations where the import line construction will cross roads is being prepared. Materials for the import line are being procured and staged for use.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Pipe installation for the 100K Firewater and Potable Water system continued. About 1,440 feet of firewater pipe has been installed. Backfilling and compaction has been completed for 750 feet of pipe. Asphalt saw cutting started on the near 105KW facility in preparation for installation of fire and potable water pipe to the 105KW facility. A preconstruction meeting was conducted with the contractor for the Water Treatment Facility. Submittals from the contractor are being received and processed. Fabrication of the fire pump and microfiltration unit for the Water Treatment Facility is ongoing.

Week Ending April 30, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. Excavation documents for the import waterline were approved and clearing and grubbing of the pipe route was initiated. A traffic safety plan for locations where the import line construction will cross roads was completed and is being implemented. Materials for the import line are being procured and staged for use in the designated lay down area.

Pipe installation for the 100K fire water and potable water system continued. About 1,940 feet of firewater pipe has been installed. Backfilling and compaction is complete for about 1,550 feet of pipe. Asphalt saw cutting continued near the 105KW facility in preparation for installation of fire and potable water pipe to the 105KW facility. Contractor bids are being sought for the installation of fire water and potable water for the remainder of the 100K Area.

The contractor mobilized for construction of the Water Treatment Facility. The Water Treatment Facility will be used to provide potable for the 100K Area so that existing treatment facilities can be deactivated and demolished. Equipment was inspected and a construction office was installed. An initial site grading survey was completed and a site access road established. Site boundaries were defined and signs were installed. A geotechnical survey for soils under the tank foundation was performed. Fabrication of the fire pump and the microfiltration unit for the Water Treatment Facility is ongoing.

Trench excavation for the A9 Switchyard Site upgrade continued. Approximately 300 feet of trench has been excavated and about 1,200 feet of conduit installed. Three more utility vaults were installed. Three oil-filled circuit breakers were removed from the switchyard to make room for the installation of new equipment. Fabrication of the 230kV Mobile Skids is continuing. Revisions are being made to the 13.8KV re-route design. Material procurement will begin after the design changes are completed and approved.

Week Ending May 07, 2010

Infrastructure Utilities Upgrade Project
Isolation of the 100K Area utilities continued. Trench excavation, pipe installation, and backfill began for the import water line. Nearly 8,000 feet of pipe has been installed. Pipe casing was installed at two road crossings and one railroad crossing. Pipe is being located along the pipe route.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS

Compiled from IDMS, April 5, 2011

Approximately 2,500 feet of fire water pipe has been installed with backfilling and compaction completed for about 2,350 feet of pipe for the 100K fire water and potable water system. Asphalt saw cutting was completed and pot hole excavation began near the 105KW facility in preparation for installation of fire and potable water pipe. Contractor bids are being obtained for the installation of fire water and potable water line for the remainder of the 100K Area.

At the site of the future 100K Area Water Treatment Facility, a geotechnical survey of soils under the foundation locations indicated the top four feet of soil will need to be removed in order to reach the undisturbed native soil. The construction contractor is removing the undesirable soils and replacing them with structural fill. A sump pit was excavated and compacted and concrete forms construction began. Building and tank designs were submitted and approved; off-site fabrication was initiated. Fabrication of the fire pump and the microfiltration unit for the Water Treatment Facility is ongoing.

Trench excavation for the A9 Switchyard Site upgrade continued. Approximately 1,400 feet of trench has been excavated and 6,000 feet of conduit installed. Fourteen of 18 utility vaults have been installed.

Week Ending May 07, 2010
Excavation and soil removal is in progress at the construction site for the 100K Area Water Treatment Facility. The facility will provide potable water for the 100K Area so that CHPRC can deactivate and demolish the existing treatment facilities.

Week Ending May 14, 2010

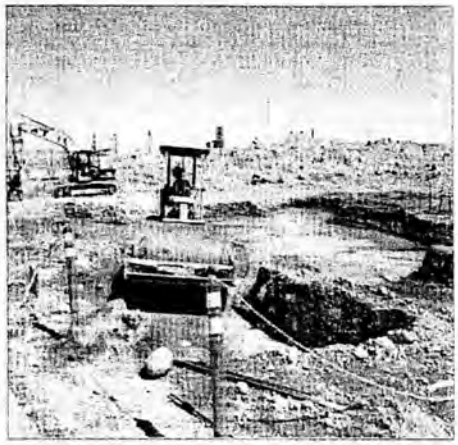
Infrastructure Utilities Upgrade Project
Installation of the import water line continued. About 2,700 feet of pipe for the import water line was installed, including three road crossings. About 90 percent of the pipe route was cleared and grubbed. A Hanford Site cultural resources representative monitored as workers excavated 340 feet of trench for the import water line in a culturally sensitive area. No significant discoveries were encountered.

Installation of the fire water pipeline along the southwestern portion of the 100K Area is nearly complete. About 2,900 feet of firewater pipe has been installed. Installation of a 4-inch potable water pipe to the 105KW Building and Cold Vacuum Drying Facility was started.

Contractor bids for the installation of fire water and potable water line for the remainder of the 100K Area have been received and are being evaluated.

The top four feet of soil was removed at the site of the Water Treatment Facility and structural backfill is being placed and compacted. Construction office trailers were set in place. Concrete

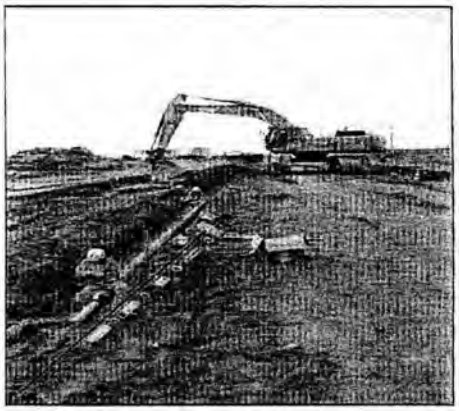
form construction continued. Off-site fabrication for building, tank, and process piping is ongoing.



Week Ending May 14, 2010
A worker compacts soil at the site of the future Water Treatment Facility. The facility will provide potable water for the 100K Area and allow existing facilities to be demolished to reduce restrictions on future demolition and remediation activities.

Week Ending May 21, 2010

Infrastructure Utilities Upgrade Project
About 6,100 feet of pipe has been installed, including three road crossings, for the import water line. Overall, installation of the import water line is about 50 percent complete.
Installation of the fire water pipeline along the southwestern portion of the 100K Area is complete. Installation of a 4-inch potable water pipe to the 105KW Building and Cold Vacuum Drying Facility continued. About 1,500 feet of pipe and fittings has been installed. The locations for the fire and potable water pipe installation on the west side of the 105KW Reactor building were surveyed and marked. A staging area was established for ERDF containers that will be used to receive soils removed from the work site. A contract for installation of the fire water and potable water line for the remainder of the 100K Area was awarded and contractor submittals are being processed.



Week Ending May 21, 2010
1
Placement of compacted structural backfill was completed for the Water Treatment Facility. Building sump and building footing concrete form construction continued. Off-site fabrication for the fire pump, Water Treatment Building, tank, and microfiltration unit is ongoing. Off-site fabrication for process piping started.

Week Ending May 28, 2010

Infrastructure Utilities Upgrade Project
Installation of the import water line continued. About 8,100 feet of pipe and fittings have been installed to date, with three completed road crossings. Overall, installation of the import water line is about 70 percent complete.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS

Compiled from IDMS, April 5, 2011

Installation of the 12-inch fire water and 4-inch potable water lines along the southwestern perimeter (inside the fence) of the 100K Area is complete. Filling of the 12-inch fire water line for flushing and testing activities started.

Installation of a 4-inch potable water pipe to the 105KW Reactor building and Cold Vacuum Drying Facility continued. Fitting and saw cutting locations for the fire and potable water pipe installation on the west side of the 105KW Reactor building were marked. A staging area was prepared for placement of ERDF containers that will be used to receive soils removed from the work site. Contractor submittals are being processed for installation of the fire water and potable water lines for the remainder of the 100K Area.

Concrete form construction continued for the Water Treatment Facility. Concrete was placed for the sump floor. Off-site fabrication of the tank foundation formwork is complete with delivery expected this week. Off-site fabrication for under-slab piping is complete. About 50 percent of the under-slab piping has been installed with two of five field welds completed. The 12-inch fire water line has been installed from the site boundary to the building foundation. Under-slab electrical conduit has been placed and inspected. Off-site fabrication continued for the fire pump, tank, and microfiltration unit for the Water Treatment Building.

Week Ending June 04, 2010

Infrastructure Utilities Upgrade Project
Installation of the import water line continued. About 10,400 feet of pipe and fittings have been installed to date. Overall, installation of the import water line is about 90 percent complete. Flushing and testing of the import water line is expected to be performed in the next two weeks.

Week Ending June 04, 2010
Forms are being placed for pouring concrete for the tank foundation at the Water Treatment Facility in the 100K Area.

Pressure testing of the 12-inch fire water and 4-inch potable water lines along the southwestern perimeter (inside the fence) of the 100K Area is complete. Final cleanup of the roadway, re-installation of roadway signs, and application of a top fill material to all disturbed areas is also complete. Pot-holing and trench excavation for fire water piping continued on the east side of the 105KW Reactor facilities.

Contractor submittals are being processed for installation of the fire water and potable water lines for the remainder of the 100K Area with construction expected to start next week.

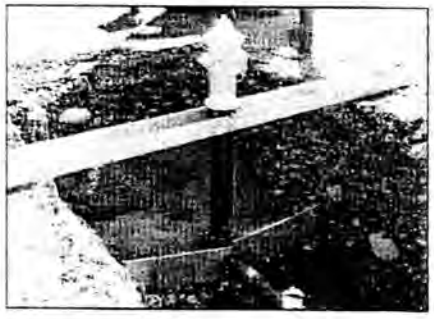
Construction continued for the Water Treatment Facility. Concrete was placed for the sump walls. Concrete forms for the water treatment building stem walls and tank foundation were constructed. The tank foundation form work is about 50 percent complete. The 4-inch potable

water line was installed from the site boundary to the building foundation. Off-site fabrication continued for the fire pump, tank, and microfiltration unit for the water treatment building.

Week Ending June 11, 2010

Infrastructure Utilities Upgrade Project
About 11,100 feet of pipe and fittings have been installed for the import water line. Installation of the import water line is approximately 99 percent complete. Flushing and testing of the line is in progress. Contract changes are pending for the removal of excess rock/overburden from the pipe route.

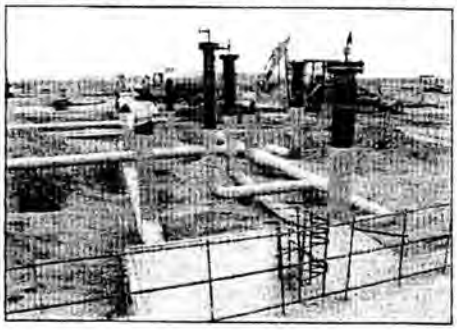
Construction is complete except for a few punch list items for the fire water and potable water lines along the southwestern perimeter (inside the fence) of the 100K Area. Pot-holing and trench excavation for fire water piping continued on the east side of the 105KW Reactor facilities. About 550 feet of trench has been excavated for the fire water and potable water lines for the Cold Vacuum Drying and 105KW facilities. A total of 440 feet of 8-inch fire water pipe was installed, including a fire hydrant. Three sand bedding compaction tests were completed and concrete thrust blocks were poured on the east side of the 105KW Reactor facility.



Week Ending June 11, 2010
A new fire hydrant was installed as part of the 100K Area fire and potable water line construction.

Construction started on the fire water and potable water lines being installed for the remainder of the 100K Area. Recent activities included excavating the trench, installing pipe, and backfilling 860 feet of 12-inch fire water pipe and 460 feet of 4-inch potable water pipe.

Construction of the Water Treatment Facility continued with construction of forms and rebar for the water treatment building stem walls and tank foundation. Forms were removed from the sump walls. Installation of the under-slab piping was completed and under-slab backfilling was initiated. Off-site fabrication continued for the fire pump, tank, and microfiltration unit for the water treatment building.



Week Ending June 11, 2010
Recently installed piping for the Water Treatment Facility that will provide potable water for the 100K Area. CHPRC is constructing the facility with Recovery Act funding to allow existing infrastructure to be removed, limiting restrictions on future demolition and remediation work.

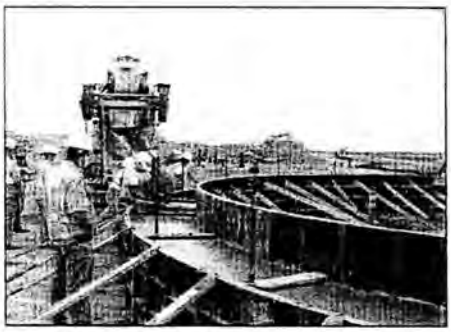
EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending June 18, 2010

Infrastructure Utilities Upgrade Project
Flushing and testing of the import water line continued. Identified leaks are being repaired and re-testing performed as needed. Contract changes are pending for the removal of excess rock/overburden from the pipe route.

Punch-list items are being completed for the fire water and potable water lines along the southwestern perimeter (inside the fence) of the 100K Area. Fire water and potable water line installation continued in the vicinity of the 105KW Reactor facilities. About 800 feet of trench was excavated and 740 feet of 8-inch firewater pipe was installed, including one fire hydrant. Six sand bedding compaction tests were completed and concrete thrust blocks were poured.

Construction continued on the fire water and potable water lines being installed for the remainder of the 100K Area. About 1,240 feet of 12-inch fire water pipe and 1,000 feet of 4-inch potable water pipe have been installed to date.



Construction of the Water Treatment Facility continued. Concrete was poured for the water treatment building stem walls and tank foundation. Under-slab backfilling continued and is about 50 percent complete. Off-site fabrication continued for the fire pump, tank, and microfiltration unit for the water treatment building.

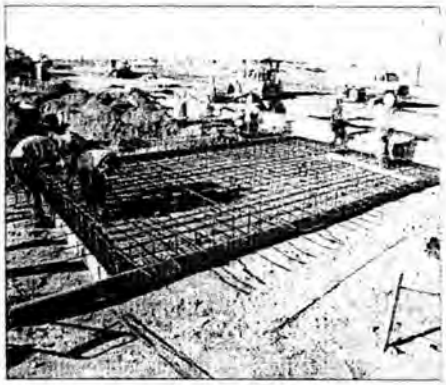
Week Ending June 18, 2010
Concrete is placed for the foundation for the Water Treatment Facility tank in the 100K Area.

Week Ending June 25, 2010

Infrastructure Utilities Upgrade Project
Flushing and testing was completed on the import water line. Punch list items are being completed for the fire water and potable water lines along the southwestern perimeter (inside the fence) of the 100K Area. Fire water and potable water line installation continued in the vicinity of the 105KW Reactor facilities. About 940 feet of trench was excavated, and 720 feet of 8-inch firewater pipe and 90 feet of 6-inch firewater pipe was installed, including another fire hydrant. Excavations are being backfilled. Construction continued on the fire water and potable water lines being installed for the remainder of the 100K Area. About 1,900 feet of 12-inch fire water pipe and 1,460 feet of 4-inch potable water pipe have been installed to date.

Construction of the Water Treatment Facility continued. Concrete was poured for the water treatment tank foundation. Under-slab backfilling continued and is about 90 percent complete. Forms were constructed and concrete was placed for the Water Treatment Facility chemical storage room pits. Off-site fabrication continued for the fire pump, tank, and microfiltration unit.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011



Week Ending June 25, 2010
Workers install rebar for the foundation of the chemical storage room pits that will be part of the 100K Area Water Treatment Facility. CHPRC is constructing the facility so that existing infrastructure can be removed and future work in the 100K Area can continue with limited restrictions.

Week Ending July 02, 2010

Infrastructure Utilities Upgrade Project
Final preparations for the import water line continued. Work began for installing actuated control valves, setting and backfilling around valve housings, and removing blow-off valves used for pressure testing and replacing them with brass plugs. Punch-list items are being addressed for the fire water and potable water lines along the southwestern perimeter (inside the fence) of the 100K Area. Fire water and potable water line installation continued in the vicinity of the 105KW Reactor facilities. So far, about 1,390 feet of trench has been excavated and 1,230 feet of 8-inch fire water pipe and 140 feet of 6-inch fire water pipe have been installed. Excavations are being backfilled with controlled density fill and gravel. Construction also continued on the fire water and potable water lines being installed for the remainder of the 100K Area; about 2,440 feet of 12-inch fire water pipe and 2,340 feet of 4-inch potable water pipe have been installed, including four road crossings.

Construction of the Water Treatment Facility continued. Under-slab backfilling for the building was completed and rebar and concrete forms are being placed in preparation for pouring the building slab. Building floor drains, trenches, and grating were installed. Underground piping was pressure tested. Building structural steel is being received and staged for construction. Off-site fabrication continued for the fire pump, tank, and microfiltration unit.

Week Ending July 09, 2010

Infrastructure Utilities Upgrade Project
Final preparations for the import water line continued; no fieldwork was conducted last week. Punch-list items continue to be addressed for the fire water and potable water lines along the southwestern perimeter (inside the fence) of the 100K Area.

Week Ending July 09, 2010
Structural steel columns and roof beams are being installed for the water treatment building in the 100K Area

Fire water and potable water line installation continued in the vicinity of the 105KW Reactor and Cold Vacuum Drying Facility; about 1,870 feet of trench has been excavated and 1,230 feet of 8-inch fire water pipe, 410 feet of 12-inch fire water pipe, and 140 feet of 6-inch firewater pipe have been

installed to date. Excavations are being backfilled with controlled density fill and gravel. Construction continued on the fire water and potable water lines being installed for the remainder of the 100K Area; about 3,110 feet of 12-inch fire water pipe and 2,340 feet of 4-inch potable water pipe have been installed.

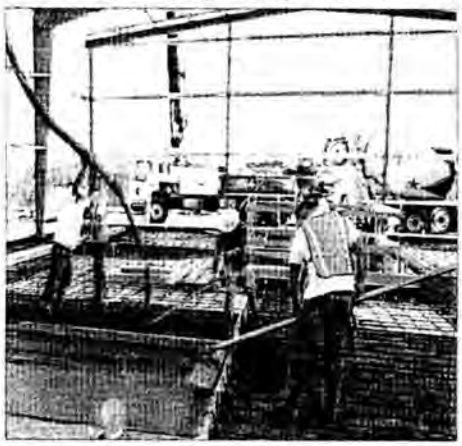
Construction of the Water Treatment Facility continued. Compaction of the under-slab backfill for the building was completed in preparation for pouring of the building slab. Rebar and concrete form installation for the water treatment building continued. The water treatment

building structural steel columns and roof beams are being installed. The storage tank floor and first vertical wall ring were installed and tack welded. Site grading material is being imported and staged for use.

Week Ending July 16, 2010

Infrastructure Utilities Upgrade Project
Rock and soil piles remaining from construction of the import water line are being removed. Work to install actuated control valves, set valve housings and backfill around them, and remove blow-off valves used for pressure testing and replace them with brass plugs was completed.

Fire water and potable water line installation continued in the vicinity of the 105KW Reactor and Cold Vacuum Drying Facility; about 2,100 feet of trench has been excavated and 1,250 feet of 8-inch fire water pipe, 430 feet of 12-inch fire water pipe, and 140 feet of 6-inch fire water pipe have been installed to date. Excavations are being backfilled with controlled density fill and gravel. Construction continued on the fire water and potable water lines being installed for the remainder of the 100K Area; about 4,490 feet of 12-inch fire water pipe, 2,340 feet of 4-inch potable water pipe, and 120 feet of 6-inch fire water pipe have been installed. The fire water and portable water installation for the remainder of the 100K Area is about 80 percent complete.



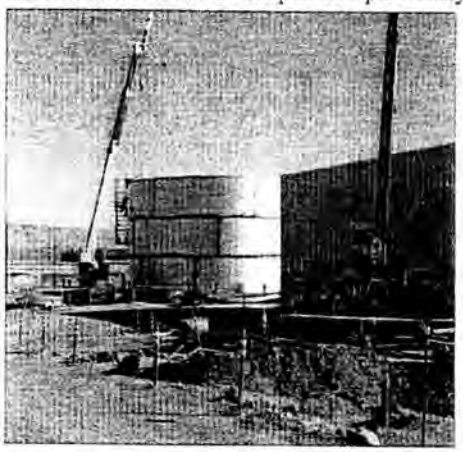
Week Ending July 16, 2010
Concrete for the building slab was poured on the east and west sides of the Water Treatment Facility building being constructed in the 100K Area.

Construction of the Water Treatment Facility continued. Installation of the water treatment building structural steel columns and roof beams is complete. Rebar and concrete form installation for the building slab is also complete. Concrete for the building slab was poured on the east and west sides of the building. Building siding is being installed and is about 80 percent complete. Construction of the storage tank continued. Site grading material continued to be imported and staged for use.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending July 23, 2010

Infrastructure Utilities Upgrade Project
Rock and soil piles from construction of the import water line are being removed and consolidated for future transport to a previously used borrow pit. The design for the tie-in at the 42-inch export water line was revised and approved.



Fire water and potable water line installation continued in the vicinity of the 105KW Reactor and Cold Vacuum Drying Facility; about 2,650 feet of trench has been excavated and 1,780 feet of 8-inch fire water pipe, 430 feet of 12-inch fire water pipe, and 150 feet of 6-inch fire water pipe have been installed to date. Excavations are being backfilled with controlled density fill and gravel.

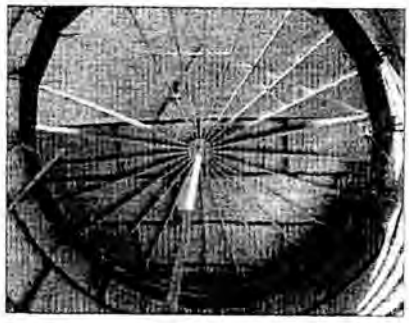
Week Ending July 23, 2010
Installation of the wall and roof panels for the water treatment building in the 100K Area is complete and construction of water storage tank continues.

Construction continued on the fire water and potable water lines being installed for the remainder of the 100K Area; about 4,950 feet of 12-inch fire water pipe, 2,340 feet of 4-inch potable water pipe, and 630 feet of 6-inch fire water pipe have been installed.

Construction of the Water Treatment Facility continued. Installation of the wall and roof panels for the water treatment building was completed. Installation of the building wall insulation was started. Construction of the water storage tank continued and is about 80 percent complete.

Week Ending July 30, 2010

Infrastructure Utilities Upgrade Project
Rock and soil piles from construction of the import water line are being removed and consolidated for future transport to a previously used borrow pit.



Week Ending July 30, 2010
The roof of the Water Treatment Facility water storage tank is installed. The 750,000-gallon, dual-use tank will provide fire and potable water to the 100K Area and allow existing infrastructure to be removed to facilitate future remediation and demolition efforts.

Fire water and potable water line installation continued in the vicinity of the 105KW Reactor and the Cold Vacuum Drying Facility; about 2,700 feet of trench has been excavated and 2,100 feet of 8-inch

fire water pipe, 430 feet of 12-inch fire water pipe, and 165 feet of 6-inch fire water pipe have been installed to date. Excavations are being backfilled with controlled density fill and gravel.

Construction continued on the fire water and potable water lines being installed for the remainder of the 100K Area; about 5,390 feet of 12-inch fire water pipe, 2,340 feet of 4-inch potable water pipe, and 730 feet of 6-inch fire water pipe have been installed. This portion of the infrastructure upgrades is about 95 percent complete.

Construction of the Water Treatment Facility continued with installation of building wall insulation, forming and placing of equipment pads, and process piping installation. The diesel fire pump was received and accepted. The tank roof and railings were installed on the water storage tank.

Week Ending August 6, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water line continued in the vicinity of the 105KW Reactor and the Cold Vacuum Drying Facility; about 3,000 feet of trench has been excavated and 2,400 feet of 8-inch fire water pipe, 430 feet of 12-inch fire water pipe, and 165 feet of 6-inch fire water pipe have been installed to date.

Pipe installation for the fire water and potable water lines for the remainder of the 100K Area is complete with a total of more than 9,500 feet of piping installed - 5,390 feet of 12-inch fire water pipe, 1,046 feet of 6-inch fire water pipe, 2,342 feet of 4-inch potable water pipe, and 760 feet of 3-inch potable water pipe.

Construction of the Water Treatment Facility continued with installation of wall insulation and process piping. The microfiltration unit was received and accepted. Construction of the water storage tank is complete and preparations are being made for painting the tank.

Week Ending August 13, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water line continued in the vicinity of the 105KW Reactor and the Cold Vacuum Drying Facility. Soil from trench excavation was loaded for disposal. Trenches with pipe in place were backfilled with controlled density fill, and gravel was placed over the top of the fill. Flushing and testing were started for the recently installed fire water and potable water lines for the remainder of the 100K Area.
Construction of the Water Treatment Facility continued with installation of building insulation and process piping. Sandblasting was completed on the interior of the water storage tank and an interior coating is being applied. Electrical installation was started on the water treatment building.

Construction efforts for refurbishment of the A9 Substation continued. Installation of a new conduit duct bank from the new Switchgear Building to two skids is complete. Pulling of cable through conduit continued. The 230 kV switches were replaced during a clearance outage.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending August 20, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water line continued in the vicinity of the 105KW Reactor and the Cold Vacuum Drying Facility (CVDF). Fire water pipe trenches were excavated near the CVDF and bedding sand was placed in the trench. The locations for future tie-ins to the

existing fire water system were excavated. Flushing and pressure testing continued for the recently installed fire water and potable water lines for the remainder of the 100K Area. Construction of the Water Treatment Facility continued with process piping installation, interior electrical installation, and interior framing and drywall for the water treatment building. Underground conduit installation was completed and site finish grading continued. Application of the interior coating was completed for the water storage tank. Exterior coating application began and is about halfway complete.

Week Ending August 27, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area continued. Fire water pipe trench excavation continued near the Cold Vacuum Drying Facility. Pressure testing continued for the recently installed potable water lines for the remainder of the 100K Area.
Installation of process piping, interior electrical wiring, interior framing and drywall, and fire sprinkler lines is in progress for the water treatment building that will be part of the Water Treatment Facility. Application of the exterior coating is complete for the water storage tank.

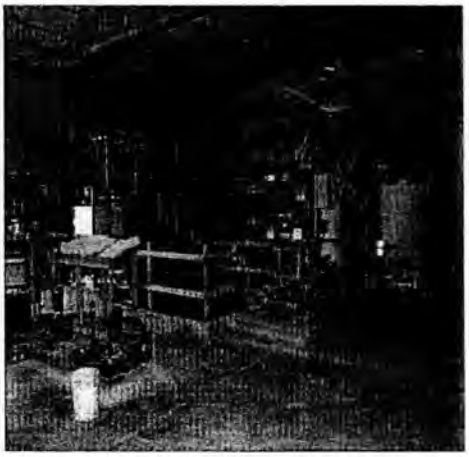
Week Ending September 3, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area continued. The tie-in to the water line feeding the new system was completed and tested. Fire water and potable water trench excavation and pipe installation continued near the Cold Vacuum Drying Facility. Bollards are being installed to protect fire hydrants and valves installed throughout the 100K Area.
Installation of process piping and interior electrical wiring continued for the water treatment building that will be part of the Water Treatment Facility. The multi-stage service water pump was received and is being prepared for installation. **The microfiltration unit is being installed. [Emphasis added]**

Week Ending September 10, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area continued. All field work for the import water line is now complete with the exception of hydro-seeding of the pipe route. Pipe installation continued near the Cold Vacuum Drying Facility for the 4-inch potable water line, including placement of sand bedding in the trenches. All piping has been installed and tested for the fire and potable water line in the remainder of the 100K Area with the exception of future tie-ins after the Water Treatment Facility is ready. Installation of process piping and

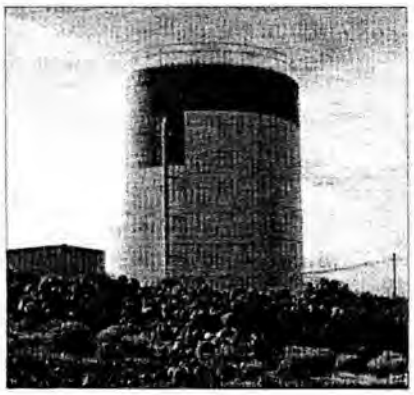
interior electrical wiring continued for the water treatment building that will be part of the Water Treatment Facility. Connections were made to the raw water service line and the Water Storage Tank was filled with 650,000 gallons of water. The Water Storage Tank hydro-test was successfully completed. Site finish grading continued.



Week Ending September 10, 2010
Filtration units are being installed in the Water Treatment Facility in the 100K Area.

Week Ending September 17, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area continued. Trenching and pipe installation continued for the 4-inch potable water line in front of Cold Vacuum Drying Facility. Initiated hydro testing of 105KW loop for the 8-inch fire line (four of six sections completed satisfactorily). Installation of process piping and interior electrical wiring continued for the water treatment building that will be part of the Water Treatment Facility. Site finish grading continued and concrete was placed at the entrances to the facilitiy (sic). Insulation is being placed on the Water Storage Tank.



Week Ending September 17, 2010
Insulation is being installed on the recently constructed Water Storage Tank that is part of the new 100K Area Water Treatment Facility. CHPRC is using Recovery Act funding to construct the water treatment facility to allow existing infrastructure to be removed to facilitate future cleanup activities.

Week Ending September 24, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area continued. Trenching and pipe installation continued for the fire water line near the Cold Vacuum Drying Facility (CVDF). Preparations are being made for tying in the new lines to the 105KW facility and the CVDF. Bacterial testing was successfully completed for a portion of the newly installed potable water system elsewhere in the 100K Area.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Installation of process equipment and piping, electrical panels, and interior electrical wiring continued for the water treatment building that will be part of the Water Treatment Facility. Insulation continues to be placed on the Water Storage Tank.

Punch list items continue to be worked and closeout paper work is being prepared for the A9 Substation Refurbishment.

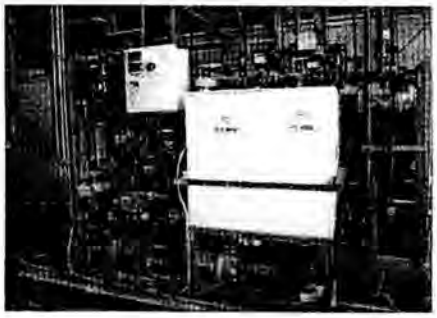
Week Ending October 1, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Preparations are being made for connecting the new fire water lines to the facilities in the 100K Area.

Installation of process equipment and piping, electrical panels, and interior electrical wiring continued for the water treatment building that will be part of the Water Treatment Facility. The microfiltration system is being tested. Installation of insulation on the Water Storage Tank is complete.

Week Ending October 8, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Preparations are being made for connecting the new fire water and potable water lines to the facilities in the 100K Area. Bollards are being placed around 105KW fire hydrants. Punch list items are being addressed. Construction closeout documents for the Import Water Line were approved and signed. Construction closeout documents are being prepared for other portions of the fire water and potable water upgrades in the 100K Area.



Week Ending October 8, 2010
The microfiltration unit is installed and being tested in the Water Treatment Building that is part of the Water Treatment Facility, which is under construction in the 100K Area.

Construction of the Water Treatment Facility continued with installation of process piping, interior electrical rough, and conduit, as well as site finish grading and top gravel placement. Final electrical terminations were made and the motor control center panel and master plant control panel were energized. Building interior and exterior lights were energized. Start-up of the water filtration equipment began. Fire Marshal approval is being obtained for the fire pump, fire suppression, fire detection, fire wall, and fire distribution system.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending October 15, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Punch list items are being worked. Preparations are being made for connecting the new fire water and potable water lines to facilities in the 100K Area. Trench excavation is complete for the future tie-in of potable water piping at the Cold Vacuum Drying Facility.

Electrical installation continued at the water treatment building. Items that need to be finished in order to obtain Building Occupancy Permit are being completed for the water treatment building. A concrete splash pad and landing were put in place at the water storage tank.

Punch list items are being worked and construction closeout documents are being prepared for the A9 Substation Refurbishment and for the 13.8KV re-route.

Week Ending October 22, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Preparations are being made for connecting the new fire water and potable water lines to the facilities in the 100K Area. Bollards are being placed around fire hydrants.

Electrical installation continued at the water treatment building. Items that need to be finished in order to obtain Building Occupancy Permit are being completed for the water treatment building. Portions of the potable water treatment system are being flushed.

Punch list items are being worked and construction completion documents are being prepared for the A9 Substation Refurbishment. Soil resistivity testing is being performed in the A9 Substation to confirm system safety.

Week Ending October 29, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Punch list items are being worked and preparations are being made for connecting the new fire water and potable water lines to the facilities in the 100K Area.

Electrical installation continued at the water treatment building. Items that need to be finished in order to obtain the Building Occupancy Permit are being completed for the water treatment building.

Week Ending November 5, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Hanford Fire Marshall approval of the system is being obtained prior to proceeding with fire water and potable water lines tie-ins.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Electrical installation continued at the water treatment building. Asphalt was placed around the southwest portion of the building. Items that need to be finished in order to obtain the Building Occupancy Permit are being completed for the water treatment building.

Week Ending November 12, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Hanford Fire Marshall approval of the system is being obtained prior to proceeding with fire water and potable water lines tie-ins.

Testing of the microfiltration unit proceeded at the water treatment building. Building electrical design changes are being processed and crews are completing items that need to be finished in order to obtain the Building Occupancy Permit.

Weeks Ending November 19 & 26, 2010

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Hanford Fire Marshall approval of the system is being obtained prior to proceeding with fire water and potable water lines tie-ins.

Testing of the microfiltration unit proceeded at the water treatment building. A portable safety shower was filled and tested. Building electrical design changes are being processed and crews are completing items that need to be finished in order to obtain the Building Occupancy Permit.

Week Ending December 3, 2010

Infrastructure Utilities Upgrade Project
Installation is now complete for the re-designed fire sprinkler system in the new Water Treatment facility. Design of the fire alarm system for the facility and modifications to the water tank have been approved for installation. Final modifications are being made to begin testing of the potable water system. Crews have completed safety-related items required for obtaining the Building Occupancy Permit. CHPRC drilled the first of two wells this week to provide additional grounding to the A-9 substation.

Week Ending December 10, 2010

Infrastructure Utilities Upgrade Project
Piping modifications and programming of the microfiltration system are complete for the Water Treatment Facility. The preliminary Customer Acceptance Testing (CAT) of the microfiltration system is also complete A final CAT will be conducted before the plant goes into sustained operations. De-energization of the A-9 substation to complete close-out of punch list items was completed. Drilling of the first two wells to improve substation grounding reached 81 feet of a planned depth of 185 feet. Additional grounding cable was installed between the main grid and the two grounding wells to enable tie-in of the wells once completed.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Weeks Ending December 17-31, 2010

Infrastructure Utilities Upgrade Project
Piping modifications and programming of the microfiltration system were completed following a preliminary customer acceptance testing (CAT). Several punch list items were completed in the A-9 substation, including labeling of panels and conduits. Drilling of the first of two wells to improve substation grounding is 75 percent complete.

Week Ending January 7, 2011

Infrastructure Utilities Upgrade Project
Customer acceptance testing of the microfiltration system is complete. The plant began a six-day operations test on Jan. 9 to demonstrate compliance with the State of Washington drinking water standards. Installation of the fire alarm system is ongoing in the plant. The drilling of the first of two grounding wells for the new A9 substation is complete with the second well beginning this week.

Week Ending January 14, 2011

Infrastructure Utilities Upgrade Project
The second of two grounding wells for the new A9 substation began this week; drilling progressed to a depth of 69 feet of a planned total depth of 189 feet. The six-day operations test was completed on Jan. 13 to demonstrate compliance with the State of Washington drinking water standards. Installation of the fire alarm system is ongoing in the plant. Modifications to the multi-purpose water storage tank and punch list items on the micro-filtrations system are planned for this week.

Week Ending January 21, 2011

Infrastructure Utilities Upgrade Project
The second of two grounding wells for the new A9 substation was drilled to a depth of 130 feet of a planned total depth of 189 feet. Following the successful operations test of the microfiltration system, the water storage tank was drained and National Fire Protection Association compliant level and temperature sensors were added to the tank. The fire alarm system is installed with only minor adjustments remaining. Phone and data wiring is being installed in the plant.

Week Ending January 28, 2011

Infrastructure Utilities Upgrade Project
The second of two grounding wells for the new A9 substation was completed to its total depth of 190 feet. For the new water system, a final modification to the water storage tank was completed. Work is ongoing in the water treatment facility to complete installation of the fire walls, the fire alarm system, communications and data infrastructure, electrical upgrades, and mechanical punch list items.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending February 4, 2011

Infrastructure Utilities Upgrade Project
The two grounding wells for the new A9 substation were tied into the substation grounding grid. Testing and cut-over of the substation's transfer trip communications system was completed. The multi-purpose water storage tank was leak tested, the diesel fire pump installed, and the building sprinkler system pressure tested. Work is ongoing in the water treatment facility to complete installation of the fire walls, the fire alarm system, communications and data infrastructure, electrical upgrades, and mechanical punch list items.

Week Ending February 11, 2011

Infrastructure Utilities Upgrade Project
Installation of the fire alarm system and an additional electrical panel and transformer was completed. Work is ongoing in the water treatment facility to complete installation of the fire walls, data and communications, power to the office trailer, mechanical punch list items, ventilation upgrades for the facility, and the secondary delivery system for emergency fire water. Testing of the service water pumps and preparatory work for tie-in to the potable water and fire water systems to 100K buildings are in progress. Completion of final punch list items for the new A9 substation is in progress.

Week Ending February 18, 2011

Infrastructure Utilities Upgrade Project
Infrastructure and utilities upgrades neared completion this week, with testing of the A-9 substation, fire-wall construction in the Water Treatment Facility control room areas, and final testing and tie-ins of the new potable- and fire-water systems ongoing.

Week Ending February 24, 2011

Infrastructure Utilities Upgrade Project
Infrastructure and utilities upgrades continued nearing completion this week, with final pressure-testing of all new fire hydrants completed. Final construction and completion of punchlist items in the Water Treatment Facility, as well as further fire-system testing, is ongoing.

Week Ending March 4, 2011

Infrastructure Utilities Upgrade Project
Infrastructure and utilities upgrades are nearing completion, with final pressure-testing of all new fire hydrants completed. Final construction and completion of punchlist items in the Water Treatment Facility, as well as further fire-system testing, is ongoing.

EXCERPTS FROM CHPRC ARRA WEEKLY REPORTS
Compiled from IDMS, April 5, 2011

Week Ending March 11, 2011

Infrastructure Utilities Upgrade Project
Flow- and pressure-testing of the new 100K Area fire-protection loop was completed, as was final construction and trouble-shooting in the Water Treatment Facility.

Week Ending March 18, 2011

Infrastructure Utilities Upgrade Project
Fire sprinklers are back in service for all applicable 100K facilities. The construction team is making final modifications to allow for the disinfection of the new potable water system to begin next week.

Week Ending March 25, 2011

Infrastructure Utilities Upgrade Project
Final staging of equipment and facilities for the full-time operations crew at the new 100K Water Treatment Facility are in progress, as preparations for super-chlorination of the new potable-water system continued. The new 100K fire-protection system is now complete and fully operational, and new control power transformers have been installed at the A-9 substation.

EXHIBIT 24

Meeting with Washington State Department of Health
Office of Drinking Water, Spokane, Washington
May 18, 2010

Attendees:
WDOH: Michael Wilson, PE - Regional Engineer; Sam Perry –Technology Specialist (via phone)
CHPRC: Moses Jaraysi, Allan Cawrse, Brian Dixon

Introduction
The meeting began at 1:00PM with the parties introducing themselves. Moses Jaraysi explained that CHPRC had requested the meeting in the interest of developing a better working relationship. A discussion of the various DOE offices at Hanford, the prime contractors, and work scope ensued.

Use of Membrane Filter Technology
Sam Perry joined the meeting via telephone because WDOH presumed that we wanted to discuss the PALL membrane technology proposed for the 100K system. WDOH reiterated that the PALL system is considered alternative filtration technology, but they are comfortable with the technology. In the case of the 100K system, they have waived the requirement to do a pilot study prior to constructing the full-scale filtration study. WDOH provided a copy of a Department memorandum with background information and required operating parameters for the PALL Microza™ microfiltration system. WDOH indicated that they will require:

- Full-scale operational testing during commissioning.
- The addition of Indirect Integrity Monitoring (particle counter or laser turbidimeter).
- Direct Integrity Monitoring (pressure decay test).

WDOH noted that the Construction Documents will include a Test Report to document the results of the operational testing during the system startup.

Project Report
WDOH discussed the requirements for a project report and suggested that the December 2009 version of the Department's *Water System Design Manual* be used as a guide in preparing the information needed for the Project Report. WDOH indicated that they are expecting the project report for their review and approval. In the case of the 100K system WDOH may need the full 35 days to complete their review. CHPRC expressed appreciation for the expedited turnaround with email approval of the project report for the water main extension supporting the Unsecured Core Area. The time constraints imposed by the short duration of funding for ARRA projects makes timely approvals an important part of project success. CHPRC noted that some construction was initiated prior to formal approval.

General Discussion
CHPRC asked for clarification about water purveyor responsibilities and how they would like to see roles and responsibilities implemented at a large DOE site with multiple drinking water systems and contractors. WDOH indicated that their primary concern is to have a point of contact for each water

system. There was also some discussion about what constitutes the commencement of construction. WDOH confirmed that while construction is not defined, it is intended to mean to build or install any component that is part of the drinking water system. WAC regulations do not allow for construction prior to written approval from WDOH. If a person starts construction before the project report is approved, they take are assuming risks, including the risk of needing to remove a component that is not approved in the project report. For example, if a 10 inch distribution main is installed and WDOH determines that a minimum 12 inch main is needed, the 10 inch line would need to be replaced with a 12 inch line before the project could be used.

The meeting adjourned at 2:20PM

(17) Root Cause Analysis CR-2010-1657 Signed 110210.PDF

EXHIBIT 25

Root Cause Analysis Report

Potential Adverse Trend –
Environmental Regulatory Requirements for Construction Projects Not Met

EM-RL—CPRC-GENLAREAS-2010-0013

October 19, 2010

Root Cause Team Lead:	Paul W. Martin PER EN Dodd III TELECOM	Date: 11/1/10
Environmental Manager:	Paul W. Martin PW Martin	Date: 11/1/10
Responsible Manager:	DP Kimball DP Kimball / KH Dorr	Date: 11-1-10
ESRB Chairman	VM Pizzuto VM Pizzuto, Vice President, CHPRC	Date: 11/2/10

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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 3
2.0 EVENT DESCRIPTION/NARRATIVE 3
3.0 EXTENT OF CONDITION / GENERIC IMPLICATIONS 5
4.0 PRECURSOR/HISTORICAL REVIEW 5
5.0 EVALUATION OF ASSESSMENT PERFORMANCE 5
6.0 PROBLEM ANALYSIS 5
- 6.1 Analysis Description 5
- 6.2 Human Performance Issues (HPI) 6
- 6.3 Root Cause(s) 6
- 6.4 Contributing Causes(s) 7

7.0 CORRECTIVE ACTIONS 8
- 7.1 Remedial Actions 8
- 7.2 Corrective Actions: 8

8.0 LESSONS LEARNED 8
9.0 DOCUMENTS REVIEWED 8

ATTACHMENTS

Timeline for 100K Water Treatment System Issue (CR-2010-1657)
Comparative Timeline for 100K Water Treatment System Issue
Missed Opportunity Matrix
Diagram of Causal Relationships

1.0 EXECUTIVE SUMMARY

Since May, 2010, the CHPRC has identified two instances where projects were found to have initiated construction on a project before the environmental documents were submitted and/or approved by authorizing agencies. These instances are noted in CR-2010-1340, *Initiation of potable water line construction prior to a Washington Department of Health approval*, and CR-2010-1608, *Initiation of 100-K Area Water Treatment System construction prior to completion of environmental compliance reviews/approvals.* On June 8, 2010, CHPRC issued Occurrence Report EM-RL-CPRC-GNELAREAS-2010-0013, "Initiation of Construction Activities on Water System Installations Prior to WDOH Approval" to document this issue as a management concern and ensure a higher level review and analysis was performed (reference CR-2010-1657).

The problem statement was defined as:

> Based on recent events, it is evident that important environmental requirements and constraints on activities are not being considered in the planning and execution of project schedules.

A root cause analysis was performed and the root causes were identified as:

- Required environmental permits and authorizations were not sufficiently identified during the project planning phase, including the dates approvals were needed in comparison to the dates construction activities would commence.
- Individuals believed that an environmental, regulatory "at-risk" position was acceptable to the regulators and the CHPRC, and was necessary for meeting the accelerated project schedule.

2.0 EVENT DESCRIPTION/NARRATIVE

The event considered in this evaluation is a combination of the two events that occurred at 200 East and 100K. In summary both events resulted in the execution of project scope without the proper environmental documentation being approved as required. Similar failures in two separate projects by two different teams of project management personnel resulted in the generation of Occurrence Report EM-RL--CPRC-GENLAREAS-2010-0013 and this root cause analysis. The summary information from each of the events is provided below.

200 East

On May 3, 2010 a new drinking water system installation at the 200 East Area was found to have begun construction prior to obtaining required written approval of the Project Report from the WDOH. The Project Report had been submitted to WDOH and approval was imminent. Upon discovery, work on the drinking water system was stopped, WDOH was contacted and approval was obtained via email on May 4, 2010.

Upon identification of the 200 East Area event the following immediate actions and/or corrective actions were implemented (Reference CR-2010-1340):

- Central Engineering Manager and the EPC Vice President were notified and installation work was stopped.

- MSA Water Utilities, the organization that is the drinking water purveyor for this location discussed the urgent need for an approval of the Project Report with the WDOH engineer. The WDOH engineer issued an email approval for the project on May 4, 2010 allowing work to restart.
- A lessons learned document was developed by MSA and distributed.
- Apparent causes were identified as:
  - A3B3C06 – Individual underestimated the problem by using past events as basis
  - A4B1C01 – Management policy guidance/expectation not well-defined understood or enforced.
- An investigation of other projects (Extent of Condition Review) identified the construction of a new combination fire suppression and temporary drinking water system at 100K Area with a similar issue to the 200 East event (see below).

100K:

On May 18, 2010, it was determined that construction had begun prior to submission and approval of the Project Report by WDOH for the temporary drinking water system at 100K. On May 26, 2010, it was also determined that the National Environmental Policy Act (NEPA) categorical exclusion (CX) had not been obtained prior to start of construction on the combined fire and drinking water import line. DOE was contacted and the CX approval was obtained on May 27, 2010 from the DOE Hanford Site NEPA Compliance Officer. The Project Report was submitted to WDOH for review and approval on June 8, 2010. In neither case was the drinking water system installation completed or placed into service prior to obtaining the required approvals.

Upon identification of the 100K area event the following immediate actions and/or corrective actions were implemented (Reference CR-2010-1608):

- Following initial discovery the Vice President of Environmental Program and Strategic Planning immediately raised the concern with the Vice President, D&D, and evaluations of project compliance were initiated.
- Following discovery of the incomplete NEPA review, the DOE NEPA Compliance Officer was notified of the situation. He signed the CX on May 27, 2010, completing the NEPA review. The DOE NEPA Compliance Officer requested that this issue be addressed in a CHPRC Management Assessment or equivalent.
- Two review meetings were conducted with 100K to identify any other outstanding environmental requirements. As a result of this review, a request was made to CHPRC Environmental Protection Air Subject Matter Expert (SME) to evaluate air permitting requirements for an emergency diesel fire pump.
- During the week of June 1, 2010, work was suspended on portions of the project that clearly required WDOH approval.
- On June 2, 2010, the Project Report was formally transmitted to WDOH for review and approval.

The combination of the two separate events was determined to be a significant issue – noncompliance with the requirements of WAC 246-290-110(2) and -125(1); 10CFR 1021.210(b);

and PRC-PRO-EP-15333, Sections 5.4 and 5.7. The two events also represented a management concern worthy of reporting into ORPS and Occurrence Report EM-RL--CPRC-GENLAREAS-2010-0023 was issued on June 8, 2010. A Condition Report was developed to capture the ORPS report and to document the broader programmatic evaluation. The following immediate actions and/or corrective actions were implemented:

- CHPRC Environmental Protection met with WDOH to clarify regulatory requirements
- A briefing workshop was provided to Environmental Compliance Officers on drinking water system regulatory requirements.
- PRC-PRO-EP-15333 was amended to strengthen and clarify drinking water system requirements.
- A Lessons Learned session was conducted with MSA on joint issues pertaining to the 200 East drinking water system construction. MSA will develop and issue a Lessons Learned by October 1, 2010.

CHPRC performed a Root Cause Analysis considering both the 200 East and the 100K events. The analysis considered the information from the 200 East event report and included discussions with personnel knowledgeable about the event. The information from the 200 East event was combined with the analysis of the 100K event to determine the root causes for the both events. The root causes identified and the corrective actions developed support the resolution of the management concern.

3.0 EXTENT OF CONDITION / GENERIC IMPLICATIONS

Based on a review of the documents provided and the root and apparent cause determination an extent of condition review should be conducted:

- Require all project managers to review their projects to ensure that schedules are sufficiently detailed and that all necessary environmental documents are completed and approved prior to implementation of activities.

4.0 PRECURSOR/HISTORICAL REVIEW

No historical precursor events were found related to this issue.

5.0 EVALUATION OF ASSESSMENT PERFORMANCE

There were no surveillances performed that would have identified this issue.

6.0 PROBLEM ANALYSIS

6.1 Analysis Description

The Phoenix Assessment technique was used. The process uses eight questions:

- What are the consequences?
- What is the significance?
- What set up the situation?
- What triggered the event?
- What made the consequences as bad as they were?
- What kept the consequences from being a lot worse?
- What should be learned from it?

- What should be done about it?

Attached is a timeline developed in preparation for the root cause analysis, and revised as a result of the discussions at the meeting. This timeline was used to evaluate the activities in development of a comparative timeline. The comparative timeline was then used to develop the missed opportunity matrix. Using the comparative timeline and the missed opportunity matrix, a combination of the Phoenix questions and the "Five Whys" technique were used to determine the apparent causes from the contributing causes and ultimately to determine the root causes.

Root Cause Team members were:
Edwin N. Dodd III – Root Cause Analysis Leader
Karen R. Morris – Assistant Root Cause Analysis Leader
Dottie L. Norman – Demolition &Decommissioning (D&D) Environmental Director
Steven M. Moore – D&D Maintenance
Daniel P. Kimball – Engineering, Project and Construction (EPC) ESH&Q Manager
Max L. Edington – EPC Project Manager
Usama (Sam) E. Wajeeh – EPC Project Engineer
Allan E. Cawrse – Environmental Protection (EP) Director
Richard H. Engelmann – EP, Regulatory Services and Reporting Manager
Stephen T. Smith – Environmental Quality Assurance, Manager
Paul W. Martin – EP/EPC Environmental Manager
Jeannie R. Seaver – EP Water SME
Fen M. Simmons – EP Air SME

6.2 Human Performance Issues (HPI)

Human performance issues were identified in each of the conditions evaluated. Specifically, there was an assumption based on prior experience that verbal communication and informal process implementation with regulators was adequate to ensure compliance with requirements. This HPI issue was noted in both the 200 East and 100K conditions.

The human performance issue is addressed in corrective actions 1 and 2 identified in the Attachment A, "Corrective Action Plan".

6.3 Root Cause(s)

Using the Phoenix Analysis process and the "Five Whys", two root causes were identified for the adverse condition:

RC-01

Management expectations were not clearly understood concerning unacceptability of proceeding at risk concerning environmental, regulatory approvals. Also PRC-PRO-EP-15333 had not explicitly defined drinking water approval process and that no work may be started until all documents are approved. It was also not clear if PRC-PRO-EP-15333 was appropriately used by personnel to ensure compliance. Also regulations and procedures did not clearly define what constituted "construction".

Furthermore, the Environmental Activity Screening Form (EASF) checklist did not have the drinking water requirements checked as applicable to the 100K project.

A4B1C01 - Management policy guidance/expectations not well-defined understood or enforced.

RC-02

Individuals relied on past experience with WDOH regulators and previous drinking water installation projects outside of Hanford and the DOE Complex. Due to this experience individuals believed that:

- WDOH would informally allow the simultaneous preparation and review of the Project Report while construction activities such as excavations and placement of material commenced
- An environmental, regulatory "at-risk" position was acceptable to the regulators and the CHPRC
- Risk was believed to be in terms of project cost and schedule as opposed to environmental compliance since regulators appeared to be not concerned.

The "at-risk" position was also considered necessary to meet the fast-track project schedule. WDOH confirmed to CHPRC that they know and may informally allow projects to proceed at-risk even though the regulations do not allow for this interpretation.

A3B3C06 – Individuals underestimated the problem using past events as a basis.

6.4 Contributing Causes(s)

The project schedule was revised and but did not contain line items for permits or provide sufficient detail with regard to the development of environmental documents and obtaining regulatory approvals.

While the Project environmental staff were regularly involved by attending project status and schedule meetings the involvement did not result in the identification of additional or changed environmental requirements or the inclusion of specific approvals in the project schedule. The result was that as the project evolved there was no recognition in the project documentation that environmental permits were required for the project.

It was determined by the root cause team that at a minimum the involvement of the Project environmental staff should have resulted in the recognition that the schedule was not adequate and needed revision to identify the required permits prior to authorization of construction. The procedures as written as the time of this issue did not require revision of the EASF as the project evolved..

A4B5C09 – Change related documents not developed or revised.

There were several changes in the project management staff and to the project schedules. It was determined that the change management process was inadequate to ensure the continuity of the project through these changes

The lead engineer in the project was provided insufficient environmental assistance for the amount of activities he was assigned to perform. The lead engineer had experience with the installation of other water systems and that WDOH would informally allow

construction activities to proceed "at-risk" ahead of written approval. This at-risk interpretation, the number of activities assigned to the project engineer and the project schedule contributed to accepting an at-risk position. No additional concurrence of this at-risk interpretation was pursued.

- The root cause team also determined that the involvement of the water subject matter expert was late in the project. Involvement of the water SME earlier in the project would have ensured that the necessary permits were identified and they would have been captured in the project documents such as the schedule and project plan.

  A4B4C07 – Too many concurrent tasks assigned to worker.

  A4B5C07 – Effects of change on schedules not adequately addressed.

- There was a failure to recognize and provide sufficient planning for the drinking water system regulatory requirements. Additionally, the EPC Project Review Board (PRB) had an opportunity to evaluate the 100K project. However, the PRB performs a very high level review. The PRB does not review 100% of the environmental documentation and in this case, did not conduct an in depth permitting review. Had the PRB performed a more detailed review it is expected that the missing environmental permits/documents would have been identified and construction would not have been authorized.

  A3B3C04 – Less than adequate review based on assumption that process assumptions will not change.

7.0 CORRECTIVE ACTIONS

7.1 Immediate Actions

Immediate actions identified in the timeline and the CRs discussed above were determined by the root cause team to be adequate to address the issues with the 100K project. An Apparent Cause Analysis had already been completed for the 200 East area event and the causes identified were consistent with those identified in the subsequent 100K event. Corrective actions were already addressed for the 200 East area event.

7.2 Corrective Actions:

See Attachment A for the Corrective Action Plan.

8.0 LESSONS LEARNED

A Lessons Learned addressing condition CR-2010-1340 will be developed by MSA and published in the Hanford Information Lessons Learned Sharing (HILLS) system by October 1, 2010.

A Lessons Learned addressing the adverse trend indentified in CR-2010-1657 will be developed and submitted to the CHPRC Lessons Learned Coordinator by November 19, 2010 for consideration for publication in HILLS.

9.0 DOCUMENTS REVIEWED

- CR-2010-1340
- CR-2010-1608
- CR-2010-1657

- PRC-PRO-EP-15333, *Environmental Protection Processes*, Revision 0, Change 7
- PRO-PRO-EP-15335, *Environmental Permitting and Documentation Preparation*, Revision 0, Change 4
- Project Review Board Meeting Synopsis – 100K Utility Upgrades Task 1, April 7, 2010
- Project Review Board Meeting Synopsis – 100K Utility Upgrades April 21, 2010
- Timeline for 100K Water Treatment System Issue (CR-2010-1657)
- PRC-CHRT-PM-40249, *Project Review Board Charter*, Revision 0, Change 0
- PRC-PRO-PM-24889, *Project Initiation and Execution*, Revision 1, Change 1
- DOE O 413.3A, Change 1, *Program and Project Management for the Acquisition of Capital Assets*
- DOE G 413.3-12, *U.S. Department of Energy Project Definition Rating Index Guide for Traditional Nuclear and Non-Nuclear Construction Projects.*
- DOE G 413.3-8, *Environmental Management (EM) Cleanup Projects*
- Office of Environmental Management Project Definition Rating Index (EM-PDRI) Manual, February 2001, Revision 1

ATTACHMENTS

- Timeline for 100K Water Treatment System Issue

  100K Water Treatment System Is:

- Comparative Timeline for 100K Water Treatment System Issue

  Comparative Timeline Table 072710.docx

- Missed Opportunity Matrix

  Missed Opportunity Matrix for CR-2010-1

- Diagram of Causal Relationships

  Causal Charts for CR-2010-1657 09121

Attachment A: Corrective Action Plan

	Corrective Action	Deliverable	Actionee	Code addressed	Due date
		CR-2010-1657 Adverse Trend Corrective Actions			
1	Develop training for project management personnel regarding expectations to ensure that all required permits/documents are identified, in place and approved as necessary prior to starting construction or execution of activities. Emphasize that proceeding at risk is not an allowable or acceptable approach with regard to regulatory documents.	Provide training package to all Project Vice Presidents for presentation to all Project Lead Personnel. Closure evidence will consist of documentation denoting the training package was provided to all Project Vice Presidents for presentation to all Project Lead Personnel.	Allan Cawrse	A4B1C01 A3B3C06 A4B5C07	**Completed 10/14/10**
2	Issue material for the purpose of briefing /informing project managers regarding management expectations that environmental documents must be complete and approvals received prior to the execution of the project activities.	Closure evidence will consist of the material issued for briefing project managers, with instructions to document briefings on attendance rosters. Ensure briefing addresses the need for strict regulatory compliance, and comprehensive planning and identification of environmental requirements. Additional evidence will be a roster listing of those that have completed this briefing.	Victor Pizzuto	A4B1C01 A3B3C06 A4B5C07	11/30/10
3	Evaluate current environmental procedures and identify changes needed to ensure that there is a clear requirement for environmental requirements screening documents (e.g. Environmental Activity screening forms - see Section 5.1, PRC-PRO-EP-15333) to be updated as project design and development evolves. Evaluation must also consider other relevant procedures that govern activities listed in Table 1 (e.g.	Closure evidence will consist of a memo-to-file or equivalent documentation describing the evaluation and recommended changes.	Rick Engelmann	A4B5C09	12/6/10

Attachment A: Corrective Action Plan

	Corrective Action	Deliverable	Actionee	Code addressed	Due date
	project management procedures) for potential changes that would facilitate such updating.				
4	Propose changes to Environmental Protection procedures and forms per the recommendations resulting from Action #3, resolve comments and publish final changes. Provide written recommendation of changes to non-Environmental Protection procedures to procedure owners.	Publication of the revised Environmental Protection procedures, For non-Environmental Protection procedures, copy of recommended procedure changes provided to other procedure owners.	Allan Cawrse	A3B3C04	1/31/11
5	Hire additional personnel to ensure sufficient resources are available to address the environmental needs of the project.	Hired two new environmental lead personnel. This action is considered a compensatory action and closure evidence, other than a closure statement, is not required. Closure Statement - Two additional environmental leads have been hired. Lorna Dittmer was hired on May 24, 2010 and Paul W. Martin was hired on July 28, 2010.	Allan Cawrse	A4B4C07	**Completed 7/28/10**
6	MSA will develop and issue a Lessons Learned concerning the 200E event.	Development of a Lessons Learned by MSA and distribution via the Hanford Information Lessons Learned Sharing (HILLS) system.	Allan Cawrse	RC-2	**Completed 9/7/10**

Attachment A: Corrective Action Plan

	Corrective Action	Deliverable	Actionee	Code addressed	Due date
		Closure evidence will consist of a copy of the issued lessons learned.			
7	CHPRC will develop and issue a Lessons Learned that addresses the adverse trend indentified in CR-2010-1657. (Reference RC-01 and RC-02)	Development and submittal of a Lessons Learned to the Lessons Learned Coordinator for consideration for publication in HILLS.	Allan Cawrse	RC-01 & RC-2	11/19/10
8	CHPRC EP will develop and give a briefing for Environmental Compliance Officers concerning appropriate procedure usage, subject matter expert support, and unacceptability of proceeding "at-risk" (Re: RC-01 and RC-02)	Briefing material and briefing attendance roster.	Brian Dixon	RC-01 & RC-2	11/19/10
		CR-2010-1340 – 200 East Event Corrective Actions			
9	Stop execution of the unauthorized work	A phone call was made to Central Engineering Manager and the EHC Vice President and installation work was stopped. Per the Issues Manager, this action is considered to be a compensatory action and evidence other than a closure statement is not required.	Allan Cawrse	N/A	**Completed 5/18/10**
10	Obtain approval of the necessary environmental documents (Project Report) to authorize the work so work can resume.	On May 3 and May 4, 2010 MSA discussed the urgent need for approval with the WDOH engineer. The WDOH engineer issued an email approval for the project the morning of May 4, 2010 allowing work to restart.	Allan Cawrse	N/A	**Completed 5/4/10**
11	MSA will develop and issue a Lessons Learned concerning the 200E and 100K	Development of a Lessons Learned by MSA and	Allan Cawrse	N/A	**Completed 9/7/10**

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Attachment A: Corrective Action Plan

	Corrective Action	Deliverable	Actionee	Code addressed	Due date
	events.	distributed via Hills System. Closure evidence will consist of a copy of the issued lessons learned.			
12	Perform an extent of condition to see if similar conditions exist in other projects.	Closure evidence will consist of the completed Extent of Condition field in CR-2010-1657 answering the bulleted questions outlined in PRC-PRO-QA-0525 Appendix B as applicable to a "Significant Issue". Extent of condition revealed a similar issue at 100K.	Allan Cawrse	N/A	Completed 5/27/10
13	Perform a formal root cause analysis and issue a root cause analysis report documenting the apparent causes of the issue.	Complete and finalize a Root Cause Analysis Report documenting the apparent causes of the issue and upload to CR-2010-1657. Closure evidence consists of presenting this Root Cause Analysis Report to Executive Safety Review Board (ESRB).	Allan Cawrse	N/A	Completed 10/13/10
		CR-2010-1608 - 100K Event Corrective Actions			
14	Evaluate extent of condition at 100K.	Following initial discovery the Vice President of Environmental Program and Strategic Planning immediately raised the concern with the Vice President, D&D and evaluations of the compliance	Moses Jaraysi	N/A	Completed 5/27/10

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Attachment A: Corrective Action Plan

	Corrective Action	Deliverable	Actionee	Code addressed	Due date
		posture of the project were started. No other similar conditions were indicated. Closure evidence will consist of the completed Extent of Condition field in CR-2010-1657 answering the bulleted questions outlined in PRC-PRO-QA-052, Appendix B as applicable to a "Significant Issue".			
15	Notify the DOE NEPA Compliance Officer of the incomplete NEPA review and have the DOE NEPA Compliance Officer complete the NEPA review.	Following discovery of the incomplete NEPA review, the DOE NEPA Compliance Officer was notified of the situation. He signed the Categorical Exclusion (CX) on May 27, 2010 completing the NEPA review. Closure evidence consists of the signed CX. [redacted] CX for 100 K Area Utilities Reroute, Dat	Allan Cawrse	N/A	Completed 5/27/10
16	Notify the NEPA Compliance Officer that the CX authorization issue was addressed as part of the CHPRC corrective action system (CR-2010-1657)	Notify the NEPA Compliance Officer via email and retain email as evidence of closure. Closure evidence consists of email from Rick Engelmann of	Allan Cawrse		Completed 6/7/10

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Attachment A: Corrective Action Plan

	Corrective Action	Deliverable	Actionee	Code addressed	Due date
		CHPRC to Woody Russell of DOE RL dated June 7, 2010. Closure Evidence for CR-2010-1657 Corre			
17	Evaluate project environmental requirements for the 100K project as a whole.	Two review meetings were conducted with the project to identify any other outstanding environmental requirements. A request was made to CHPRC Environmental Protection All SMB to evaluate air permitting requirements for the emergency diesel fire pump. It was determined that the fire pump met the Washington Administrative Code (WAC) exemption and therefore no permitting was required.	Allan Cawrse	N/A	**Completed 5/27/10**
18	Complete environmental documentation via submitting the Project Report to the Washington Dept. of Health and receiving approval from WDOH.	On June 8, 2010, the Project Report was formally transmitted to WDOH for review and approval. Closure evidence will consist of the email received from WDOH on August 3, 2010 approving the Project Report. Closure Evidence for CR-2010-1657 Corre	Allan Cawrse	N/A	**Completed 8/3/10**
Management Concern (CR-2010-1657) Immediate Corrective Actions					

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	Corrective Action	Deliverable	Actionee	Code addressed	Due date
19	Meet with WDOH to clarify regulatory requirements concerning the definition of "prior to installation or construction" of a water system prior to receiving approvals from WDOH. Also discuss ARRA stimulus money issues with accelerated schedules and approvals.	CHPRC Environmental Protection Vice President Moses Jaraysi and Environmental Director, Allan Cawrse met with WDOH on May 18, 2010. Results of meeting were that even though in the past, WDOH informally allowed construction of a water system to commence prior to formal receipt of approvals for the Project Report per WAC 246-290-110(2), approval must be received prior to installation or construction of a water system. Therefore noncompliance with WAC 246-290-110(2) had occurred.	Allan Cawrse Moses Jaraysi	N/A	Completed 6/18/10
20	Reinforce to ECOs management expectations that ECOs do not have to operate totally independently when dealing with unfamiliar requirements. ECOs should take advantage of the expertise available within Environmental Protection to discuss and clarify new environmental requirements to ensure full compliance.	On May 27, 2010, Allan Cawrse attended the ECO Staff meeting and reinforced to ECOs the management expectations that ECOs do not operate totally independently when dealing with unfamiliar requirements. Mr. Cawrse stated that ECOs should take advantage of the expertise available within Environmental Protection to discuss and clarify new environmental requirements to ensure full compliance.	Allan Cawrse	N/A	Completed 5/27/10

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Attachment A: Corrective Action Plan

	Corrective Action	Deliverable	Actionee	Code addressed	Due date
21	Submit an occurrence report to document the similar environmental compliance failures occurring at 200E and 100K.	On June 4, 2010 CHPRC senior management determined the overall situation described above was a management concern and notification was made to the ONCI On June 8, 2010 CHPRC issued Occurrence Report (EM-RL-CPRC-CNEL-AREAS-2010-0013) "Initiation of Construction Activities on Water System Installations Prior to WDOH Approval"	Allan Cawrse	N/A	Completed 6/8/10

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Kennedy, Colburn E

EXHIBIT 26

From:	Edington, Max L
Sent:	Tuesday, May 18, 2010 3:33 PM
To:	Kehler, Kurtis L
Cc:	Kennedy, Colburn E; Norman, Dottie L; Wajeeh, Usama E
Subject:	100K Water System Replacement Project

Kurt,

Per our earlier discussion, we have reviewed the status of the 100K water system replacement project relative to the applicable regulations of the State of Washington Department of Health. The following is a brief history and status.

On October 6, 2009 a meeting was conducted with Mike Wilson of the Department of Health (DOH) at the regional office in Spokane attended by representatives of CHPRC, ARES, and DOE. At the meeting, CHPRC and ARES presented the fast-paced project to install a microfiltration treatment plant that eliminated the current feed from the Columbia River. It was agreed that ARES would submit a request to waive the normal treatability pilot study by using the justification that the same PALL Corporation microfiltration technology is in place at the Pasco water treatment facility. The waiver request was submitted to DOH on January 11, 2010. On February 17, 2010 DOH responded in a letter approving the waiver of the pilot study.

Although we have been in communication with DOH on the project, State code WAC 246-290-110 requires that a project report to be submitted prior to water system construction, expansion, or improvement. Our current schedule has a submittal date for our project report on May 28 for RL concurrence and subsequent submittal to DOH. We are on track to meet the submittal date. However, as we are also in the early stages of construction on the treatment plant and water distribution system, we are not compliant with requirement WAC 246-290-110.

Following CHPRC senior management's meeting earlier today with DOH, we have been directed to continue with our construction activities. Whereas it is apparent that DOH may not be fully pleased with commencing construction prior to the receipt and concurrence with the project report, it is not a critical misstep. Therefore, at this time we will thoroughly review all of our project requirements, work to submit our project report as early as possible, and engage DOH further on our project status.

Let me know if you require more information.

Max

1

EXHIBIT 27

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

June 1, 2010

CHPRC-1000439

Mr. M. D. Wilson, Regional Engineer, Eastern Regional Office
Office of Drinking Water
State of Washington Department of Health
16201 E. Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216

Dear Mr. Wilson:

SUBMITTAL OF PROJECT REPORT FOR 100K POTABLE WATER FACILITY

Please find attached the Project Report for the 100K Potable Water Facility, as required by WAC 246-290-110, for your review and approval.

The existing and operational 100K Water Treatment Facility will remain in operation during operational testing to determine effective pre/post filtration chlorine (sodium hypochlorite) dose rate and coagulant (aluminum chlorohydrate) dose rate. A formal approval from the State of Washington Department of Health will be obtained prior to establishing the new water treatment system as its sole source of potable water production at the 100K Area.

We anticipate that the attached document will provide the necessary information to make a determination for the approval of the 100K Potable Water Facility.

Matters pertaining to this letter have been discussed with E. M. Bowers of U.S. Department of Energy, Richland Operations Office (RL). You may contact me at 376-0556, or your staff may contact U. E. Wajeeh at (509)373-1830 or by e-mail at Usama_E_Wajeeh@rl.gov with any questions regarding this matter.

Sincerely,

John G. Lehew III
President and
Chief Executive Officer

uew/llm

Attachment

cc: E. M. Bowers, RL
L. Erickson, RL
K. L. Flynn, RL

RECEIVED
JUN 03 2010
DEPARTMENT OF HEALTH
EASTERN REGIONAL OFFICE

Kennedy, Colburn E **EXHIBIT 28**

From: Jarayst, Moses
Wednesday, June 02, 2010 11:38 AM
Lehew, John G; Kenier, Kurtis L; Kennedy, Colburn E
Cc: Cawrse, Allan E
Subject: FW: Fire System Applicability

Good morning all

Based on the revew below, we can now confirm that the Fire System is not under DOH's autnority. There are parts of this system that have dual purpose (both potable water and Fire System), those have to comply with the Safe Drinking Water regulations

This does not change our path forward as discussed yesterday. We need to get this Project Report (permit) into DOH's hands as soon as possible and within a week should be talking to DOH in person. In the mean time we can go ahead with the Fire System installation (including the building), but should slow down on the drinking water system, until we have DOH's approval.

MJ

From: Cawrse, Allan E
Sent: Wednesday, June 02, 2010 6:31 AM
Swenson, Raymond T; Seaver, Jennie R
Engelmann, Richard H; Dixon, Brian J; Jarayst, Moses; Bensussen, Stanley J
Subject: Re: Fire System Applicability

Ray,

(b)(5)

(b)(5) We'll talk.
Al

From: Swenson, Raymond T
To: Seaver, Jennie R; Cawrse, Allan E
Cc: Engelmann, Richard H; Dixon, Brian J; Jarayst, Moses; Swenson, Raymond T; Bensussen, Stanley J
Sent: Tue Jun 01 18:08:33 2010
Subject: RE: Fire System Applicability

(b)(5)

(b)(5)

Raymond Takashi Swenson
Senior Counsel

CH2M Hill Plateau Remediation Company
land, Washington
376-3511 Office
(b)(6) BlackBerry
509-376-0334 Fax
Raymond_T_Swenson@rl.gov

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From: Seaver, Jennie R
Sent: Tuesday, June 01, 2010 1:37 PM
To: Cawrse, Allan E; Swenson, Raymond T
Cc: Engelmann, Richard H; Dixon, Brian J; Jaraysi, Moses
Subject: RE: Fire System Applicability

(b)(5)

Just FYI for Ray in case he's looking into it.

From: Cawrse, Allan E
Sent: Tuesday, June 01, 2010 1:17 PM
To: Swenson, Raymond T
Cc: Engelmann, Richard H; Seaver, Jennie R; Dixon, Brian J; Jaraysi, Moses
Subject: Fire System Applicability

Ray,

will be heading out to 100K area tomorrow. Sam Wajeeh, the project engineer is tied up getting the project report .oday – so tomorrow is the plan. Brian is shooting for about a 1:30PM sit-down out there to go over requirements.

(b)(5)

Let me know your thoughts (b)(5)
Thx - Al

Allan E. Course
Director, Environmental Protection
Plateau Remediation Company
2420 Stevens Center
509 376-3143 (desk)
(b)(6)

3

EXHIBIT 29

Edington, Max L

From: Wajeeh, Usama E
Sent: Monday, June 07, 2010 11:52 AM
To: Kennedy, Colburn E
Cc: Cawrse, Allan E; Kehler, Kurtis L; Norman, Dottie L; Edington, Max L
Subject: FW: Discussion with Mike Wilson (WDOH) Regarding 100K Project Report Submittal

Colburn,

Please see summary of my conversation with Mike Wilson (WDOH) this morning below:

Project: New Water Treatment System for the 100K Basin
Date of Phone Discussion: June 7, 2010
Time: 9:15 AM – 9:30 AM
Person Called: Mike Wilson (Regional Engineer -Department of Health Regional Office (WDOH) – Spokane, WA)
Caller: Sam E. Wajeeh (100K Project Engineer - CH2M Hill Plateau Remediation Company (CHPRC))

At the request of Max Edington, I contacted Mr. Mike Wilson of the Washington Department of Health (WDOH) to arrange a time to meet with him to discuss the recently submitted project report and to provide him with a status of our preparatory activities for the 100K Water Treatment System. A meeting was requested with Mr. Wilson for later this week or early next week to go over any issues he or Mr. Sam Perry (WDOH – Olympia) may have in regards to content of CHPRC's submittal of the project report.

Mr. Wilson explained that he did not see a need for a meeting until he has and his fellow colleague, Mr. Sam Perry had an opportunity to review the project report. Mr. Wilson recommended that we set a meeting with him after July 6th, which is when he expects to receive final comments from Mr. Sam Perry.

Due to the fact that the 100K Infrastructure project is funded by the American Recovery and Reinvestment Act (ARRA), CHPRC is moving forward with certain activities in order to meet the aggressive schedule requirements. I stated the 100K project is moving forward with site preparatory work for the 750,000 gallon dual use water tank, foundation work and underground piping for the water treatment facility building, installation of the fire and potable water system with approximately 25% of the fire main and 20% of the potable water distribution system already installed.

Mr. Wilson explained that CHPRC construction activities are being performed at risk. Based upon the review of the project report and construction documents, the Department of Health may request changes to the system and those would be at project cost. It is Department of Health's expectation that the changes would be made by CHPRC to correct any outstanding issues and issuance of the final permit.

CHPRC explained to Mr. Wilson that construction documents would be forthcoming and asked if he would prefer full size (ANSI F) or half size (11"X17") sets. He replied by saying that four (4) copies of full size set of drawings would be preferred.

Sam E. Wajeeh

EXHIBIT 30

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

June 16, 2010

Usama Wajech, PE
CH2M Hill
PO Box 1600
Richland, WA 99352

Subject: Energy, Dept Of/100K; PWS ID #00177J; Benton County
100K Area Water Treatment System Project Report; DOH Project # 10-0207B

Dear Mr. Wajech:

We received the documents for the above-named project on June 03, 2010. We are now reviewing these documents.

To better track your project, we have assigned it a unique project number: **#10-0207B. Please use this number on all future correspondence about this project.**

We are authorized by state regulations to charge a fee for reviewing water system plans, reports, and construction documents. I have enclosed a copy of our fee schedule.

We will send you an invoice for this fee after our initial review of your engineering documents. Payment is due at that time. The base fee includes our initial review, and review of one resubmittal if needed. If additional reviews are needed, we will send you a separate invoice.

Thank you for giving us the opportunity to serve you. We look forward to working with you to ensure your community has safe and reliable drinking water at the tap. Please call me at (509) 329-2117, if you have any questions.

Sincerely,

for Michael Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosure

cc: Benton-Franklin County Health District; Benton
Steven Moore, Department of Energy 100K
Valori Adams, DOH Compliance Coordinator

Notice: Anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service connection, and may be required to expose system components for our inspection at their own expense. The Department of Health may be unable to accept any component that is installed or constructed prior to approval.

31

EXHIBIT 31

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

June 23, 2010

CHPRC-1000504

Mr. M. D. Wilson, Regional Engineer, Eastern Regional Office
Office of Drinking Water
Washington State Department of Health
16201 E. Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216

Dear Mr. Wilson:

SUBMITTAL OF CONSTRUCTION DOCUMENTS FOR 100K POTABLE WATER FACILITY

CH2M HILL Plateau Remediation Company (CHPRC) Project Team is providing you with construction documents for the 100K Potable Water Facility, as required by WAC 246-290-120, for your review and approval. The construction documents provided will supplement the Project Report submitted to your office for review on June 3, 2010.

Enclosed are the following drawings and specifications:
1. Four (4) copies of the 100K Area Water Line and Water Filtration Drawings
2. Four (4) copies of the 100K Water Treatment Facility Plan Drawings
3. Four (4) copies of the 100K Export Water Line Drawings
4. Four (4) copies of the Construction Specification for 100K Fire Protection and Water Lines
5. Four (4) copies of the Construction Specification for 100K Water Export Line
6. Four (4) copies of the Construction Specification for 100K Water Line and Filtration System
7. Four (4) copies of the Procurement Specification for Water Storage Tank
8. Four (4) copies of the Procurement Specification for Microfiltration System

You may contact me at 376-4153, or your staff may contact U. E. Wajeeh at (509) 373-1830 or by e-mail at Usama_E_Wajeeh@rl.gov with any questions regarding these submittals.

Sincerely,

Max L. Edington
Project Manager
100K D&D

uew/mle

Enclosure
RL – E. M. Bowers L. Erickson K. L. Flynn

EXHIBIT 32

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

July 8, 2010

Usama E. Wajeeh, PE
CH2M Hill Plateau Remediation Company
PO Box 1600
Richland WA 99352

Subject: Energy, Dept of/100K; PWS ID # 00177J; Benton County
100K Area Water Treatment System Project Report; DOH Project #10-0207B

Dear Mr. Wajeeh:

The Department of Health (DOH) Office of Drinking Water has reviewed the project report received in this office on June 3, 2010, for the new membrane facility. The following comments must be addressed before I can complete my review:

1. The Project Report needs to be stamped by a Professional Engineer licensed in the state of Washington.
2. Water for fire protection, nuclear safety and service water is pumped from the same storage tank (RW-TK-1) that provides raw water to the new water treatment plant. Has a cross-connection specialist reviewed the fire and service line designs? Is backflow prevention (using DOH-approved backflow assemblies) needed to prevent contamination of the raw water storage tank?
3. The Export Water Line will be the water source for the new treatment plant. Therefore, the minimum temperature and maximum pH observed in the Export Water Line (Table 4-1) should be the values used in the CT calculations instead of the data from 100K's existing Columbia River withdrawal point. Please redo the CT calculations using the Export Water Line values and verify that the proposed contact volumes provide adequate inactivation.
4. The current design requires two different peak flow measurements for the CT calculations: the flow from the post-chlorination tank (PW-TK-PC1) and the flow from the potable water surge tank (PW-TK-CW1). The instrumentation diagrams show a flow meter (FM-201) downstream of the potable water surge tank, but no flow meter is shown downstream of the post-chlorination tank.
5. Cross-connection control measures are required to prevent chemicals from the cleaning process from contaminating the feed or filtrate streams. A double block and bleed valving arrangement with a drain to waste or a removable spool is commonly used. Please refer to Section 7.3.4 Cross-Connection Control of EPA's Membrane Filtration Guidance Manual (EPA 815-R-06-009).

6. Please move the combined filter effluent turbidimeter to the combined filter effluent line upstream of post-filtration hypochlorite injection.
7. The ability to isolate the 2,500 gallon and 12,000 gallon tanks must be provided.
8. The schedule indicates that some potable water components have been or are being installed. Please note that anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service connection [WAC246-290-050(7)], and may be required to expose system components for our inspection, at their expense. DOH may be unable to accept any component that is installed or constructed prior to approval.

Design Suggestions (no response is required):

9. The design and operations could be simplified by eliminating the FW-P-MF and PW-P-CT pumps (and the related FW-TK-CO1 and PW-TK-PC1 tanks) and use the RW-P-FD pumps to pump directly from the raw water storage tank (RW-TK-1), thru the membranes, to the potable water surge tank (PW-TK-CW1).
10. The 6-inch contact pipe (882 LF) design is based upon a Reynolds number that provides turbulent flow. While this is correct, a 12-inch diameter (approx. 222 LF) pipe (or similar diameter) would be acceptable because of the high length to width ratio. This would reduce the amount of pipe needed to be installed.
11. The CT monitoring and calculations could be simplified by having just one inactivation sequence using the contact pipe.

Thank you for this opportunity to review and comment on your project. Please format your response so there is a one-to-one correspondence with the comments numbered above.

In accordance with WAC 246-290-990, the review of engineering documents is subject to a review fee. Enclosed please find an invoice for $710.00.

Please contact me at (509) 329-2117, if you have any questions concerning this letter.

Sincerely,

Michael D. Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosure: Invoice

cc: Benton-Franklin Health District
Steven M. Moore, Department of Energy

EXHIBIT 33

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

July 22, 2010

Usama Wajeeh, PE
CH2M Hill - Plateau Remediation Co
Po Box 1600, MS:X3-69
Richland, WA 99352

Subject: Energy, Dept Of/100K; PWS ID #00177J; Benton County
Construction Documents For 100K Potable Water Facility; DOH Project # 10-0207C

Dear Mr. Wajeeh:

We received the documents for the above-named project on July 01, 2010. We are now reviewing these documents.

To better track your project, we have assigned it a unique project number: **#10-0207C. Please use this number on all future correspondence about this project.**

We are authorized by state regulations to charge a fee for reviewing water system plans, reports, and construction documents. I have enclosed a copy of our fee schedule.

We will send you an invoice for this fee after our initial review of your engineering documents. Payment is due at that time. The base fee includes our initial review, and review of one resubmittal if needed. If additional reviews are needed, we will send you a separate invoice.

Thank you for giving us the opportunity to serve you. We look forward to working with you to ensure your community has safe and reliable drinking water at the tap. Please call me at (509) 329-2117, if you have any questions.

Sincerely,

Diana Jacobson
for Michael Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosure

cc: Benton-Franklin County Health District; Benton
Steven Moore, Department of Energy/100K
Valori Adams, DOH Compliance Coordinator

Notice: Anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service connection, and may be required to expose system components for our inspection at their own expense. The Department of Health may be unable to accept any component that is installed or constructed prior to approval.

EXHIBIT 34

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

July 22, 2010

CHPRC- 1000573

Mr. M. D. Wilson, Regional Engineer, Eastern Regional Office
Office of Drinking Water
Washington State Department of Health
16201 E. Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216

Dear Mr. Wilson:

SUBMITTAL OF WDOH PROJECT REPORT COMMENT RESPONSE FOR 100K POTABLE WATER FACILITY

CH2M HILL Plateau Remediation Company (CHPRC) received your comments from the review of the project report dated June 8, 2010 and discussed with WDOH in subsequent conversations on July 8, 2010. See below answers to your questions in the order received:

1. A replacement Cover Page for the Project Report stamped and signed by the Design Agent's Washington State licensed Professional Engineer is attached.

2. Mr. Michel Langevin (Cross-Connection Control Specialist; Cert. # 005328) has reviewed the 100K project drawing set for the new K Area water system and identified two separate backflow preventers that are in the system: PW-BP-301 (drawing H-1-91512 sheet 7 & H-1-91514 sheet 4) & PW-BP-302 (drawing H-1-91514 sheet 5). Both of these are identified in the P&ID legend (H-1-91512 sheet 1) as reduced pressure back flow preventers and, as such, offer the highest level of backflow protection available from mechanical devices. Both of the backflow preventers are identified as 1 inch FEBCO model 680's (see note 3 on drawing H-1-91514 sheet 4 and note 4 on drawing H-1-91514 sheet 5). A 2010 listing of Washington State Department of Health approved backflow preventers did not include any FEBCO 680 models in it. The intention of the project was to indicate a FEBCO 860 to be installed. The construction drawings will be revised to reflect the necessary change.

3. A new Chorine Contact Time (CT) calculation using recent raw water quality data for the Export Water Line (Source S03) has been generated as a supplement to the original and is attached. It is noted that the high pH of 9.9 was observed in early summer of 2007, and over the recent years pH values have declined steadily. It is also noted that periods of high pH are not coincident with periods of low water temperature. Finally, the attached calculation uses the maximum system flow rate of 50 gpm. Thus the results are considered to represent a very unlikely "upper bound worst case" operating scenario for

the new facility. Results show that for the current design, under this operating scenario, required disinfection can be achieved at residual chlorine concentrations of 2.0 mg/L.

4. It is proposed that the CT calculations for reporting/compliance purposes fix the residence time associated with PW-TK-PC1 at 4 minutes; the corresponding flow rate is the system maximum of 50 gpm. Under this approach, no additional flow meter is required. Operating scenarios associated with a flow rate of 50 gpm are presented in the original calculation and its supplement (attached).

5. Double block and bleed valves on the feed and filtrate lines for both microfiltration units will be installed as recommended. Reference attached Piping & Instrument Diagram (H-1-91512), Sheets 4 and 5.

6. Only one (1) microfiltration unit will be operational at any given time; they will not be operated simultaneously. Thus, the turbidity meters in their current locations will accurately document filtrate turbidity; there is no "combined filter effluent".

7. This comment is interpreted to mean that bypasses should be installed so that the facility may continue to provide potable water during tank maintenance activities (if necessary). These bypasses will be installed and residual chlorine levels will be adjusted as necessary during these activities. Reference attached Piping & Instrumentation Diagram (H-1-91512), Sheet 6.

8. Comment noted.

If you have questions, feel free to contact me at 376-4153, or your staff may contact U. E. Wajeeh at (509) 373-1830 or by e-mail at Usama_E_Wajeeh@rl.gov with any questions regarding these submittals.

Sincerely,

Max L. Edington
Project Manager
100K D&D

uew/mle

Enclosure
RL E. M. Bowers L. Erickson K. L. Flynn

EXHIBIT 35

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

August 3, 2010

Usama E. Wajeeh, PE
CH2M Hill Plateau Remediation Company
PO Box 1600
Richland, WA 99352

Subject: Energy, Dept of/100K; PWS ID #00177J; Benton County
100K Area Potable Water Facility Construction Documents
DOH Project #10-0207C

Dear Mr. Wajeeh:

The Department of Health (DOH) Office of Drinking Water has reviewed the construction documents received in this office on July 1, 2010, for the new membrane facility. The following comments must be addressed before I can complete my review:

Specifications:

1. There is no detailed information regarding start-up, testing, and operation of the entire treatment facility, once it is completed. Most constructions documents include a separate section of the specifications that addresses overall commissioning of the facility. Please provide a separate section on facility commissioning that identifies start-up and testing responsibilities, procedures (such as pressure, leakage, and bacteriological testing), disposal of test water, and certification of completion.

2. Section 13122, Process Tanks. Provide specifications for disinfecting and testing the finished water tanks. We recommend that AWWA Standard C652 or similar construction standard be used in revising this section of specifications.

3. Section 15100, Process Piping Systems. Provide specifications for disinfection and bacteriological testing of the potable water piping. We recommend using the AWWA C651 standard.

Drawings:

4. Provide revised drawings showing the double block and bleed valving arrangement as proposed in Item 5 from your July 22, 2010, project report comment response letter.

5. Provide revised drawings showing the bypass for tanks PW-TK-PC1 and PW-TK-CW1 as proposed in Item 7 from your July 22, 2010, project report comment response letter.

6. Temperature information is needed to calculate the CT required to comply with the Surface Water Treatment Rule. Please provide instrumentation to measure the temperature at the same location as where the post filtration chlorine residual and pH are taken.

7. Provide the access hatch and vent details for the post-filtration tanks. The hatch needs to be sealed to prevent the entry of contaminants and the vent must have a down-turned opening covered with a 24-mesh non-corrodible screen.

8. The end of the overflow pipe for the post-filtration tanks needs to be screened or covered with a flapper valve to prevent entry of rodents, insects, etc.

9. For backflow protection, the tank overflows (and other similar discharges) must have an air gap of at least two pipe diameters between the free flowing discharge end of a potable water supply pipeline and the overflow rim of an open receiving vessel. Please include this note on the drawings. An example of this is where the tank overflow pipe discharges into the recycle sump.

Other:

10. An operations program that describes how the water treatment plant will be operated must be prepared and a draft submitted prior to the completion of construction. (Please refer to WAC 246-290-654(5) and Chapter 12 of the Water System Design Manual for details that should be included in the operations program).

Recommendations:

- Membrane filtration plants can be very noisy. It is strongly recommended that an enclosed space with a desk be provided for the operator to monitor the process and complete all necessary reports.

- If there is not a facility nearby, a restroom should be provided for the operators.
- Particle counters, as well as other means of indirect integrity monitoring, are prone to high readings, due to entrained air in the first few weeks following start-up of a new facility and following periods of lack of use. It is strongly recommended that bubble traps be installed on the feed line to the particle counters similar to those installed on other nearby membrane facilities.
- Drain valve(s) installed at low points in the new 12 inch RW line to facilitate draining (such as at Sta 12+00 on Drawing No. H-1-91184-3).

Thank you for this opportunity to review and comment on your project. Please format your response so there is a one-to-one correspondence with the comments numbered above.

In accordance with WAC 246-290-990, the review of engineering documents is subject to a review fee. Enclosed please find an invoice for $710.00.

Please contact me at (509) 329-2117, if you have any questions concerning this letter.

Sincerely,

Michael D. Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosure: Invoice

cc: Benton-Franklin Health District
Steven M. Moore, Department of Energy 100/K

EXHIBIT 36

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

August 5, 2010

Usama Wajeeh, PE
CH2M Hill Plateau Remediation Co.
PO Box 1600
Richland, WA 99352

Subject: Energy, Dept of/100K; PWS ID# 00177J; Benton County
100K Area Water Treatment System; DOH Project #10-0207B; APPROVAL

Dear Mr. Wajeeh:

The engineering report for the above project received in this office June 3, 2010, together with the comment responses received July 27, 2010, has been reviewed and, in accordance with the provisions of WAC 246-290, is hereby APPROVED.

If you have any questions please feel free to contact me at (509) 329-2117.

Sincerely,

Michael Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

cc: Benton-Franklin Health District
Steve Moore, Department of Energy, 100/K
George Simon, DOH WFI Administrator
Valori Adams, DOH Compliance Coordinator

EXHIBIT 37

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

September 15, 2010

Usama Wajeeh, PE
CH2M Hill Plateau Remediation Co
PO Box 1600
Richland, WA 98352

Subject: Energy, Dept of/100K; PWS ID# 00177J; Benton County
Const Docs for 100K Potable Water Facility; DOH Project #10-0207C
APPROVAL

Dear Mr. Wajeeh:

The plans and specifications for the above project received in this office July 1, 2010, together with the response to comments received August 25, 2010, have been reviewed and, in accordance with the provisions of WAC 246-290, are hereby APPROVED.

As required in WAC 246-290-040 – Within sixty days following the completion of, and prior to the use of, the above project or portions thereof, the attached Construction Report must be completed by a professional engineer and returned to this department.

WAC 246-290-120 provides that if the certification of completion has not been submitted within two years of the date of this letter, this approval will become null and void unless you take action at that time to arrange for an extension of the approval period in the manner prescribed.

In addition, you are required to submit a revised Water Facilities Inventory (WFI) at the time of certification in order that this new reservoir may be properly listed on your WFI.

If you have any questions please feel free to contact me at (509) 329-2117.

Sincerely,

Michael Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosures: Construction Completion Report

cc: Benton-Franklin Health District
Steven Moore, Department of Energy 100K
George Simon, DOH WFI Administrator
Valori Adams, DOH Compliance Coordinator

EXHIBIT 38

CH2M HILL
Plateau Remediation Company
PO Box 1600
Richland, WA
99352

CH2MHILL
Plateau Remediation Company

January 27, 2011

CHPRC-1100226

Mr. M. D. Wilson, Regional Engineer, Eastern Regional Office
Office of Drinking Water
Washington State Department of Health
16201 E. Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216

Dear Mr. Wilson:

Subject: Department of Energy 100K Water Treatment Facility PWS ID# 00177J; Benton County; Operational Performance Testing Report; DOH Project #10-0207D

In accordance with the Operational Testing Procedure (OTP) for the new 100K Water Treatment Facility submitted to the State of Washington Department of Health (WDOH) on August 11, 2010 and approved with comments by WDOH per email on September 15, 2010, please find enclosed the Operational Performance Testing Report and associated attachments for your review and approval. The report displays that the water treatment facility consistently met State of Washington drinking water standards for the duration of the testing period.

In order to meet very strict timeframes for the project, CHPRC is requesting quick response from WDOH in regard to this report. We look forward to discussing these results with WDOH and confirming that the new treatment plant is ready to produce and distribute potable water to the 100K area.

You may contact U. E. Wajeeh at 509-373-1830 or me directly at 509-376-4153 with any questions regarding this matter.

Sincerely,

M. L. Edington
Area Manager, 100K D4

uew/llk

Attachment 1

cc: S.M. Hahn
S. Perry, WDOH
S.N. Balone

RECEIVED
JAN 27 2011
DEPARTMENT OF HEALTH
EASTERN REGIONAL OFFICE
2 copies By
Susan Strodunick

EXHIBIT 39

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

February 1, 2011

M. L. Edington, Area Manager
CH2M Hill Plateau Remediation Co
PO Box 1600
Richland, WA 99352

Subject: Energy, Dept Of/100K; PWS ID #00177J; Benton County
OTP Report; DOH Project # 10-0207E

Dear Mr. Edington:

We received the documents for the above-named project on January 27, 2011. We are now reviewing these documents.

To better track your project, we have assigned it a unique project number: **#10-0207E. Please use this number on all future correspondence about this project.**

We are authorized by state regulations to charge a fee for reviewing water system plans, reports, and construction documents. I have enclosed a copy of our fee schedule.

We will send you an invoice for this fee after our initial review of your engineering documents. Payment is due at that time. The base fee includes our initial review, and review of one resubmittal if needed. If additional reviews are needed, we will send you a separate invoice.

Thank you for giving us the opportunity to serve you. We look forward to working with you to ensure your community has safe and reliable drinking water at the tap. Please call me at (509) 329-2117, if you have any questions.

Sincerely,

for Michael Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosure

cc: Benton-Franklin County Health District; Benton
Steven Moore, Department of Energy / 100K
Valori Adams, DOH Compliance Coordinator

Notice: Anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service connection, and may be required to expose system components for our inspection at their own expense. The Department of Health may be unable to accept any component that is installed or constructed prior to approval.

EXHIBIT 40

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

February 18, 2011

M.L. Edington, Area Manager
CH2M Hill Plateau Remediation Co
PO Box 1600
Richland, WA 99352

Subject: Energy, Dept of / 100K; PWS ID# 00177J; Benton County
Operational Performance Testing Report; DOH Project #s 10-0207D-10-0207E
APPROVAL

Dear Mr. Edington:

The engineering report for the above projects received in this office August 10, 2010, and January 27, 2010, has been reviewed and, in accordance with the provisions of WAC 246-290, is hereby APPROVED.

WAC 246-290-990 authorizes a schedule of fees to be implemented for review of planning, engineering, and construction documents. The Department of Health's (DOH) total cost to review this engineering report is $408.00. An invoice is enclosed.

Please note that a draft O & M Manual (Operations Program under WAC 246-290-654(5)) must be submitted to DOH for review and approval before final approval of the new membrane filtration facility can be issued and water produced for public consumption.

If you have any questions please feel free to contact me at (509) 329-2117.

Sincerely,

Michael Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosures: Invoice

cc: Benton-Franklin Health District
Steven Moore, Department of Energy, 100/K Water Purveyor
George Simon, DOH WFI Administrator
Valori Adams, DOH Compliance Coordinator
Bryony Stasney, DOH Water Quality Administrator

EXHIBIT 41

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

March 10, 2011

M. L. Edington, Area Manager
CH2M Hill Plateau Remediation
PO Box 1600
Richland, WA 99352

Subject: Energy, Dept Of/100K; PWS ID #00177J; Benton County
Operation And Maintenance Manual; DOH Project # 11-0313

Dear Mr. Edington:

We received the documents for the above-named project on March 04, 2011. We are now reviewing these documents.

To better track your project, we have assigned it a unique project number: #11-0313. **Please use this number on all future correspondence about this project.**

We are authorized by state regulations to charge a fee for reviewing water system plans, reports, and construction documents. I have enclosed a copy of our fee schedule.

We will send you an invoice for this fee after our initial review of your engineering documents. Payment is due at that time. The base fee includes our initial review, and review of one resubmittal if needed. If additional reviews are needed, we will send you a separate invoice.

Thank you for giving us the opportunity to serve you. We look forward to working with you to ensure your community has safe and reliable drinking water at the tap. Please call me at (509) 329-2117, if you have any questions.

Sincerely,

Michael Wilson, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosure

cc: Benton-Franklin County Health District; Benton
CH2M Hill - Plateau Remediation Co
Steven Moore, Department of Energy 100K
Sheila Hahn, Department of Energy
Valori Adams, DOH Compliance Coordinator

Notice: Anyone who begins construction on a project without all required approvals may be subject to a penalty of up to $5,000 per service connection, and may be required to expose system components for our inspection at their own expense. The Department of Health may be unable to accept any component that is installed or constructed prior to approval.

Wajeeh, Usama E **EXHIBIT 42**

From: Edington, Max L
Sent: Wednesday, March 16, 2011 8:16 AM
To: Wajeeh, Usama E; Green, Mary A (Mary Ann)
Subject: FW: Energy, Dept of/100K; PWS ID# 00177, Benton County: Membrane WTP Start-Up Approval
Attachments: Revised Membrane Filtration Unit Form.xlsx; 2807_001.pdf

---

From: Wilson, Michael / EH (DOH) [mailto:Michael.Wilson@doh.wa.gov]
Sent: Tuesday, March 15, 2011 6:16 PM
To: Edington, Max L; Moore, Steven
Cc: Perry, Sam A (DOH)
Subject: Energy, Dept of/100K; PWS ID# 00177, Benton County: Membrane WTP Start-Up Approval

43

Max and Steven:

O & M Manual Review

We completed our review of the O& M manual that was received in this office on March 4, 2011. I have two comments, but nothing that will prevent the start-up of the new membrane WTP. My comments are:

1. Appendix A, Monitoring Report Forms. There was a typo in Note 4 of the "Membrane Filtration Unit Monthly Report" form that I had emailed to you. Note 4 incorrectly makes reference to "Note 5" on this same form. Note 4 should read:

> A pressure decay test (PDT) must be conducted at least once each day that the membrane filtration unit is used. An additional PDT is required if an indirect integrity threshold described in Note 6 is exceeded.
>
> Unless the LRV is calculated and greater than the minimum required LRV of 3.0 log, the maximum allowable PDT is 0.065 psi/min.

A corrected copy of the "Membrane Filtration Unit Monthly Report" form is attached for your use.

<<Revised Membrane Filtration Unit Form.xlsx>>

2. Appendix D, Water Treatment Alarm Response.

a. The particle count of the filter effluent should have an alarm setpoint of 30 counts/ml or less. An additional pressure decay test is required at least once every four hours of operation if particle counts exceed the control limit of 30 counts/ml for 15 or more minutes.

b. The transmembrane pressure high setpoint should be set at 30 psi instead of 35 psi. The maximum transmembrane pressure is 30 psi.

1

Please make the above changes in your Draft O & M manual. You do not need to resubmit the O & M manual for our review.

Water Treatment Plant Start-up

Please complete and submit the attached Construction Completion Report (CCR) form. The CCR will certify that the project has been completed according to plans and specifications which were approved by this office. After I receive the CCR, I will give you permission by email that the WTP may be placed into service. A formal approval letter will be sent to you after my email approval. The completed CCR form may be emailed back to me.

<<2807_001.pdf>>

Filtration Credit

Based on the design of new potable water facility, the Department will grant your system the following removal credit: 3.0 logs *Cryptosporidium*, 3.0 logs *Giardia lamblia* cyst, 0.0 logs virus

As a result of the above filtration removal credit determination, your disinfection system must provide the following levels of inactivation to meet the overall Surface Water Treatment Rule treatment requirements: 0.5 log *Giardia lamblia* cyst, 4.0 logs virus

Start-up Recommendations

Based upon start-up observations at other membrane facilities, your membranes may have excessive particle counts over 30 counts/ml until the membranes relax. Particle counts over the 30 counts/ml threshold require an additional pressure decay test at least once every four hours of operation. In all likelihood, these high particle counts are not indicative of a fiber, potting, or seal failure. Rather than the water system being over concerned about the high particle counts, we recommend that you do direct integrity tests every four hours of operation during the first month or until the membranes relax and the finished water particle counts are routinely less than 20 counts/ml.

Please contact me if you have any questions and I look forward to receiving your Construction Completion Report form.

****

Michael D. Wilson, PE
Regional Engineer
Office of Drinking Water
Washington State Department of Health
16201 E. Indiana Avenue, Suite 1500
Spokane Valley, WA 99216
phone: (509) 329-2117 ~ fax: (509) 329-2104
michael.wilson@doh.wa.gov

We have moved to a new location! Please note our new address and telephone numbers.

Public Health - Always Working for a Safer and Healthier Washington

Visit our web site at www.doh.wa.gov/ehp/dw

2

Barnes, Brett M

EXHIBIT 45

From: Jansky, Michael T
Sent: Monday, April 26, 2010 7:45 AM
To: Barnes, Brett M; Norman, Dottie L
Subject: RE: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018
Attachments: 10000095/ECR-2009-600-018 - [1001251006] -- REGULATORY INFO -- BIOLOGICAL REVIEW OF THE 100-K RIVER WATER ISOLATION PROJECT, ECR #2009-600-018

Yo, Brett and Dottie,

Please see attached. Now, with the CRR I need to close with Woody on the CX...shall follow-up with you and Dottie this week.

Thank you. MT Jansky

EXHIBIT 44

From: Barnes, Brett M
Sent: Monday, April 26, 2010 7:25 AM
To: Jansky, Michael T
Subject: FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018

Mike, don't know if you received this yet...and can you address Dottie's question. Thanks. Brett

---

EXHIBIT 43

From: Norman, Dottie L
Sent: Friday, April 23, 2010 12:17 PM
To: Barnes, Brett M; Story, Scott W
Subject: FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018

Has the ecologic review been completed also (i.e., included in CRR review or independently) or is that still outstanding? 22

From: Teynor, Thomas K
Sent: Thursday, April 22, 2010 4:16 PM
To: Kennedy, Colburn E; Norman, Dottie L
Cc: Balone, Steven N; Kehler, Kurtis L; Swartz, Mike
Subject: FW: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018

FYI

EXHIBIT 54

From: Rodriguez, Annabelle L
Sent: Thursday, April 22, 2010 4:13 PM
To: Story, Scott W; Kennedy, Colburn E
Cc: Balone, Steven N; Teynor, Thomas K; Rodriguez, Annabelle L; Prendergast-Kennedy, Ellen L
Subject: Notice of Cultural Resources Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018

Good Afternoon,

In compliance with 36 CFR 800, a National Historic Preservation Act (NHPA), Section 106 assessment for the subject project has been completed for the U. S. Department of Energy, Richland Operations (DOE-RL) Cultural

1

Barnes, Brett M

From: Jansky, Michael T
Sent: Tuesday, May 25, 2010 7:47 AM
To: Russell, Woody
Cc: Engelmann, Richard H; Barnes, Brett M
Subject: RE: CX FOR K AREA Utilities Reroute

Yo, Woody,

OK. I shall get that together this week.

Thank you. MT Jansky

From: Russell, Woody
Sent: Tuesday, May 25, 2010 7:45 AM
To: Jansky, Michael T
Subject: RE: CX FOR K AREA Utilities Reroute

Mike,
It is approvable, it needs the clearance form and CX # and then I can sign.

Woody

EXHIBIT 47

From: Jansky, Michael T
Sent: Tuesday, May 25, 2010 6:15 AM
To: Russell, Woody
Subject: RE: CX FOR K AREA Utilities Reroute

Yo, Woody,

Is the CX approved? If so, could you please fax me the signature page?

Thank you. MT Jansky

From: Russell, Woody
Sent: Monday, May 24, 2010 10:29 AM
To: Jansky, Michael T
Subject: RE: CX FOR K AREA Utilities Reroute

Good to go – Sorry, I did not get back to you sooner.

EXHIBIT 46

From: Jansky, Michael T
Sent: Monday, May 24, 2010 6:39 AM
To: Jansky, Michael T; Russell, Woody
Subject: RE: CX FOR K AREA Utilities Reroute

Yo, Woody,

Any thoughts regarding this April 28 request?

Please advise. Thank you. MT Jansky

1

From: Jansky, Michael T
Sent: Wednesday, April 28, 2010 12:27 PM
To: Russell, Woody
Subject: CX FOR K AREA Utilities Reroute

Yo, Woody,

Attached for your approval is an activity-specific CX for 100 K Area Utilities Reroute.

Also attached for your files are the cultural, ecological, and siting documentation.

Please advise if you have any comments/questions regarding this activity.

Please fax me the signed approval page.

Thank you. MT Jansky

2

EXHIBIT 48

Categorical Exclusion for 100 K Area Utilities Reroute
Hanford Site, Richland, Washington

Proposed Action

The U.S. Department of Energy, Richland Operations Office (RL), needs to accelerate decommissioning and demolition (D&D) of the 100 K Area ancillary facilities, 100 K Area waste site remediation, and 105-K East and 105-K West reactor disposition. The proposed activities would provide for the isolation of 100 K Area utilities to facilitate achieving cold and dark conditions for facilities subject to D&D and remediation. The proposed activities would include the elimination of raw water withdrawals from the Columbia River by closing the 183-K East waste supply station and installing a temporary supply system to provide water and not interfere with D&D activities. Electrical systems also would be re-routed to facilitate the D&D of tunnels.

Location of Action

100 K Area, Hanford Site, Richland, Washington (Figure 1).

Description of Proposed Action

Approximately 11,000 feet of raw water transfer line would be installed, tieing into an existing water line south of the 100 B Area to the southwest corner of the 100 K Area (Figures 2 and 3). The water line would be continued north to the 142-KW Building and rerouted to provide water to two fire hydrants at the 015-KW Building and to the balance of the 100 K Area. Water lines would be installed within the exterior of the 100 K Area. The system would be provided with a heating system to prevent freezing. Water filtration would involve use of portable filtration units providing a minimum of 50 gallons per minute (189 liters per minute) to provide sanitary water supply for approximately 15 trailers, portable restrooms, and shower trailers. Trench excavation could reach a depth of 4 feet or more and up to 4 feet wide or more.

Electrical utilities would be consolidated and re-routed to avoid interference with on-going demolition activities. The existing 100 K Area electrical system is sized to support the operation of two large river water pumps, continuous operation of raw water pumps, two reactors, and various support facilities. The 100 K Area substations are fed electrical power by large towers providing 230 kV supply. Distribution of electricity between substations is conducted via tunnels, which are to undergo D&D.

Minor modifications to the heating, ventilation, and air conditioning (HVAC) system in the 100-KW Basin also would be provided for worker protection and comfort during continued operations. The current working environment involves radiological airborne contamination in a hot and humid environment; the HVAC upgrades would keep the work area below airborne radiation requirements.

The proposed activities are scheduled to start in FY 2009 and be completed in FY 2010. Total project costs are estimated to be no greater than $1,000,000, with a funding source under the *American Recovery and Reinvestment Act of 2009*.

Categorical Exclusion (CX) to be Applied

The following CX is listed in Title 10, Code of Federal Regulations (CFR) 1021, "National Environmental Policy Act Implementing Procedures," Subpart D, Appendix B, published in the Tuesday, July 9, 1996, 61 Federal Register 36222:

B1.26 Siting, construction (or expansion, modification, or replacement), operation, and decommissioning of small (total capacity less than approximately 250,000 gallons per day) wastewater and surface water treatment facilities whose liquid discharges are externally regulated, and small potable water and sewage treatment facilities.

ELIGIBILITY CRITERIA

Since there are no extraordinary circumstances that may affect the significance of the environmental effects of the proposal, the proposed activity meets the eligibility criteria of 10 CFR 1021.410(b), as shown in the following table. The proposed activity is not "connected" to other actions with potentially significant impacts [40 CFR 1508.25(a)(1)], or with cumulatively significant impacts [40 CFR 1508.25(a)(2)], and is not precluded by 10 CFR 1021.211.

The "Integral Elements" of 10 CFR 1021 are satisfied as discussed below.

INTEGRAL ELEMENTS 10 CFR 1021, SUBPART D, APPENDIX B	
Would the Proposed Action:	Comment or explanation:
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE and/or Executive Orders?	No applicable laws, regulations, or orders would be violated by the proposed actions.
Require siting and construction or major expansion of waste storage, disposal, recovery or treatment facilities (including incinerators)? The proposal may include categorically excluded waste storage, disposal, recovery or treatment actions.	Wastes generated during the proposed action would not require expansion/modification of existing waste management facilities.
Disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases?	No. There would be no uncontrolled or unpermitted releases.
Adversely affect environmentally sensitive resources including, but not limited to: (i) Property (e.g., sites, buildings, structures, objects) of historic, archeological, or architectural significance designated by Federal, state, or local governments or property eligible for listing on the National Register of Historic Places (ii) Federally-listed threatened or endangered species or their habitat (including critical habitat), Federally-proposed or candidate species or their habitat or state-listed endangered or threatened species or their habitat (iii) Wetlands regulated under the Clean Water Act (33 U.S.C. 1344) and floodplains (iv) Federally- and state-designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, and marine sanctuaries (v) Prime agricultural lands (vi) Special sources of water (such as sole-source aquifers, wellhead protection areas, and other water sources that are vital in a region) (vii) Tundra, coral reefs, or rainforests?	None of the environmentally sensitive resources listed (i through vii) will be adversely affected. Note that the National Historic Preservation Act, Section 106 assessment, was completed on April 22, 2010 (email, Annabelle Rodriguez, RL, to Scott Story and Colburn Kennedy, CHPRC, "Notice of Cultural Clearance for the Installation of the 100-K Area Raw Waterline, HCRC#2009-600-018." A finding of "No Historic Properties Affected" has been determined for this project.

CULTURAL AND BIOLOGICAL RESOURCES REVIEWS

Cultural and biological reviews were conducted to address the proposed raw water line.

A cultural resources review (HCRC#2009-600-018) has been conducted for the 100 K Area raw waterline. On March 18, 2010, the Hanford Cultural Resources project submitted their findings and concluded that a determination of "No Historic Properties Affected" be made, because neither the cultural resources identified (one prehistoric archaeological site and one prehistoric isolate) are eligible for the national Register of Historic Places. Appropriate monitoring for cultural materials will be conducted during all work activities.

A biological review specifically for the project has been conducted (Letter, M. Sackschewsky, PNNL, to S. Story, FFS, "Biological Review of the 100-K River Water Isolation Project," ECR #2009-600-018," dated January 12, 2010). Therein, recommended mitigation activities included minimization of disturbance of sagebrush habitat and minimization of off-road travel. Based on compliance with the aforementioned recommendations, no adverse impacts to protected species, priority habitats, or other biological resources of concern would be expected to result from the proposed action.

Compliance Action: I have determined that the proposed action meets the requirements for the referenced CX. Therefore, using the authority delegated to me by DOE Order 451.1B, Change 1, I have determined that the proposed activities may be categorically excluded from further *National Environmental Policy Act of 1969* (NEPA) review and documentation.

Signature/Date: RWRussell 5/26/10
R. W. Russell
Hanford NEPA Compliance Officer

cc:

B. M. Barnes, CHPRC
M. T. Jansky, CHPRC
C. E. Kennedy, CHPRC
A. L. Rodriguez, RL
R. S. Weeks, PNNL

The following checklist summarizes environmental impacts that were considered:

Impact to Air

	Would the proposed action:	YES	NO
1.	Result in more than minor and temporary gaseous discharges to the environment?		X
2.	Release other than nominal and temporary particulates or drops to the atmosphere?		X
3.	Result in more than minor thermal discharges?		X
4.	Increase offsite radiation dose to >0.1 mrem (40 CFR 61 Subpart H)?		X

Impact to Water

	Would the proposed action:	YES	NO
5.	Discharge any liquids to the environment?	X	
6.	Discharge heat to surface or subsurface water?		X
7.	Release soluble solids to natural waters?		X
8.	Provide interconnection between aquifers?		X
9.	Require installation of wells?		X
10.	Require a Spill Prevention Countermeasure and Control Plan (40 CFR 112 and 761)?		X
11.	Violate water quality standards (WAC 713-200, Table 1)?		X

Impact to Land

	Would the proposed action:	YES	NO
12.	Conflict with existing zoning or land use?		X
13.	Involve hazardous, radioactive, PCB, or asbestos waste?	X	
14.	Cause erosion?		X
15.	Require an excavation permit?	X	
16.	Disturb an undeveloped area?	X	

General

	Would the proposed action:	YES	NO
17.	Disturb Arid Lands Ecology or Wahluke Slope Reserves?		X
18.	Cause other than a minor increase in noise level?		X
19.	Make a long-term commitment of large quantities of nonrenewable resources?		X
20.	Require new utilities or modifications to utilities?	X	
21.	Use pesticides, carcinogens, or toxic chemicals?		X
22.	Require a radiation work permit?	X	

Items marked "yes" in the Environmental Impact Checklist located above, are addressed in the following paragraphs:

5. Water could be used for dust suppression during excavation activities.

13. Small amounts of radioactive waste (e.g., filters from HVAC modifications) would be appropriately disposed.

15. An excavation permit would be required before removal of soils under the liner.

16. Approximately 11,000 feet of soil disturbance outside the 100 K Area fence line would be required for tie-in to an existing raw water transfer line.

20. The proposed activities involve modification/re-routing of utilities.

22. A radiation work permit would be required due to the potential to encounter radiological contamination during excavations/utility modifications.

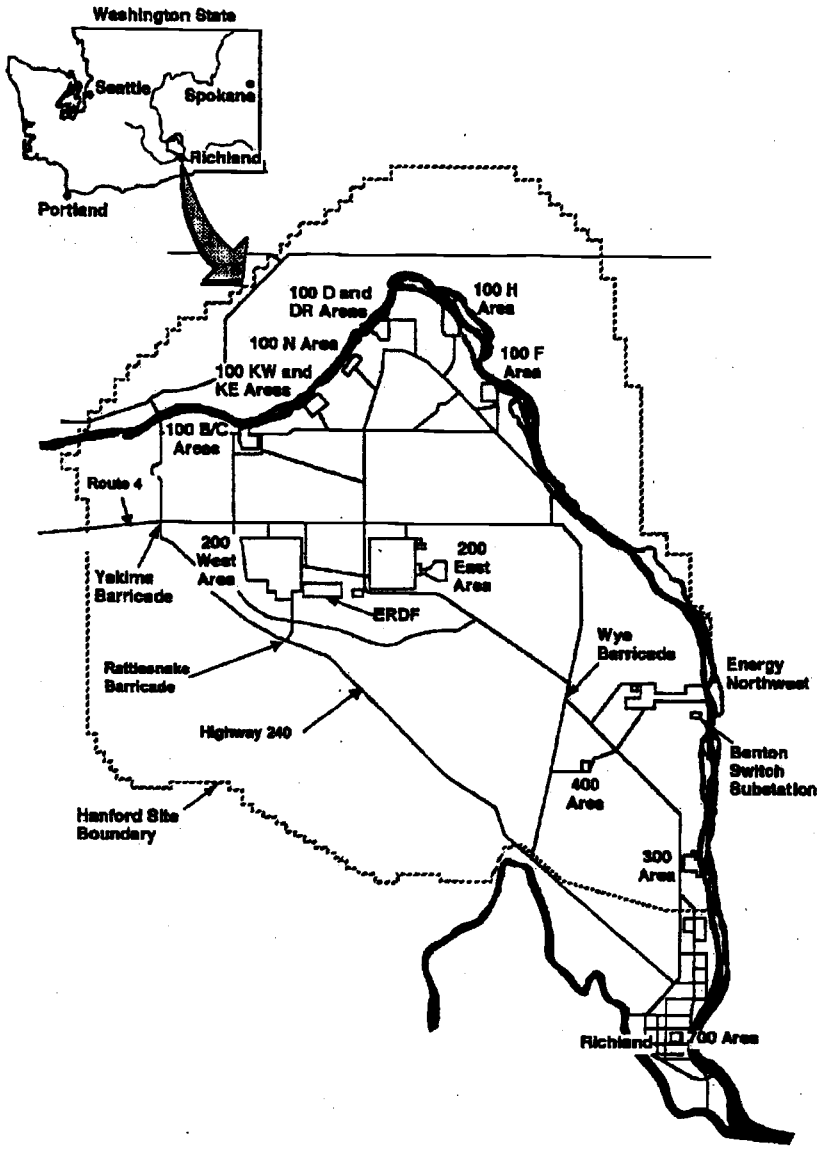

Figure 1. Hanford Site

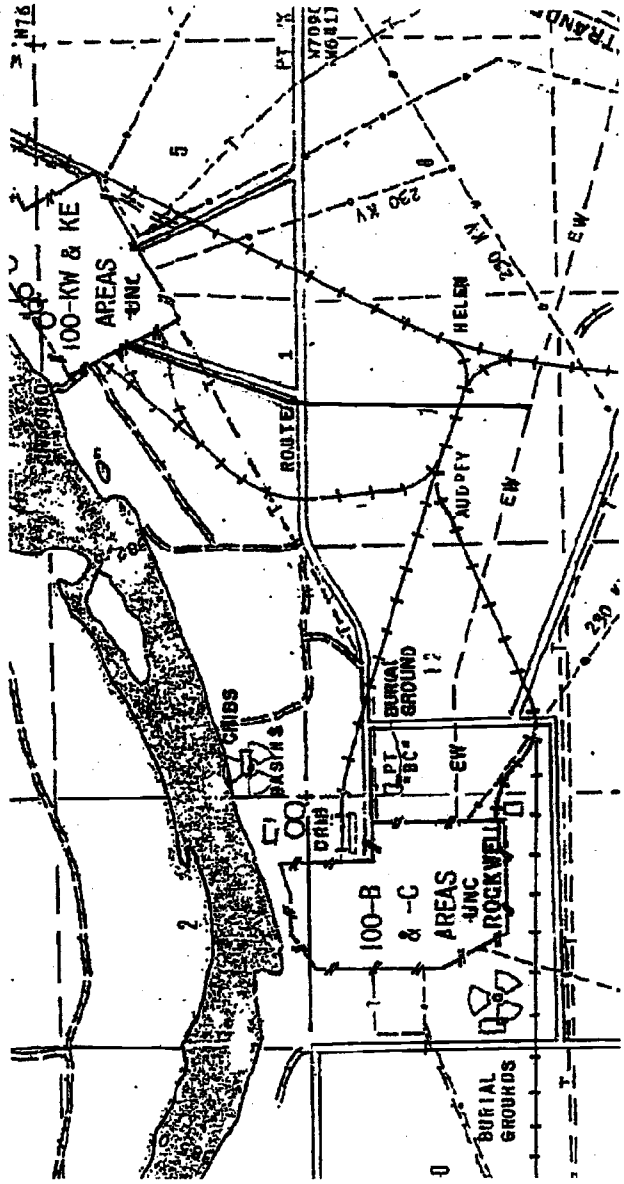

Figure 2. Proposed Water Line Tie-In

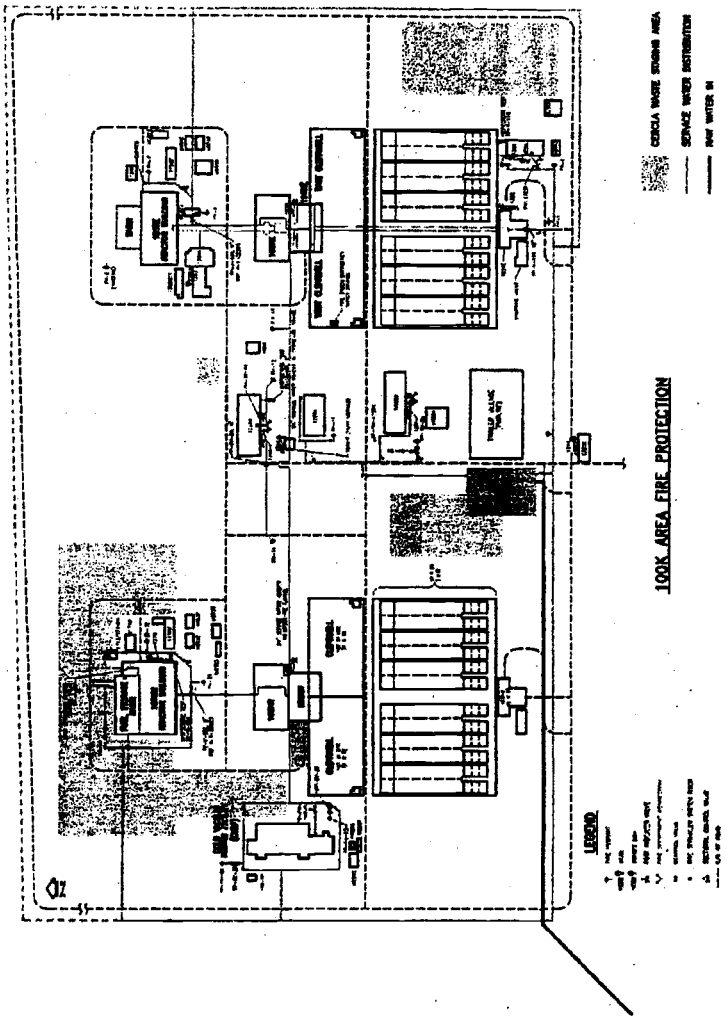

Figure 3. Proposed 100 K Area Utilities Reroute Schematic

(14) EM-RL-CPRC-GENLAREAS-2010-0013.doc

EXHIBIT 49

EM-RL--CPRC-GENLAREAS-2010-0013 NOTIFICATION/FINAL

Occurrence Report

After 2003 Redesign

Plateau Remediation General Facilities

(Name of Facility)

Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)

(Facility Function)

Hanford Site (Site)

CH2MHILL Plateau Remediation Company (Contractor)

Name: V. M. Pizzuto

Title: COO, CHPRC **Telephone No.:** (509) 373-0293

(Facility Manager/Designee)

Name: NYE, LYNN S

Title: OCCURRENCE REPORTING COORDINATOR **Telephone No.:** (509) 372-0251

(Originator/Transmitter)

Name: **Date:**

(Authorized Classifier (AC))

1. **Occurrence Report Number:** EM-RL--CPRC-GENLAREAS-2010-0013

Initiation of Construction Activities on Water System Installations Prior to WDOH Approval

2. **Report Type and Date:** NOTIFICATION/FINAL

	Date	Time
Notification:	06/08/2010	20:39 (ETZ)
Initial Update:	06/08/2010	20:39 (ETZ)
Latest Update:	06/08/2010	20:39 (ETZ)
Final:	06/08/2010	20:39 (ETZ)

3. **Significance Category:** 4

4. **Division or Project:** Multiple

5. **Secretarial Office:** EM - Environmental Management

5. Secretarial Office: EM - Environmental Management

6. System, Bldg., or Equipment: Construction / Water System Installation

7. UCNI?: No

8. Plant Area: Multiple

9. Date and Time Discovered: 06/04/2010 15:10 (PTZ)

10. Date and Time Categorized: 06/04/2010 15:10 (PTZ)

11. DOE HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. Other Notifications:

Date	Time	Person Notified	Organization
06/04/2010	16:54 (PTZ)	J.E. Trevino	DOE-RL

13. Subject or Title of Occurrence:

Initiation of Construction Activities on Water System Installations Prior to WDOH Approval

---

14. Reporting Criteria:

10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 4 occurrence)

---

15. Description of Occurrence:

On May 3, 2010, a new potable water system installation at the 200 East Area was found to have begun construction prior to obtaining required written project report approval from the WDOH. This project report had been submitted to WDOH and approval was pending. Upon discovery, work on the drinking water system was stopped, WDOH was contacted, and approval was immediately obtained. An investigation of similar projects identified one project for the construction of a new combination fire suppression and temporary drinking water system at 100K Area with a similar issue. On May 18, 2010, it was determined that construction had begun prior to approval of the project report by WDOH (the fire system does not require WDOH approval). In this case, the approval of the National Environmental Policy Act (NEPA) Categorical Exclusion (CX) submittal was determined to have not yet been obtained. This CX approval was immediately obtained, and the project report submitted to WDOH for approval.

In neither case was the drinking water system hooked up or put into service prior to obtaining the required approvals.

Following discussion with the involved projects, CHPRC Management, and CHPRC support organizations, this series of issues was determined to be of sufficient concern to warrant submittal of a Management Concern, 10(2) SC 4 Occurrence Report.

---

16. Is Subcontractor Involved? No

---

17. Operating Conditions of Facility at Time of Occurrence:

N/A

---

18. Activity Category:

01 - Construction

---

19. Immediate Actions Taken and Results:

- A meeting is to be held WDOH to review the work plan for the 100K Area.

---

20. ISM:

1) Define the Scope of Work

---

21. Cause Code(s):

---

22. Description of Cause:

---

23. Evaluation (by Facility Manager/Designee):

---

24. Is Further Evaluation Required?: No

---

25. Corrective Actions
Local Tracking System Name: Corrective Action Management

---

26. Lessons Learned:

27. Similar Occurrence Report Numbers:

28. User-defined Field #1:

29. User-defined Field #2:

30. HQ Keyword(s):

01A--Inadequate Conduct of Operations - Inadequate Conduct of Operations (miscellaneous)
01E--Inadequate Conduct of Operations - Operations Procedure Noncompliance
01R--Inadequate Conduct of Operations - Management issues
12B--EH Categories - Conduct of Operations
14C--Quality Assurance - Quality Improvement Deficiency
14E--Quality Assurance - Work Process Deficiency

31. HQ Summary:

On May 3, 2010, installation of a new potable water system at the 200 East Area was found to have begun before obtaining the required written project report approval from the State of Washington Department of Health (WDOH). This project report had been submitted to the WDOH and approval was pending. Upon discovery, work on the drinking water system was stopped, WDOH was contacted, and approval was immediately obtained. An investigation of similar projects identified one project for the construction of a new combination fire suppression and temporary drinking water system at the 100K Area with a similar issue. On May 18, 2010, it was determined that construction had begun before approval of the project report by the WDOH (the fire system does not require WDOH approval). In this case, the approval of the National Environmental Policy Act Categorical Exclusion (CX) submittal was determined to have not yet been obtained. This CX approval was immediately obtained, and the project report submitted to the WDOH for approval. In neither case was the drinking water system hooked up or put into service before obtaining the required approvals. A meeting with the WDOH is planned to review the 100K Area work plan.

32. DOE Facility Representative Input:

33. DOE Program Manager Input:

EXHIBIT 50

Date Received for Clearance Process (MM/DD/YYYY)

INFORMATION CLEARANCE FORM

A. Information Category

- [ ] Abstract
- [ ] Summary
- [ ] Visual Aid
- [ ] Full Paper
- [ ] Journal Article
- [ ] Internet
- [ ] Software
- [ ] Report
- [x] Other Proj Execution Plan

B. Document Number EPC-40524, Rev. 1

C. Title 100K Infrastructure Project Execution Plan

D. Internet Address

E. Required Information (MANDATORY)

1. Is document potentially Classified? (•) No ( ) Yes

M. L. Edington
Manager Required (Print and Sign)

If Yes _____
ADC Required (Print and Sign) (•) No ( ) Yes Classified

2. Official Use Only (•) No ( ) Yes Exemption No. ____
3. Export Controlled Information (•) No ( ) Yes OUO Exemption No. 3
4. UCNI (•) No ( ) Yes
5. Applied Technology (•) No ( ) Yes
6. Other (Specify) _____

7. Does Information Contain the Following:

a. New or Novel (Patentable) Subject Matter? (•) No ( ) Yes
If "Yes", OUO Exemption No. 3
If "Yes", Disclosure No.: _____

b. Commercial Proprietary Information Received in Confidence, Such as Proprietary and/or Inventions?
(•) No ( ) Yes If "Yes", OUO Exemption No. 4

c. Corporate Privileged Information? (•) No ( ) Yes
If "Yes", OUO Exemption No. 4

d. Government Privileged Information? (•) No ( ) Yes
If "Yes", Exemption No. 5

e. Copyrights? (•) No ( ) Yes If "Yes", Attach Permission.

f. Trademarks? (•) No ( ) Yes If "Yes", Identify in Document.

8. Is Information requiring submission to OSTI? ( ) No ( ) Yes

9. Release Level? (•) Public ( ) Limited

F. Complete for a Journal Article

1. Title of Journal

G. Complete for a Presentation

1. Title for Conference or Meeting _____
2. Group Sponsoring _____
3. Date of Conference _____
4. City/State _____
5. Will Information be Published in Proceedings? (•) No ( ) Yes
6. Will Material be Handed Out? (•) No ( ) Yes

H. Information Owner/Author/Requestor
K. A. Albin 7/29/10
(Print and Sign)

Responsible Manager
M. L. Edington 7/29/10
(Print and Sign)

Approval by Direct Report to President (Speech/Articles Only) _____
(Print and Sign)

I. Reviewers

	Yes	Print	Signature	Public Y/N (If N, complete J)
General Counsel	[ ]			Y / N
Office of External Affairs	[ ]			Y / N
DOE-RL	[ ]			Y / N
Other	[ ]			Y / N
Other	[ ]			Y / N

J. Comments

If Additional Comments, Please Attach Separate Sheet

Information Clearance Approval

A-6001-401 (REV 2)

CHPRC ADMINISTRATIVE DOCUMENT PROCESSING AND APPROVAL

DOCUMENT TITLE: 100K Infrastructure Project Execution Plan	**OWNING ORGANIZATION/FACILITY:** CHPRC/EPC
Document Number: EPC-40524	**Revision/Change Number:** 1

DOCUMENT TYPE *(Check Applicable)* [ ] Plan [ ] Report [ ] Study [ ] Description Document [X] Other - PEP

DOCUMENT ACTION *(Check One)* [ ] New [X] Revision [ ] Cancellation

RESPONSIBLE CONTACTS

Name	Phone Number
Author: K. A. Albin	376-3034
Manager: M. L. Edington	376-4153

DOCUMENT CONTROL

Is the document intended to be controlled within the Hanford Document Control System (HDCS)? [X] Yes [ ] No
Does document contain scientific and technical information intended for public use? [ ] Yes [X] No
Does document contain controlled-use information [ ] Yes [X] No
("yes" requires information clearance review in accordance with PRC-PRO-IRM-184)

DOCUMENT REVISION SUMMARY

NOTE: Provide a brief description or summary of the changes for the document listed.

This revision captures the changes in project definition and execution strategy as the project enters the final construction phase.

REVIEWERS Others

Name *(print)*	Organization

APPROVAL SIGNATURES

			RELEASE / ISSUE
Author:			
Name: (Print)	K. A. Albin	Date 7/29/10	
Responsible Manager:			
Name: (print)	M. L. Edington	Date 7/29/10	
Other:			
Name: (print)		Date	

Page 1 of 1

A-6005-184 (REV 2)

Project Execution Plan for 100K Infrastructure Project

Plateau Remediation Company

Table of Contents

Terms v

1. Execution Approach Overview 1-1

1.1 Introduction 1-1
1.2 Project Background 1-1
1.3 Justification of Project Need 1-1
1.4 Project Description 1-1
1.4.1 Project Scope 1-1
1.4.2 Major systems components and functions: 1-3
1.4.3 Major Interfaces 1-4
1.5 Project Management Structure and Integrated Project Teams 1-5
1.5.1 Department of Energy 1-5
1.5.2 CHPRC PBS Management Organization 1-5
1.5.3 EPC Project Organization 1-5
1.6 Roles and Responsibilities 1-6
1.6.1 100K Infrastructure Project Manager 1-6
1.6.2 Design Engineering, ARES 1-7
1.6.3 Project Engineer 1-8
1.6.4 Construction Manager 1-8
1.6.5 Field Work Supervisor 1-9
1.6.6 Construction Safety 1-9
1.6.7 Project Controls Lead 1-10
1.6.8 Procurement Lead 1-10
1.6.9 Buyer's Technical Representative 1-10
1.6.10 Project Records 1-12
1.6.11 Project Quality Assurance Engineer (QAE) 1-12

2. Tailoring Strategy 2-1

2.1 100K Infrastructure Project 2-1

3. Integrated Baseline 3-1

3.1 Scope Baseline 3-1
3.2 Schedule Baseline 3-1
3.3 Cost Baseline 3-1
3.4 Funding Profile 3-2
3.5 Life Cycle Cost 3-2
3.6 Baseline Change Control 3-2

4. Project Management 4-1

4.1 Project Reporting 4-1

4.2 Risk Management 4-1
4.3 Engineering and Technology Readiness 4-2
4.4 Alternative Analysis and Selection 4-3
4.5 Value Management/Value Engineering 4-3
4.6 Environmental Regulatory Strategy 4-3
4.7 Integrated Safety Management 4-3
4.7.1 Industrial Safety and Occupational Health 4-4
4.7.2 Nuclear Safety 4-5
4.7.3 Hazard Analysis 4-5
4.8 Configuration Management 4-6
4.9 Records Management/Document Control 4-6
4.10 Systems Engineering 4-6
4.11 Earned Value Management System 4-6
4.12 Quality Assurance 4-7
4.13 Project Reviews 4-7
4.14 Communication Management Plan 4-7
5. Project Acquisition Strategy 5-1
5.1 Design and Engineering Phase 5-1
5.1.1 Design/Engineering Strategy 5-1
5.1.2 Design Verification 5-2
5.1.3 Research and Development 5-2
5.1.4 Technical Configuration Baseline 5-2
5.2 Procurement Strategy 5-2
5.2.1 Procurement 5-2
5.3 Construction Strategy 5-3
5.3.1 License and Permitting 5-4
5.4 Testing/Startup/Turnover 5-4
5.5 Acceptance Testing 5-4
6. Project Closeout 6-1
6.1 Objectives 6-1
6.2 Organization and Responsibilities 6-1
6.3 Transfer and Disposition of Property and Records 6-1
6.4 Project Completion Report 6-1

Appendices

APPENDIX A Project Tailoring Strategy **A-1**

Figures

Figure 1-1. 100K Infrastructure Project Site 1-2
Figure 1-2. 100K Infrastructure Project Organization 1-6

Tables

Table 1-1. Primary Project Interfaces 1-4
Table 3-1. Schedule Baseline 3-1
Table 3-2. Cost Baseline 3-1
Table 3-3. Funding Profile for the 100K Infrastructure Project between FY2009 and FY2011 3-2
Table 3-4. Project Control Procedures 3-3
Table 4-1. Risk Value Criteria Matrix 4-2
Table 4-2. Floor Level Implementation Documents 4-4

Terms

ANSI	American National Standards Institute
ARA	Airborne Radiation Area
ARRA	American Recovery and Reinvestment Act
ASME	American Society of Mechanical Engineers
ATP	Acceptance Test Plan
AWS	American Welding Society
BTR	Buyer's Technical Representative
CAT	Construction Acceptance Testing
CCD	Construction Completion Document
CD	Construction Decision
CERCLA	Comprehensive Environmental Response Compensation and Liability Act of 1980
cfm	Cubic Feet per Minute
CHPRC	CH2M Hill Plateau Remediation Company
CS	Contract Specialist
CS&I	Closure Service and Infrastructure
CVDF	Cold Vacuum Drying Facility
CWAE	Construction Work Authorization Envelope
D&D	Deactivation and Decommissioning
DA	Design Authority
DCN	Design Change Notice
DOE-RL	Department of Energy Richland Operations Office
EMS	Environmental Management System
EPC	Engineering, Procurement & Construction
ES&H	Environmental Safety and Health
ESH&QA	Environment, Safety, Health and Quality Assurance
EU	Electrical Utilities
EVMS	Earned Value Measurement System
FAT	Factory Acceptance Test
FDC	Functional Design Criteria
FFS	Fluor Federal Services
FMP	Facility Modification Packages
FPD	Federal Project Director
FWS	Field Work Supervisor

1. Execution Approach Overview

1.1 Introduction

CH2M Hill Plateau Remediation Company (CHPRC) has received American Recovery and Reinvestment Act (ARRA) funding to support infrastructure projects that will assist in the acceleration of closure activities at the 100K Area site. The 100K Infrastructure Project is divided into the following three major subprojects:

- 100K Reactor Power Isolation Subproject
- 100K River Water Infrastructure Isolation Subproject
- 105K-West Basin Airborne Contamination Remediation Subproject

The purpose of this Project Execution Plan (PEP) for the 100K Infrastructure Project is to define the methods and means to accomplish the Project within established cost and schedule baselines, as well as to define the roles and responsibilities between organizations. This is the final revision to this Project's PEP since it is in the completion of construction phase with no follow-on tasks required.

1.2 Project Background

The 100K Area is expediting Deactivation and Decommissioning (D&D) of existing facilities in order to remove contamination that has or may have caused further harm to the environment and to reduce the overall footprint of the Site. Completing the scope of the 100K Infrastructure Project will allow continuing 100K Area facility operations to continue while minimizing the impacts to D&D operations. The project will install approximately 27,000 feet of potable and non potable (fire suppression supply) water line, a 750,000 gallon capacity raw water tank, high volume fire water pumps, and a new microfiltration potable water treatment plant to support the existing 100K facilities. In addition, a new electrical substation with modifications to the 13.8 kV power distribution system and isolation of the A7 substation is being accomplished to facilitate D&D requirements. Further, a new heating, ventilation, and air conditioning (HVAC) system is being installed at the KE basins to provide an enhanced work environment to support D&D Operations.

1.3 Justification of Project Need

The 100K Area D&D effort will require the termination of existing utilities that support ongoing facility operations. Therefore, replacement utility systems (potable and non-potable water and electrical power distribution) are required to support the D&D mission.

1.4 Project Description

1.4.1 Project Scope

The three Subprojects encompass the entire 100K Area as depicted on Figure 1-1.

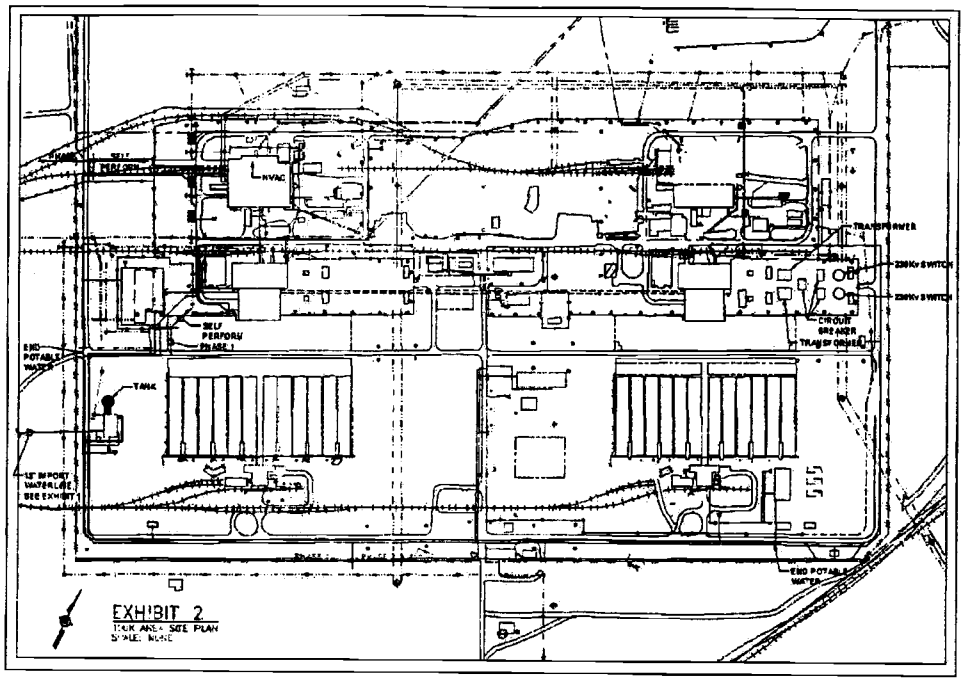

Figure 1-1. 100K Infrastructure Project Site

1.4.1.1 100K Reactor Power Isolation Subproject

The objective of this Subproject is to isolate/consolidate the 100K Area electrical supply and re-route it in order to avoid interferences with future D&D demolition activities. The existing 100K Area electrical supply is sized to support the operation of two very large river water pumps, continuous operation of service water pumps, and large scale operations of two reactors and ancillary support facilities. One substation is maintained, and the electrical switchgear in the other substation remains in operation (i.e., both substations are electrically connected to each other). The switchgear feeds power to the reactor buildings, water pumping facilities, laboratory facilities and other facilities by way of underground utility tunnels. The existing 100K Area substations are fed by the Hanford 230 kV grid (loop) which is connected to the BPA Midway substation. The existing electrical system is not conducive to large scale demolition of facilities due to the overhead power towers posing an overhead obstacle to crane work, and also making a large footprint unavailable to support building demolitions. In addition, having the electrical power distribution between facilities and substations in tunnels makes air gapping of conductors and electrical isolation of facilities more complex and hinders the planned D&D of the tunnels themselves.

The approach is to de-energize and abandon the A7 substation switchgear, relays, battery bank, Supervisory Control and Data Acquisition System (SCADA) and controls (located in the 165K-West facility). In addition, the air gaps and power feeds routed through the tunnels will also be de-energized. The replacement power will come from the re-routing of the 13.8 kV power supply and power drops and installing a new A9 switchyard.

1.4.1.2 100K River Water Infrastructure Isolation Subproject

The objective of this Subproject is to eliminate the use of the 100K East Sedimentation and Water Filtration Systems, eliminate withdrawal of water from the Columbia River, and fully isolate water supply/pressure to piping in the majority of the 100K Area. A new raw water supply line originating from the 100B area export water line will be installed and provide water for the 100K Area fire protection system and a new potable water plant at a design flow rate of 1,500 gallons per minute (gpm). The potable water plant will be sized to support the continuing K-West Basin operations (including the Cold Vacuum Drying Facility (CVDF), and sludge treatment and removal activities. Approximately 27,000 linear feet of underground high density polypropylene (HDPE) piping will be installed and the potable water plant will be sized to accommodate a 750,000 gallon storage tank and have a potable water design flow rate of 50 gpm.

1.4.1.3 K-West Basin Airborne Contamination Remediation Subproject

The K-West Basin Airborne Contamination Remediation Project involves installation of multiple HVAC units to better regulate temperature in the building and to improve air quality in the work area. Legacy (Glycol-based) heaters and evaporative coolers will be disabled once the new HVAC equipment comes online.

Currently the K-West Basin building utilizes two roof exhausters for ventilation and provides no filtration capability. A very old Glycol boiler system has been in place and provides limited heating capability, and existing evaporative coolers do not have enough capacity to cool the large Basin area. Thus, the building frequently is uncomfortable for workers and made even more so by the additional personal protective equipment (PPE) required due to frequent Airborne Radiation Area (ARA) postings.

The new HVAC filtration systems, equipped with high-efficiency particulate (HEPA) filters, will pull air from the Basin envelop, condition the air, remove airborne (particulate) contamination, and return the air back into the Basin at a design flow rate of 3,600 cubic feet per minute (cfm). This recirculation strategy means there will be no impact on the building's airborne effluent permit. This new HVAC system is for operational convenience and will not perform as a safety significant, safety class or defense in depth function.

1.4.2 Major systems components and functions:

The major systems to be replaced or modified for this project include:

- 100K Reactor Power Isolation Subproject
  - 13.8 kV Electrical Line Poles – Provides aerial support for electrical wire and switches
  - A9 Substation – Houses electrical switchgear, controls, SCADA and station service (batteries, etc.)
- 100K River Water Infrastructure Isolation Subproject
  - Import water line – Provides raw water to the 100K Area
  - Fire water lines – Distributes raw water for fire prevention
  - Potable water lines – Distributes potable water to offices and operating facilities
  - Diesel engine driven fire pump – Transfers water from water tanks under specified demand rates
  - Microfiltration plant – Provides sanitary water for trailer, restrooms, shower trailers
  - Multi-purpose 750,000 gallon water tank
  - Water treatment plant housing the microfiltration plant and distribution pumps and equipment
- K-West Basin Airborne Contamination Remediation Subproject

- Heating Ventilation and Air Conditioning – Provides cooling and heating
- Duct Work – Transfers air flow inside the 105K-West basins
- HEPA Filters – Provides filtration of the air stream

1.4.3 Major Interfaces

1.4.3.1 Primary Project Interfaces

The primary interfaces for this project between the Department of Energy Richland Operations Office (DOE-RL), U.S. Environmental Protection Agency (EPA), CH2M HILL Plateau Remediation Company (CHPRC), Mission Support Alliance (MSA), and Washington Departments of Ecology (WDOE) and Health (WDOH) are shown below in Table 1-1, along with a brief description of their expected contributions

Table 1-1. Primary Project Interfaces

Interface	Organization	Contribution to Project
MSA Electrical Utilities (EU)	MSA	Coordinates project electrical service activities, as required
100K Operations	CHPRC 100K Project	Coordinates project activities to eliminate potential interferences, disruption of operational activities, provides lock-out/tag-out, and ensures a safe and healthful working condition
DOE	DOE-RL	Oversight and review by the Facility Representative and Facilities Project Director.
Federal & State Regulators	EPA, WDOE, and WDOH	Regulatory oversight of project activities

1.4.3.2 Facility Specific Interfaces

Interfaces between the modifications made by the 100K Engineering Design Support Project and those aspects of the current facility implementing procedures are described below:

- The 100K Operations Manager and shift manager both have specific responsibilities for overseeing overall facility operations. The 100K Operations organization is the final authority for what work is or is not authorized in the facilities via the Construction Work Authorization Envelope (CWAE) and daily work releases.
- The CWAE is in place between the EPC Project Manager and the Fluor Federal Services (FFS) Construction Manager and describes the work scope, work control process, safety and quality assurance requirements, and emergency contact information. Work is released on a daily basis by the lead construction field work supervisor in the field against the construction work package via a Work Release for Construction/Service Organization (WRCSOF).
- The facility Design Authority, as a member of the 100K Operations organization, will be responsible for the development of the Acceptance Test Plan, Operations Test Plan, and related work packages.
- Coordination between the project team and the MSA EU management and operations personnel regarding the upgrade project in the A9 substation and 100K-East switchyard as a whole. Significant coordination is required around equipment and installation quality and acceptability standards, outages, tie-ins, procedure development, SCADA development, and project handover for

operations. Weekly technical and bi-weekly management meetings have been established to coordinate these activities.

- Hazardous materials management will comply with facility requirements with material safety data sheets in the work area.
- Emergency preparedness program requirements are as described in the CHPRC Emergency Preparedness Program site procedure.
- The 100K Operations organization will be responsible for the execution and management of the facilities once the new systems and associated equipment are ready for continuous operation. EPC Construction will be in a support role at that time. The 100K Engineering Organization will be responsible for providing permits for specific activities as required (i.e., excavation, construction, relocatable structures, occupancy).
- The 100K Engineering Organization will be responsible for providing Nuclear Safety support, including application of the Unreviewed Safety Question (USQ) process.

1.5 Project Management Structure and Integrated Project Teams

This section describes the 100K Infrastructure Project organization and its interfaces with the CHPRC Project Breakdown Structure (PBS) Management Organization and the DOE.

1.5.1 Department of Energy

The 100K Infrastructure Project is part of PBS RL-0041, River Corridor Closure Project, that is managed by a designated DOE Federal Project Director (FPD) and an Integrated Project Team (IPT).

The assigned DOE-RL Central Plateau Federal Project Director (FPD) for the PBS serves as the single point of contact between Federal and contractor staff for matters relating to this PBS and its execution. The FPD focuses on budget and spending, nuclear safety, industrial health and safety, fire protection, environmental protection, National Environmental Policy Act (NEPA) compliance, quality assurance, material control and accountability, safeguards and security, and programmatic and legal requirements.

The FPD reports directly to the Assistant Manager of Central Plateau. The FPD has overall responsibility for their EM Clean-up Project activities including subprojects, monitoring the technical/scope, cost, and schedule baselines through all phases; providing oversight of design, constructability and operations reviews; ensuring communications occur as defined in the Communication Matrix; and ensuring that all DOE Order 413.3A, Program and Project Management for the Acquisition of Capital Assets requirements are met, as applicable.

1.5.2 CHPRC PBS Management Organization

The CHPRC D&D Organization is responsible for management and execution of PBS RL-0041. D&D is responsible for the identification of the subproject need, providing top level functions and requirements, and identifying subproject constraints. They also establish subproject budgets and schedules and are the internal client to CHPRC's EPC management of the 100K Infrastructure Project.

1.5.3 EPC Project Organization

The 100K Infrastructure Project is managed by a full-time Project Manager who is held accountable for project technical, budget, and schedule performance by the CHPRC Vice President of EPC. During the life of the project, supplemental resources will be added to the Project Team as shown in the organizational structure below (Figure 1-2).

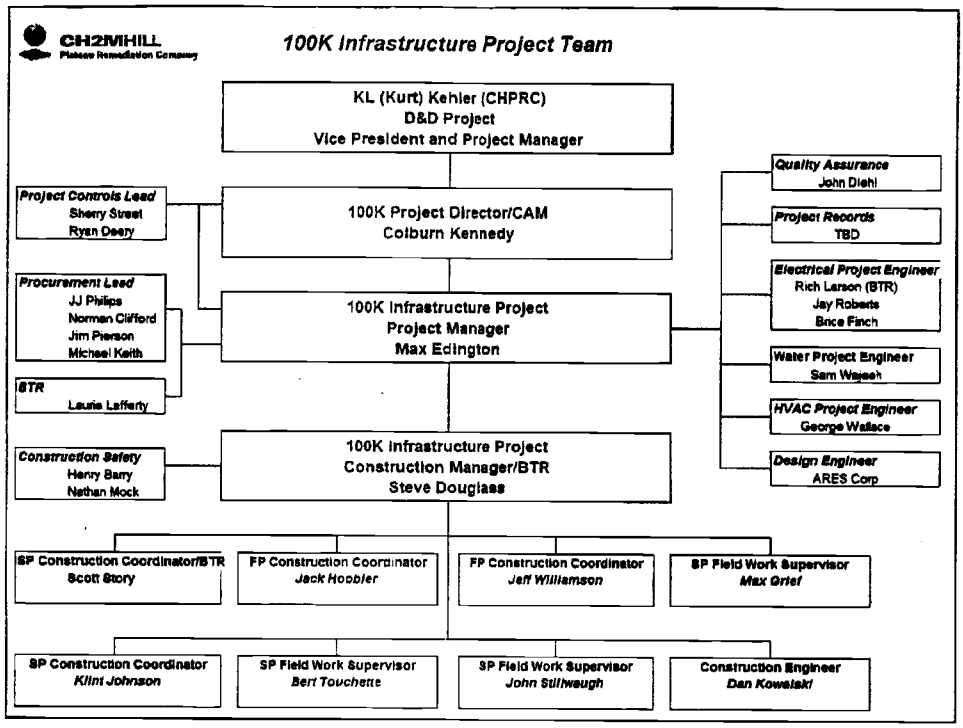

Figure 1-2. 100K Infrastructure Project Organization

The project will obtain required resources (either full time, part-time, or matrixed) for the project in accordance with the guidance provided in PRC-PRO-HR-021, Obtaining Personnel Resources, and using Staffing Worksheets as appropriate. Construction craft will be obtained using the site labor agreement requirements. In addition, the project will employ the services of a Design Engineering firm, ARES, who will provide a full-time Engineering Lead during the engineering and design phase of the project.

1.6 Roles and Responsibilities

The following addresses key positions on the project and their initial roles and responsibilities listed below will evolve as the project progresses.

1.6.1 100K Infrastructure Project Manager

The EPC Project Manager reports to the CHPRC 100K Projects Director/CAM, and is responsible for the following actions as outlined in PRC-PRO-PM-24889, Project Initiation and Execution:

- Identification of Project Team's staffing requirements, including required support from the core functional organizations (Business Services; Project Controls; Environment, Safety, Health and Quality Assurance (ESH&QA), Environmental Compliance, Records Management, and EPC Engineering)
- Preparation of the Project Execution Plan (PEP)

- Ensuring ISMS/EMS requirements and principles are integrated into project execution activities
- Management of the development and acceptance of the project cost estimate, schedule and Performance Measurement Baseline (PMB)
- Coordination with the CHPRC Procurement Organization for needed subcontracting and purchasing actions
- Coordination with the 100K Projects Organization to ensure that the project functions and requirements are completely defined and understood
- Management of project engineering and design activities to ensure compliance with project requirements
- Ensuring that CHPRC's Nuclear Safety Program "Safety Basis Requirements" is complied with as applicable to the subproject and that DOE-STD-1189, Integration of Safety into the Design Process, requirements are met as required.
- Ensuring that applicable environmental regulatory requirements and documents are complied with during project execution
- Ensuring that Hanford Site safeguards and security requirements are adhered to or are integrated into the design if the subproject involves work in a protected area, or involves the modification of a security system or boundary.
- Coordination of required project reviews and approvals
- Monitoring and reporting of project cost and schedule performance, reporting against designated performance indicators, and preparation or input to monthly and project reporting
- Ensuring that appropriate audits, management assessments, and corrective actions are developed and implemented to correct unfavorable cost/schedule variances or deviations from project technical requirements
- Ensuring project construction, fabrication, and procurements meet project requirements
- Ensuring that the CHPRC Worker Safety and Health Program requirements are adhered to during project execution
- Issue event reports, make notifications of events, and lead investigations
- Establishing and maintaining project record files in accordance with CHPRC Records Management procedures
- Management of project close-out and turnover process to the PBS Manager

1.6.2 Design Engineering, ARES

The design-engineering subcontractor, ARES, is responsible for:

- Validating functional and engineering procedural requirements
- Reviewing and making recommendations for equipment selection commonality based upon existing operating systems
- Performing engineering design

- Providing general review and comment at design reviews for identifying engineering best practices, compliance of the design to the Functional Design Criteria (FDC) requirements and applying lessons learned from previous design activities
- Identify long lead procurements
- Coordinate preparation of required permits
- Ensure drawings, calculations, and other engineering documents are entered into the project file
- Maintain and update project schedule for engineering activities on a weekly basis
- Process design change notices, engineering change notices, requests for clarification information, and resolve project non-conformances as needed
- Facilitate resolution of design issues identified during construction and perform inspections and other services during construction as requested by the EPC Project Manager

1.6.3 Project Engineer

The Project Engineer reports directly to the 100K Infrastructure Project Manager and is responsible for the following:

- Coordinate all engineering actions and gaining compliant release of the engineering deliverables
- Coordinate with engineering staff to resolve any engineering/technical issues that arise during design or construction
- Support the Construction Manager via timely resolution of technical issues that arise during the construction/excavation phase of this project
- Develop and support execution strategies that ensure that the constructor/subcontractor performs the work as specified and as are shown on the engineering drawings
- Coordinate with the 100K Area Chief Engineer to obtain necessary review and approval resources (such as Design Authority reviews, Nuclear Safety unreviewed safety question (USQ) screens)
- Support project by coordinating with ARES or other vendors to obtain necessary technical deliverables
- Support Construction Manager and Project Manager as requested with areas of expertise

1.6.4 Construction Manager

The Construction Manager is matrixed and reports to the 100K Infrastructure Project Manager as well as the EPC Vice President. The Construction Manager is responsible for the following actions:

- Implement procurement/construction activities in accordance with the subcontracted statement of work
- Manage day-to-day construction activities and coordinate the efforts of field leads
- Be accountable for project-approved construction cost and schedule baseline
- Implement priority of construction activities within project schedules
- Assure resources are readily available to support work activities

- Assign actions for incoming construction contract correspondence
- Request, evaluate and approve Request for Proposals
- Review Design Change Notices and Facility Modification Packages (FMPs) for construction impacts
- Maintain and fulfill contract requirement
- Review subcontractor invoices as requested
- Review and approve construction change requests
- Maintain senior supervisory watch qualification
- Obtain field work supervisor qualifications as required
- Participate in constructability reviews
- Ensure successful completion of all Construction Acceptance Testing

1.6.5 Field Work Supervisor

The Field Work Supervisor reports directly to the Construction Manager and is responsible for the following:

- Attend plan of the day meetings
- Assure work control and documentation is up to date and accurate and that work is defined, and understood with the proper work controls in place to protect the worker and the environment
- Oversee Contractor activities to assure compliance to statement of work requirements, design requirements and technical specifications
- Maintain an up to date set of field log books
- Complete Daily Activity Reports
- Take photographs of key activities/evolutions, as agreed upon with the Project Manager, and maintain up to date photo files
- Review schedule performance and recommend change(s) as appropriate
- Ensure work control documentation has been subjected to Nuclear Safety review and the USQ process prior to commencement of work
- Ensure Fire Marshal Permits are obtained prior to commencement of work

1.6.6 Construction Safety

The EPC Safety Representative is matrixed to the EPC 100K Infrastructure Project Manager and is responsible for the following actions:

- Work directly with the Construction Manager, task leads, Buyer's Technical Representative (BTR) and subcontractors to identify and correct unsafe conditions; and provide technical review to various documents
- Ensure that construction activities are reviewed proactively to promote safe work conduct and adherence to the CHPRC "Target Zero" safety goal

- Perform weekly and monthly safety inspections with craft resources, construction management, project management, and 100K Area safety and management personnel
- Assist in developing construction plans/approaches that foster a safe work environment
- Interface with project industrial hygiene and radiological protection supervisors
- Review and approve subcontractor safety plans
- Assist subcontractors through safety oversight of subcontractor activities
- Maintain a direct link with the project safety representative's own functional organization to ensure that timely and adequate support is available

1.6.7 Project Controls Lead

The Project Controls Lead is responsible for the following actions:

- Update field schedule on a weekly basis and update project schedule on a monthly basis or as directed by the 100K Infrastructure Project Manager
- Provide a critical path schedule to the Project Manager on a weekly basis or as directed
- Provide labor reports, subcontractor cost reports, material, equipment and other cost reports related to project activities on a monthly basis or more frequently as requested by the Project Manager
- Assist with schedule, budget and status and recommending corrective action(s)
- Assist with the correct status and reporting of earned value

1.6.8 Procurement Lead

The Procurement Lead is responsible for the following actions.

- Provide procurement strategy advice and technical procurement assistance
- Obtain vendor prequalification
- Issue Request for Proposals (RFPs), subcontract Statement of Work (SOW), etc
- Provide bid proposal processing support
- Provide commercial evaluation for project construction subcontracts, technical service agreements, and major equipment procurement
- Maintain project procurement change log
- Manage and negotiate subcontract changes
- Provide input/direction to the Buyer's Technical Representative (BTR) and 100K Infrastructure Project Manager

1.6.9 Buyer's Technical Representative

The Buyer's Technical Representative supports the Project Manager and Construction Manager with interfacing with the contractor(s). Key activities include:

- Completing Davis Bacon applicability review(s)

- Developing/coordinating preparation of the subcontract Statement of Work (SOW) including the detailed work scope description; identifying technical, Environmental, Safety, Health, & Quality and Quality Assurance (QA) requirements; identifying subcontract personnel requirements, subcontract submittals and ; performance schedule; and securing funding from the project sponsor
- Identifying the level of Site clearance, security, and training required for subcontractor personnel to have access to the worksite
- Developing a list of activities/work tasks, deliverables and submittals described in the SOW that can be used to support proposal pricing or contract invoicing
- Participating in the development of selection criteria
- Work with Procurement to establish the approvals, logistics and coordination necessary for the appropriate invoice/payment/performance review process (considering the contract type and scope of work) to ensure payments will be made for work completed and in accordance with the contract
- Prepare non-competative procurement justifications
- Review property and material on hand before ordering new
- Evaluating offers or proposals and records evaluation on Technical Evaluation forms
- Developing subcontractor oversight plans in conjunction with QA, as applicable
- Ensure submittals required prior to mobilization or prior to on-site work have been approved, coordinate the internal review and approval process of technical submittals and concur on all formal deliverables
- Act as the single technical point of contact for the Contract Specialist (CS) by providing the interface with the Design Authority (DA), QA, Integrated Safety Management System (ISMS), Environmental Management System (EMS) and any other site functions which may affect the subcontract
- Monitor subcontractor work progress against the subcontract's performance schedule and monitor their technical, quality, environmental, safety, and health performance
- Work with the responsible Manager to facilitate and mitigate the effects of changes or technical direction
- Notify Procurement of any issues regarding the acceptability of the work, quality, timeliness or other issues relating to work performance
- Execute invoice review and approval process (e.g., verify that work hours (or delivered services) are acceptable for payment
- Document the list of government property provided to the subcontractor; maintain consistent tracking of Government property in possession of the subcontractor; and coordinate, in conjunction with Procurement, disposition of Government property following subcontract completion
- Upon verification that the contractor's work is complete and has met all requirements of the contract, provide a written notice of "final acceptance" to Procurement.

1.6.10 Project Records

The Project Record Files Manager supports the Project Manager and is responsible for the process of project file management in accordance with PRC-PRO-IRM-8310, Document Control Processes, and PRC-PRO-IRM-232, Project Files Management. Specific responsibilities include:

- Develop and/or customize the Project Records Index (PRI) – Site Form A-6002-510 - in accordance with project specific directions received from the Project Manager
- Update the PRI as documents are received and maintain the master copy of the PRI in the official project file throughout the life of the project
- Ensure that all activity documents obtain a unique number for tracking and accountability
- Perform document receipt filing, access control, indexing, maintenance, and retrieval of official project file throughout the life of the project
- Ensure that information is processed through the integrated document control function at the time it is generated/approved
- Ensure that CHPRC and subcontractor (e.g., architect/engineer, construction) documents are provided to the Document Control System Administrator as they are completed and become records
- Ensure that architect/engineer record documents (e.g., drawings, specifications) are placed under CHPRC configuration control before initiating the associated construction activity
- Control access to active project files in locked cabinets by monitoring or limiting entry to those identified by the project manager on a Project Files Access List (PFAL) – Site Form A-6004-207)
- Post and monitor the Personnel Authorization Access List (Site Form A-6004-206) at each project files location and update as required during the life of the project
- Track all received engineering documents, revision status, and all Design Change Notices (DCNs) and submittals affecting each document
- Maintain a pending-approval file for all in-process and partially approved documents and / or coordinates the approval process. Ensures that final, approved documents are provided to the Document Control System Administrator for the official project file
- Assist with project closeout activities

1.6.11 Project Quality Assurance Engineer (QAE)

The Project QAE reports to the project manager and is responsible for providing support to all aspects of the project to assure that project performance is in accordance with this Project Execution Plan. Specific Responsibilities include:

- Reviewing technical plans, procedures, and technical documents to ensure that quality requirements have been addressed
- Developing and implementing a project surveillance and oversight schedule and periodically reporting the results to the project manager
- Identifying issues that hinder project performance and working with project staff indentify and implement solutions

- Identifying and tracking the resolution of non-conforming hardware issues
- Working with the project manager and BTR provide periodic oversight of subcontractors
- Reviewing vendor documentation and procurement documents as appropriate
- Ensuring appropriate receipt inspection activities occur for designated procurements
- Coordinating with the construction manager to ensure appropriate inspection activities are taking place

2. Tailoring Strategy

CHPRC is applying a tailoring approach toward the application of DOE Order 413.3A requirements for all CHPRC EM projects. Tailoring is based upon the risk, size, and complexity of the project. DOE-STD-1189, Integration of Safety into the Design Process, similarly addresses tailoring in the context of nuclear safety throughout the phases of the project such that all of the standards are met, yet tailored to the cost, complexity, and risk; project type; past experience; and lessons learned. DOE Order 413.3A requires full implementation of DOE-STD-1189 requirements for the design and construction of new or modification of existing Hazard Category (HC) 1, 2, and 3 nuclear facilities (as defined in 10 CFR Part 830). The CHPRC tailoring approach integrates the approaches and principles described in these DOE guides and standards into its EM projects.

The CHPRC PBS management organization defines the subproject requirements; the EPC organization manages the execution of the subproject as a support service to the respective CHPRC PBS Manager; and then turns the completed Project/facility/system over to the PBS Manager for operations. EPC has developed two procedures; PRC-PRO-PM-24889, Project Initiation and Execution, and PRC-PRO-PM-25000, Project Execution Plans, to describe the implementation of the requirements and principles of DOE O 413.3A and its associated Implementation Guides for each subproject that EPC manages.

2.1 100K Infrastructure Project

The 100K Infrastructure Project has a Total Project Cost (TPC) of less than $ 100 M and per PRC-PRO-PM-24889, the DOE Construction Decision (CD) process described in Order 413.3A is not applicable. However, some elements of DOE-STD-1189 are applicable for the 100K-West Basin Airborne Contamination Remediation subproject since it involves work both outside and inside of an existing HC-2 Nuclear facility.

Therefore, Appendix 1 contains a checklist which provides the listing of documents required by DOE Order 413.3A organized by project execution phase, and captures the basis of this tailoring strategy applied to the 100K Infrastructure Project.

3. Integrated Baseline

3.1 Scope Baseline

The following is the scope baseline for design and construction of the 100K Infrastructure Project.

- Relocation of twenty-three 13.8 kV Electrical Line Poles and re-stringing of the inter-connecting 13.8 kV power line
- Installation of a 230 kV to 13.8 kV substation
- Installation of 27,000 linear feet of underground piping for the import water line and potable and non-potable water distribution system for the 100K Area
- Erection of a 750,000 gallon multi-purpose water storage tank
- Installation of a water treatment plant with a design capacity of 50 gpm
- Installation of 700 linear feet of HVAC ductwork and three separate HVAC/HEPA skid units with a combined design flow rate of 3,600 cfm

3.2 Schedule Baseline

The schedule baseline is developed and available for review with the 100K project control organization. Key schedule dates for the 100K Infrastructure Project are provided in Table 3-1.

Table 3-1. Schedule Baseline

100K Infrastructure Subproject	Milestone Description	Baseline Date
K-West Basin Airborne Contamination Remediation Subproject	Transition to 100K Area Operations	September 30, 2010
100K Reactor Power Isolation Subproject	Transition of Power to the A9 Substation	September 30, 2010
River Water Infrastructure Subproject	Transition of water service to the new water treatment and distribution system	September 30, 2010
100K Infrastructure Project	Completion of transition of all three subprojects to 100K Area Operations	September 30, 2010

3.3 Cost Baseline

The Cost Baseline for the 100K Infrastructure Project is captured in WBS 041.02.06.01.01 and 041.02.07.01 and is summarized in Table 3-2 below.

Table 3-2. Cost Baseline

WBS Number	WBS Description	Cost Baseline
041.02.07.01.01	100K Closure Support Facilities Subproject	$350.0
041.02.07.01.02	100K Reactor Power Isolation Subproject	$6,433.4
041.02.07.01.03	100K River Water Infrastructure Isolation Subproject	$14,974.9

041.02.06.01.01.04	K-West Basin Airborne Contamination Remediation Subproject	$1,622.4
Total		**$23,380.7**
Note: $ in Thousands		

3.4 Funding Profile

The Engineering Design, Construction, and Acceptance Testing of the 100K Infrastructure Project occur between FY 2009 and FY 2010 and the funding profile is shown in Table 3-3. Costs in FY2009 were for project scoping and conceptual design with the majority of the project costs planned to occur in FY2010.

Table 3-3. Funding Profile for the 100K Infrastructure Project between FY2009 and FY2011

WBS Number	WBS Description	FY 2009	FY 2010	FY 2011	Total
041.02.07.01.01	100K Closure Support Facilities Subproject	$350.0	$0.0	$0.0	$350.0
041.02.07.01.02	100K Reactor Power Isolation Subproject	$753.9	$5,679.5	$0.0	$6,433.4
041.02.07.01.03	100K River Water Infrastructure Isolation Subproject	$1,402.7	$13,572.2	$0.0	$14,974.9
041.02.06.01.01.04	K-West Basin Airborne Contamination Remediation Subproject	$639.8	$982.6	$0.0	$1,622.4
Total		**$3,146.4**	**$20,234.3**	**$0.0**	**$23,380.7**
Note: $ in Thousands					

3.5 Life Cycle Cost

The total life cycle cost of the 100K Infrastructure Project is estimated at $ 23,380,700. This value includes only the above cost baseline as operations and maintenance of the installed subproject systems is budgeted and tracked in the overall PBS 041 Baseline for the 100K Area.

3.6 Baseline Change Control

The Project will utilize the CHPRC project baseline control procedures for baseline change control in accordance with PRC-GD-PC-40076, Baseline Change Control Implementation Guide, and PRC-PRO-PC-40074, Baseline Change Control Procedure. The Project Manager will work with the Project Control

Representative to assure compliance to requirements and EPC Management expectations are achieved when dealing with baseline change control issues.

The CHPRC Project Control Procedures and Implementation Guides applicable to this PEP are listed in Table 3-4.

Table 3-4. Project Control Procedures

Procedure Number	Title
PRC-GD-PC-40075	Cost Estimating and Budgeting Implementation Guide
PRC-GD-PC-40076	Baseline Change Control Implementation Guide
PRC-GD-PC-40077	Scheduling Implementation Guide
PRC-GD-PC-40080	Risk Management Implementation Guide
PRC-GD-PC-40082	Work Authorization Implementation Guide
PRC-GD-PC-40084	Baseline Performance Implementation Guide
PRC-GD-PC-40085	Estimate At Completion Implementation Guide
PRC-GD-PC-40094	Monthly Reporting Implementation Guide
PRC-MP-PC-40087	Organization
PRC-PRO-PC-40070	Work Scope Planning Procedure
PRC-PRO-PC-40072	Cost Estimating and Budgeting Procedure
PRC-PRO-PC-40073	Scheduling Procedure
PRC-PRO-PC-40074	Baseline Change Control Procedure
PRC-PRO-PC-40086	Estimate at Completion Procedure
PRC-PRO-PC-40095	Earned Value Management System Internal Surveillance Procedure

4. Project Management

4.1 Project Reporting

The 100K Infrastructure Project will implement CHPRC's Earned Value Measurement System (EVMS). This system provides scheduled progress, completed progress, actual costs, and performance status using a pre-established method, or "rules of performance," for taking percent complete against baseline activities for both design and field execution schedules.

The Project also implements CHPRC's project reporting requirements (Refer to PRC-GD-PC-40094, Monthly Reporting Implementation Guide) and since the Project is part of PBS RL-41, monthly inputs will be provided for inclusion in the PBS level monthly performance reports. In addition, a monthly meeting with the 100K Vice President will be held to discuss:

- Key Work Activities & Current Status
- Accomplishments
- 90 Day Look Ahead
- Major Issues
- Project Risk/Contingencies
- Support Needed

Project Controls performs variance analysis and forecasting, prepares estimates at completion and trending analysis, and prepares monthly reporting to assist project management in controlling the project baseline. As needed, corrective actions are developed to maintain or improve success in reaching project schedule and funding targets.

4.2 Risk Management

The project will follow guidance from PRC-GD-PC-40080, Risk Management Implementation Guide, when determining the risk associated with this project. Risk will be evaluated against the risk value criteria matrix shown below in Table 4-1.

Table 4-1. Risk Value Criteria Matrix

	CONSEQUENCE				
PROBABILITY	(1) **NEGLIGIBLE** None to minimal consequence. <$250K project life-cycle cost impact and no schedule impact.	(2) **MARGINAL** Slight impact in meeting objectives. $250K to $1M project life-cycle cost impact or non-critical-path schedule impact.	(3) **SIGNIFICANT** Significant degradation in meeting objectives. >$1M to $10M project life-cycle cost impact or recoverable slip to enforceable or incentivized milestone.	(4) **NEAR-CRITICAL** Impact to ultimate goals/objectives likely. >$10M to $50M project life-cycle cost impact or enforceable or incentivized milestones* in jeopardy.	(5) **CRITICAL** Severe impact to ultimate goals/objectives. Project stopped/ canceled or scope/funding pulled. >$50M project life-cycle cost impact or enforceable or incentivized milestones* missed.
(5) **Very Likely** (>90%)	Low	Moderate	High	High	
(4) **Likely** (75% to 90%)	Low	Moderate	Moderate	High	High
(3) **Medium** (26% to 74%)	Low	Low	Moderate	Moderate	High
(2) **Low** (10% to 25%)	Low	Low	Low	Moderate	Moderate
(1) **Very Low** <10%	Low	Low	Low	Low	Moderate

Project risk associated with this phase of the 100K Infrastructure Project are defined and categorized as follows:

- Electrical Shock/Death from high voltage work.
  Risk Ranked: Probability: Critical; Consequence: Very Low; Outcome: Moderate
- Collapse of trench during excavation with personnel inside:
  Risk Ranked: Probability: Critical; Consequence: Very Low; Outcome: Moderate
- Discovery of hazardous materials/radiological contamination during excavation activities:
  Risk Ranked: Probability: Medium; Consequence: Marginal; Outcome: Low
- Skin contamination during HVAC installation activities:
  Risk Ranked: Probability: Very Low; Consequence: Marginal; Outcome: Low
- Personnel Injury Resulting from striking against or struck by an object
- Risk Ranked: Probability Low; Consequence: Marginal; Outcome: Low

4.3 Engineering and Technology Readiness

The project does not require engineering and technology development and deployment. Existing methods and means will be used to perform work.

4.4 Alternative Analysis and Selection

The scope of the project does not require an alternative analysis and selection to be performed for the scope of work defined within this PEP. The project did perform a value engineering review and evaluated alternatives for each of the subprojects and incorporated the results into the completed design.

4.5 Value Management/Value Engineering

A value engineering meeting was held in September 2009 to scope out the 100K Reactor Power Isolation subproject approach with the 100K Infrastructure Project Team and DOE-RL. The meeting discussed alternatives methods to accomplish work and agreed on a preferred alternative and implementation strategy.

4.6 Environmental Regulatory Strategy

For environmental activities associated with EPC activities, implementation of PRC-PRO-EP-15335, Environmental Permitting and Documentation Preparation, will be reviewed by the Project Environmental Compliance Officer to assure necessary permits and documents are in place prior to work execution or are provided such that there is no impact to project activities.

4.7 Integrated Safety Management

The project will implement and participate in the established CHPRC processes for Integrated Safety Management System/Environmental Management System (ISMS/EMS) as described in PRC-MP-MS-003, Integrated Safety Management System/Environmental Management System Description (ISMSD). Therefore, a standalone strategy is not planned to be developed for this project.

The 100K Infrastructure Project Organizational structure and associated roles and responsibilities have been established to meet the requirements of PRC-MP-PM-40187, Engineering, Projects & Construction Integrated Environmental, Safety, and Health Management Roles, Responsibilities, and Functions. This includes adopting the following three guiding principles related to responsibilities.

- Line management is responsible for safety.
- Clear roles and responsibilities are defined.
- Competence is commensurate with responsibilities.

Implementation of ISMS/EMS on the 100K Infrastructure Project includes the following key plans/strategies.

- ISMS/EMS Qualities and Policy Communication and Compliance Verification – Environmental, safety, health, and quality aspects of the CHPRC and safety-related information will be clearly communicated to the project workforce, including subcontractors, and the 100K Infrastructure Project will implement actions to ensure that activities are carried out consistent with the policies.
- Communication of CHPRC ISMS/EMS qualities and policies, and safety-related information will be communicated to the workforce and subcontractors through multiple means.
  - CHPRC company-wide training and communications to the workforce.
  - Inclusion of ISMS/EMS and project specific safety requirements in subcontractor requirements documents, including required reading and specific targeted training as required.
  - Participation in periodic CHPRC corporate reviews/audits of the 100K Infrastructure Project workforce and subcontractors for compliance to ISMS/EMS and other safety requirements.
  - Periodic 100K Infrastructure Project internal reviews/audits of workforce and subcontractors for compliance to ISMS/EMS and other safety requirements.

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- Work scope Definition, Budgeting/Prioritization and Resource Allocation – The 100K Infrastructure Project will utilize established CHPRC systems, policies, and procedures for work scope definition, budgeting/prioritization, and resource allocation. All work scope activities are captured in the subproject WBS and are resource-loaded and budgeted. Work scope being performed by subcontractors is defined in subcontract specific Statements of Work and are tied back to the WBS. In circumstances during work scope execution when resources (labor or other) are under competing priorities within the CHPRC, prioritization decisions are made by CHPRC Senior Management. In no case will the resource allocation prioritization issues be allowed to result in work activities being done in a manner that compromises worker, public, or environmental safety.
- Hazard Identification, Analysis, and Categorization – Section 4.7.3 of this PEP describes the project's plans for project hazard identification, analysis, and categorization.
- Ensuring Work is Performed Within Established Controls – The 100K Infrastructure Project will implement the requirements of PRC-RD-WKM-8524, Supervision of Fieldwork, to ensure that all field work activities are performed with established controls for job hazard protection.
- Feedback and Continuous Improvement/Corrective Actions – The practices of feedback, continuous improvement, and corrective actions are embodied within CHPRC's Corporate ISMS/EMS policies and implementing procedures. The 100K Infrastructure Project will fully implement these policies and procedures for all project activities.
- CHPRC Management Reviews of Project ISMS Implementation – Consistent with the CHPRC ISMS/EMS system, CHPRC conducts periodic reviews of ISMS implementation on all CHPRC work activities, including the 100K Infrastructure Project. These reviews will be scheduled by CHPRC management and coordinated with the 100K Infrastructure Project Manager for support of the review.

4.7.1 Industrial Safety and Occupational Health

CHPRC administers the ISMS/EMS and the DOE Voluntary Protection Program (VPP) on all its projects. The ISMS/EMS and VPP function together, creating a work environment where management and workers team together to integrate Environmental Safety and Health (ES&H) requirements into their work planning and execution activities. The ISMS/EMS program provides a systematic and structured approach to integrating ES&H into work planning and execution, while VPP promotes excellence in occupational safety and health protection. The following procedures shown in Table 4-2 are the Industrial Safety and Occupational Health implementation documents that will be used in performing work on this project.

Table 4-2. Floor Level Implementation Documents

PRC-GD-WKM-12116	Work Planning Guide
PRC-GD-WKM-17132	Automated Job Hazards Analysis Process Guide
PRC-GD-WKM-079	Job Hazard Analysis
PRC-MP-CN-28049	Construction Procedure Manual
PRC-PRO-WKM-12115	Work Management

In addition, the following are potential safety hazards associated with executing this project:

- Working in and around heavy equipment
- Working in hot and cold working environments
- Working in remote locations
- Working with industrial hand tools and compacting equipment
- Working around rodents and insects

- Moving heavy items
- Working in awkward positions
- Uneven walking and working surfaces
- Radiological Hazards
- Working with hand tools
- Working with materials with sharp edges
- Working in and around high voltages

4.7.2 Nuclear Safety

The 100K Area Project Nuclear Safety organization is responsible in establishing nuclear safety controls over processing, handling and storage of radioactive or hazardous materials to ensure the safety and health of the workers, public and the environment. This organization ensures processes for the planning, development, review, approval, implementation and maintenance of safety basis documentation and hazard controls are in accordance with 10 CFR 830, Subpart B. That includes but is not limited to 1) determining whether a facility modification is a major modification; 2) planning and developing the hazard analysis, accident analysis, and hazard controls for a new or existing facility or activity; and 3) establishing, implementing, and maintaining the documented safety analysis and hazard controls, including technical safety requirements, to ensure adequate protection of the public, workers, and the environment. As part of these responsibilities, the 100K Area Project Nuclear Safety organization reviewed the appropriate sections of DOE-STD-1189, Integration of Safety Into the Design Process, Section 1.3, to determine if the project scopes involved in the 100K Infrastructure Project were subject to the requirements necessary for the applicability of DOE-STD-1189. As a result of this review, DOE approval was required for relief from the Technical Safety Requirements for the 105K West Airborne Contamination Remediation subproject at the 105K-West Basin (Hazard Category 2) facility. The other two subprojects did not impact a Hazard Category 1, 2, or 3 facility.

Additionally, the 100K Project employs a robust USQ review process, as described in AP NS-4-001, Unreviewed Safety Questions. In addition, Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.

4.7.3 Hazard Analysis

Hazard analysis is performed on a daily basis (e.g., EPC Construction activities will discuss the work to be performed on a daily basis). The job hazard analysis will be part of the daily pre-evolution briefings to ensure that hazards are identified and the corresponding mitigation measures are defined and understood by the workers prior to work execution. Modifications to the work plans will be made as necessary with input from workers and supervision. No work will be allowed if the proper safety precautions have not been taken or there is a concern on how to safely execute the task at hand. It is anticipated that residual diesel fuel and some hexavalent chromium may be present in some of the underground excavation during installation of the fire water loop around 105K-West. Appropriate industrial hygiene screening equipment will be used and revisions made to existing work packages and job hazard analysis before work will be allowed to commence for these contaminated areas.

In addition, there are no safeguards and security issues (e.g. materials) associated with this project. However, guiding principles associated with safeguards and security (e.g. badging, OPSEC, postings, etc.) will be followed.

4.8 Configuration Management

The following procedures form the basis for implementing configuration management on the 100K Infrastructure Project. The list is not intended to be all inclusive, but provides the fundamentals for configuration management requirements.

- PRC-PRO-EN-20050, Engineering Configuration Management
- PRC-PRO-EN-440, Engineering Document Change
- PRC-PRO-EN-8016, Design Change Notice Process
- PRC-PRO-EN-8017, As-Built Verification Process
- PRC-PRO-EN-2001, Facility Modification Package Process
- PRC-PRO-EN-16406, Engineering Vendor Information Process
- PRC-PRO-EN-709, CAD and Drawing Development and Control Process for Engineering Drawings

4.9 Records Management/Document Control

The Document Control and Records Management Plan is a collection of standards and implementing documents as described PRC-MP-IRM-40119, Document Control and Records Management Plan.

CHPRC generates and preserves records, ensuring that records contain adequate and proper documentation of the organization, functions, policies, decisions, procedures, and essential transactions performed under contract to the DOE. These records are designed to provide the information necessary to protect the legal and financial rights of the U.S. Government, CHPRC, and the public directly affected by the activities performed and managed by CHPRC.

All CHPRC record material will be identified, generated, authenticated, maintained, controlled and disposed of in accordance with the requirements and direction provided by the Document Control and Records Management Plan and the subordinate implementing procedures.

The corresponding procedures for managing controlled documents and records are provided in PRC-PRO-IRM-8310, Document Control Processes, and PRC-PRO-IRM-10588, Records Management Processes. The Project Document Control Lead acts as the point of contact (POC) and interface with Document Control System Administrators and authoring organizations. In addition, all project files will be provided within the Integrated Document Management System (IDMS) website.

4.10 Systems Engineering

The System Engineer Program is managed under procedure PRC-PRO-EN-16331, System Engineer Program, and is not applicable to this project as this project does not deal with defense nuclear facilities;.

4.11 Earned Value Management System

The Project Controls Lead will work with the 100K Infrastructure Project Manager to establish and maintain baseline scopes, schedules, and budgets. Timely updates and justification for variances and adverse earned value are provided as part of the monthly project reports.

Use of earned value will be implemented on the project using established CHPRC processes. The 100K Infrastructure Project has an approved baseline (see above Sections 3.2 and 3.3) and the project has established a field execution schedule that is linked to the baseline schedule. Project controls and performance reporting will be completed consistent with the established CHPRC (monthly) processes and

the project holds weekly project review meetings to status the engineering design and field execution schedules.

4.12 Quality Assurance

The CHPRC Quality Assurance Program (PRC-MP-QA-599) identifies its commitment to contractual requirements. It establishes requirements, assigns responsibilities, and describes the management systems established to ensure the quality of our activities and products. The QAP is the top-level quality assurance document of CHPRC, and compliance is mandatory. Implementation of the QAP is accomplished through company-wide procedures and instructions.

The project will implement the CHPRC QAP requirements using a graded approach. The project QA representative will determine, with the 100K Infrastructure Project Manager and Engineering/Design Authority, the level of a graded approach with concurrence of the Vice President of EPC.

The Project Management Team will be responsible for ensuring quality workmanship and will implement quality control measures that are necessary to ensure work conforms to design requirements, procedures and work practices.

This project is considered an Enhanced Commercial quality level for procurement related activities. Enhanced commercial is assigned to items and services that are important to project mission and represent sufficient risk that controls beyond standard commercial practices are considered necessary to ensure the item or service is suitable for its intended purpose. Examples where enhanced commercial would be assigned include:

- General Service (GS) items and associated services posing a low project risk, but based on engineering evaluation, require additional controls beyond standard commercial practices.
- Any item or service with the potential to cause radiological harm (in the present or the future) which has not been designated as quality class 1 or 2
- Items where independent verification is required by national consensus standard (e.g. AWS D1.1, ANSI B31.1, ASME Section VIII) which have not been designated as quality class 1 or 2.

4.13 Project Reviews

The 100K Infrastructure Project has both formal and informal reviews as the design, procurement and construction progresses. These included 30 and 90 percent design reviews, weekly BTR/Engineering Design subcontractor meetings, weekly Construction progress status meetings, and monthly project cost/schedule performance status reviews. All of these reviews were conducted in accordance with established processes and programs identified in the applicable CHPRC procedures.

In addition, the cost, schedule, and technical baselines were reviewed using the CHPRC Project Review Board (PRB) process (reference PRC-CHRT-PM-40249).

4.14 Communication Management Plan

Activities that require communication to stakeholder and other interested parties will be provided to EPC Project Manager who will follow the necessary protocols for issuance.

Presentations requested by EPC to Regulators or other offsite parties will be reviewed by CHPRC Communications Group and cleared for release prior to issuance. The 100K Vice President will make the determination for EPC participation in any meeting requested by DOE, Regulators or Stakeholders.

5. Project Acquisition Strategy

The vision of the project is to create a project delivery process that communicates expectations and roles and responsibilities, while being flexible to manage continuous project maturity which completes work in a safe manner, while maintaining environmental compliance throughout all phases. The 100K Infrastructure Project is on a very fast timescale which inherently requires a significant amount of integration and ability to adjust to changing situations.

5.1 Design and Engineering Phase

The design engineering scope consists of the appropriate drawings, specifications, and supporting engineering documentation for the acquisition and construction/installation associated with the three subprojects. . The design objective is to provide a complete package from which the facility and associated subsystems can be safely and cost-effectively completed within the required schedule. This will be completed assuring the following is obtained:

- Assure quality and safety aspects are incorporated into the design and field activities
- Utilize electrical utilities experience to assure that past successes and improvements are defined in the FDC;
- Provide deliverables that meet all of the project's functional, regulatory, safety, quality, cost, schedule, and programmatic requirements. Coordinate engineering work to ensure that the end product will align with other ongoing operations/activities;
- Assure trained, qualified and dedicated personnel are available to support the current schedule
- All design media is checked by an independent, qualified individual.

The 100K organization is responsible for providing the 100K Infrastructure Project design requirements as documented in the Functional Design Criteria (FDC). The 100K organization will also provide a summary level review of the completed design to ensure compliance to the FDC (KBC-41961).

5.1.1 Design/Engineering Strategy

Design Engineering was performed by a CHPRC pre-selected subcontractor, ARES Corporation, who worked under a negotiated, fixed price contract. ARES provided design engineering services in accordance with statement of work requirements and provided a Professional Engineer stamp when the design was completed. Design reviews were performed to assure that the design approach met the FDC and project expectations. Comments identified during the design reviews were reviewed and resolved with the appropriate discipline involved. Any issues that were not resolved were provided to the 100K Infrastructure Project Manager for resolution. ARES responsibilities included:

- Development of functional criteria and obtaining the applicable 100K Design Authority concurrence
- Conducting 30 and 90 percent design reviews following the principles defined in PRC-PRO-EN-8336, Design Verification
- Final designs were reviewed and stamped by a Professional Engineer in the State of Washington
- Developed procurement and construction specifications for each subproject
- Developed a construction inspection/evaluation plan

- Identified long lead procurements items at about the 60% design phase and obtained concurrence from the appropriate 100K Design Authority

5.1.2 Design Verification

The project conducted 30 and 90 percent design reviews following the principles defined in PRC-PRO-EN-8336, Design Verification. Final design was reviewed and stamped by a Professional Engineer in the State of Washington.

5.1.3 Research and Development

This project did not require any research and development activities.

5.1.4 Technical Configuration Baseline

The configuration baseline for technical requirements was identified in the FDC.

5.2 Procurement Strategy

5.2.1 Procurement

Each subproject was subcontracted out with its own statement(s) of work to address the specific requirements, deliverables and expectations. The Project Manager in conjunction with the Construction Manager and BTR developed statement(s) of work in accordance with PRC-PRO-AC-186, Statement of Work. The statement of work was reviewed by the appropriate disciplines to assure requirements and expectations are achieved. Once the internal project team had completed their review and comments incorporated, the statement(s) of work were sent to CHPRC Procurement for final review and issued for bid to the existing basic ordering agreement contractors. When bids were received, the Project Manager, Construction Manager, BTR, and selected subject matter experts reviewed the bids. Bid evaluation was based upon company safety performance, cost, schedule, and previous work experience. Once a selection was recommended by the review team, the 100K Infrastructure Project Manager informed the Vice President of EPC of the selection and recommendation. Concurrence by the Vice President of EPC was obtained and CHPRC Procurement was notified of the concurrence.

The following summarizes the procurement strategy that was implemented for each of the three subprojects.

- 100K River Water Infrastructure Isolation Subproject:
  - Watts Construction was subcontracted to install the import raw water line and the fire and potable water lines inside the 100K area
  - GA Grant was subcontracted to install the new water treatment plant
  - PALL Corporation was subcontracted to provide the microfiltration water treatment plant equipment
  - Hughes was contracted to provide the emergency diesel fire water pump.
  - Installation of the fire water lines around the 100K-West Reactor was self-performed using a Task Charge Authorization (for EPC direct-hire work through Fluor Federal Services) due to the potential of uncovering hazardous or radioactive materials during any subsurface excavations

- K-West Basin Airborne Contamination Remediation Subproject:
  - EMI was contracted to provide the HVAC/HEPA filter skid units
  - GA Grant was subcontracted to install the ductwork inside the 105K-West Basin

- General exterior site preparation for the 105K-West Basin was self-performed using a Task Charge Authorization (TCA)

- 100K Reactor Power Isolation Subproject:
  - In order to minimize coordination efforts, a turnkey design/build subcontract was awarded to EPC Services for design, procurement and installation of the skid-mounted substation in the A9 switchyard
  - A separate subcontract was awarded to Fowler to install the 13.8 kV electrical lines
  - Installation of ducts and pull boxes in the A9 switchyard was self-performed using a Task Charge Authorization

The key procedures that were applied to all the above procurement activities are as follows:

- PRC-PRO-AC-186, Statement of Work
- PRC-RD-AC-10320, Acquisition System Requirements
- PRC-PRO-AC-16405, Submittal Management
- PRC-PRO-AC-123, Material Request Process.

5.3 Construction Strategy

A kick off meeting was held with each of the above referenced Construction Contractors after the notice of award was given. The meeting reviewed the project expectations, project performance, and identified any specific or unclear requirements.

Each Contractor provided submittals; obtained submittal acceptance and completed pre-requisite training prior to work execution as was defined in the statement of work. Once all the pre-requisite requirements were met, the contractor mobilized and commenced construction operations.

The EPC Construction Manager is the overall responsible party for coordinating the daily construction work and assuring that all work activities are organized and planned in a safe and efficient manner while maintaining regulatory and environmental compliance. In addition, the Contractor, BTR and Construction Manager meet routinely to review project cost and schedule performance. Schedules were reviewed and updated weekly. Cost performance was reviewed monthly.

The EPC Field Work Supervisors (FWS) will support the Construction Manager and ensure that daily pre-job briefings are conducted, work assignments are identified, and subcontractor performance expectations are communicated effectively.

An EPC Quality Control engineer will visit the construction site to provide an independent assessment to assure that design requirements are being implemented properly. In addition, an EPC Project Safety representative will review construction activities and provide feedback for implementing continuous safety improvement throughout the project's construction.

At the completion of each subcontracted scope of work, a joint walk down between EPC Construction Services and the subcontractor will be conducted to ensure that all items have been completed in accordance with the design and specification requirements. Open issues that are declared "pre-start" will be corrected prior to initiation of the acceptance testing.

5.3.1 License and Permitting

EPC Construction Services also obtained the required site permits/approvals for all work activities, including those required to support the construction subcontractors. The following is a summary of the permits and approvals that were required:

- Electrical Installation Permit
- Electrical Service Request
- Hanford Site Excavation Permit
- Radiological Work Permits
- Utility/Building System Outage
- Hazardous Energy Control (Lockout/Tagout)
- Hot work permit
- Road Closure Notifications
- Fire Marshal Permit

5.4 Testing/Startup/Turnover

EPC will conduct the required testing to assure items and components have been properly installed. Items that are found deficient will be treated as a non-conformance and will be managed and tracked until completion. During startup activities coordination with the 100K Project Team will be required to assure proper safety controls and safety basis requirements are not compromised. Startup and testing activities will be performed under an approved work control plan that is reviewed and concurred by the 100K Work Release Representative prior to initiation of testing and startup activities. Start-up and testing activities will be subject to the USQ process. Testing involving the fire pump and associated systems will be conducted by trained and qualified personnel.

5.5 Acceptance Testing

EPC Construction Services will perform a Construction Acceptance Test (CAT) for the project. The Construction Manager, Field Engineer, Construction Inspector along with the appropriate Design Authority will verify and validate that systems and processes were constructed in accordance with design requirements and their performance is as intended.

If non-conformances are identified, test deficiency reports will be prepared and the review team will categorize them as either pre or post start issues. All pre start up issues will be completed prior to turnover to operations using an approved work control process. Post start issues will be completed on an accelerated basis with the intent of having them resolved within a 30 day window. Concurrence will be obtained by the applicable Design Authority for items that will take longer than 30 days to complete..

An Acceptance Test Plan (ATP) will be prepared and issued by the EPC Design Agent. The ATP will have the 100K Area Operations Group input during its development and once approved, the ATP will be used to perform and validate that all the systems are working as intended. The test plan defines each type of test (Factory Acceptance Test, Construction Acceptance Test, Engineering Inspections, Acceptance Test Procedure, and Operational Test Procedure), and the test types each major piece of equipment will be subjected to.

The 100K organization will be responsible for the development, issuance and training to any new procedure or processes. Acceptance testing activities will be subject to the USQ process. Testing involving the fire pump and associated systems will be conducted by trained and qualified personnel. Non-conformances involving fire protection systems will be designated as post-start issues only with the approval of the Hanford Fire Marshal's Office.

At completion of the ATP, equipment operating manuals, records, warranties, etc will be assembled and provided to the 100K Operations Group and a Construction Completion Document (CCD) will be prepared and issued to formally turn over each subproject from EPC to the 100K Operations Group so that they can begin operational testing..

The operational testing will be performed to verify and validate procedures and provide training for facility operators, as appropriate. The 100K Area Facility Engineering will develop and issue an Operational Test Plan (OTP) that will be implemented by the 100K Operations organization. After completion of the OTP, the systems will be ready for permanent operations. During performance of Operation Test Plan, the EPC construction forces will be available via a Construction Work Authorization Envelope (CWAE) to complete non-critical ATP punchlist items or to assist in the resolution of technical issues with the equipment.

6. Project Closeout

6.1 Objectives

Project closeout is initiated once the construction has been completed and the project facilities are operational and commissioned. Closeout will document the final status of the project, including the performance measures at completion of the project.

The primary objectives of project close-out include:

- Settling all outstanding issues and completing final negotiations with the client or contractors regarding change orders, claims or adjustments
- Transferring all required property, project documents and engineering information to the customer.
- Issuing the Project Completion Report and the Project Profile to record project history, performance, and to identify lessons learned to aid future projects

In addition, planning for close-out will begin at project initiation and will be performed in compliance with the requirements of the prime contract. Project close-out will have the participation and concurrence of all key project personnel

6.2 Organization and Responsibilities

The 100K Infrastructure Project Manager is responsible for implementing the close-out of the project. A project close-out responsibility checklist will be prepared, which will identify the individuals or groups that need to assist or provide input on the key areas of project close-out.

The Construction Completion Document, (Site Form A-6002-656) will be issued to the 100K Area Operations Group indicating that the work is mechanically complete and ready for commissioning and start up. The CCD will be completed to transfer custody of each subproject from EPC to the 100K Area Operations Group upon completion of the ATP. Punchlist items deemed not required for operations may be finished after the CCD is completed upon approval by both the 100K Infrastructure Project Manager and the 100K Vice President.

6.3 Transfer and Disposition of Property and Records

Prior to completion of the project, the 100K Infrastructure Project Manager, Document Control Lead, and the 100K Area Operations Group Manager will review the retention schedule and reconfirm, by category, the disposition of the records generated during the duration of the project

6.4 Project Completion Report

The project will be documented in a Project Completion Report, which will summarize all aspects of the project. The 100K Infrastructure Project Manager is responsible for the report preparation, review, and distribution. Planning for the preparation of the Project Completion Report will begin at project initiation with the assignment of responsibilities and identification of documents to be retained.

In addition, a key inclusion in the Project Completion Report is a discussion of Lessons Learned, which can aid future projects in improving project execution.

APPENDIX A

Project Tailoring Strategy

Table A-1. 100K Infrastructure Project Tailoring Strategy

Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	**Item #**	**Requirement/Deliverable**	**Approach** (check block if planned/applicable)	**Basis** (provide basis for approach as required)
Project Planning Phase – Approve Mission Need	1	Perform **Pre-Conceptual Planning** activities that focus on Projects strategic goals and objectives, safety planning, and design. For Hazard Category 1, 2, and 3 nuclear facilities to the specificity possible document expectations for safety in design (DOE STD-1189)	**Estimated Project Size:** [ ] TPC >$100M [X] TPC >$20M to <$100M [ ] TPC <$20M **DOE-STD-1189 Application:** [X] Hazard Category 1,2, and 3 facility or major modification to Hazard Category 1,2 and 3 facility **Project Strategic, goals, and objectives identified:** [ ] Preliminary Functional Requirements Document **Environmental/Regulatory:** [X] CERCLA Project [ ] RCRA Project	The 105K West Airborne Contamination Remediation subproject involves an Hazard Category 2 facility and the work required DOE approval for relief from the Technical Safety Requirements for this Facility. The other two subprojects did not impact a Hazard Category 1, 2, or 3 facility. Functional Design Criteria was developed and issued (KBC-41961) to define the functional requirements. The 100K Infrastructure Project activities are conducted to support the 100K Area Record of Decision, as amended.
	2	Prepare **Mission Need Statement** document. Required only for projects subject to DOE CD approval.	[ ] Mission Need Statement	N/A as this project is not subject to DOE CD approval.
	3	Projects **requiring** a CD process prepare a **Tailoring Strategy** describing approach for adapting CD requirements based upon project's risk and complexity. CD process required for EM cleanup subprojects with a TPC of $100M or more.	[ ] Critical Decision 0 package [ ] Critical Decision 1 package [ ] Critical Decision 2 package [ ] Critical Decision 3 package [ ] Critical Decision 4 package	. N/A as this project is not subject to DOE CD approval.
	4	Projects **not** requiring a CD process prepare a initial Tailoring Strategy describing approach for adapting DOE 413.3A requirements with the CHPRC Project Review Board (PRB)	[ ] PRB Approval to Proceed to Project Definition Phase (Conceptual Design/Alt Analysis) [ ]PRB Approval to Proceed to	Project Execution Plan (PEP) describes a tailoring approach for implementation of DOE 413.3A requirements in a graded fashion. PRB conducted in April 2010 for Approval to Proceed with Construction of all three subprojects.

Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	**Item #**	**Requirement/Deliverable**	**Approach** (check block if planned/applicable)	**Basis** (provide basis for approach as required)
		reviews	Preliminary Design [ ]PRB Approval to Proceed to Final Design [X] PRB Approval to Proceed to Construction [X] PRB Approval to Proceed to Project Turn-over/Operations Start	
	5	Perform Mission Validation Independent Reviews.	[ ] Mission Evaluation Independent Review	N/A since project has already been authorized to proceed.
Project Definition Phase: Alternative Evaluation Conceptual Design	6	Prepare a Safety Design Strategy for projects subject to DOE-STD-1189, as amended	[ ] Safety Design Strategy	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.
	7	Perform Alternatives Analysis, Conceptual Design, and further develop Requirements Documents.	[ ] Conceptual Design Report [ ] Alternatives Analysis Report [ ] Updated Functional Requirements Document [X] Functional Design Criteria	Design strategy is developed through the functional design criteria which is reviewed and accepted by 100K Engineering.
	8	Prepare an Acquisition Strategy	[ ] Stand alone Acquisition Strategy document [X] Acquisition Strategy included in PEP	PEP Section 5 discusses the Acquisition Strategy for Design, Procurement, and Construction.
	9	Prepare Project Execution Plan	[X] Project Execution Plan	

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	**Item #**	**Requirement/Deliverable**	**Approach** (check block if planned/applicable)	**Basis** (provide basis for approach as required)
	10	Establish and Charter an **Integrated Project Team.** Required only for projects subject to CD process.	[ ] Charter for Integrated Project Team	Project uses an independent group of subject matter experts to conduct design reviews. In addition, the subproject will be subject to the Project Review Board process for review of cost, schedule, and technical baselines.
	11	Conduct a Design Review of the conceptual design. As part of the design review for high-risk, high-hazard, and Hazard Category 1, 2 and 3 nuclear facilities, conduct a **Technical Independent Project Review**.	[ ] Design Review of Conceptual Design [ ] Technical Independent Project Review	Design reviews at 30 and 90 percent complete were held.
	12	Prepare a Project Data Sheet for Line Item Projects	[ ] Project Data Sheet	N/A as this project is not a line item project.
	13	Identify long lead procurements required to be approved to start during Preliminary Design Phase.	[X] Long Lead Procurements required for PD phase	Long lead procurements (Rail turnouts for plant and A9 Switchyard) were identified and ordered early.
	14	Prepare environmental documents required for Conceptual Design Phase and prior to start of Preliminary Design	[ ] RI/FS [ ] RFI [ ] Other (list below)	No separate environmental documents were required to be prepared for the 100K Infrastructure Project.
	14a	Document High Performance Sustainable Building considerations per DOE Order 450.1, change 2 in CDR and Acquisition Strategy, as appropriate	[ ] HSB principles applied	This project does not involve new facility construction or a facility upgrade where HSB principles are applicable.
	15	Prepare a **Conceptual Safety Design Report** for Hazard Category 1, 2 and 3 nuclear facilities	[ ] Conceptual Safety Design Report	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	**Item #**	**Requirement/Deliverable**	**Approach** (check block if planned/applicable)	**Basis** (provide basis for approach as required)
	16	Prepare a **Preliminary Hazard Analysis Report** for facilities that are below Hazard Category 3 threshold as defined in 10 CFR 830, Subpart B and obtain DOE approval	[ ] Preliminary Hazard Analysis Report	The 105K West Airborne Contamination Remediation subproject involves an Hazard Category 2 facility and the work required DOE approval for relief from the Technical Safety Requirements for this Facility. The other two subprojects did not impact a Hazard Category 1, 2, or 3 facility.
	17	Prepare a **Conceptual Validation Report** on DOE review of the Conceptual Safety Design Report for Hazard Category 1, 2 and 3 nuclear facilities	[ ] Conceptual Validation Report	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.
	18	Determine that the CHPRC **Quality Assurance Program** is acceptable for subproject and continues to apply. Prepare **Project Specific QAP** if required.	[ ] Prepare project specific QAP if required	Project will follow the CHPRC QAP using a graded approach and will obtain 100K QA review and acceptance before implementation.
Project **Execution Phase: Preliminary Design**	19	Update **Safety Design Strategy** for projects subject to DOE-STD-1189, as amended	[ ] Updated Safety Design Strategy	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.
	20	Establish a **Performance Measurement Baseline**, including Key Performance Parameters, total project cost, schedule and scope. The Performance Measurement Baseline may be included in the Project Execution Plan.	[X] PMB Established	
	21	Update the **Project Execution Plan**	[X] Updated PEP	

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	Item #	Requirement/Deliverable	Approach (check block if planned/applicable)	Basis (provide basis for approach as required)
	22	Perform a Performance Baseline Validation External Independent Review or a Performance Baseline Validation Independent Project Review. External Independent Reviews are conducted by the Office of Engineer and Construction Management to validate the Performance Baseline for projects with a TPC greater than or equal to $100M. Independent Project Reviews are conducted by CHPRC to validate the Performance Baseline for projects with a TPC less than $100M.	[ ] Perform Performance Baseline External Independent Review [X] Performance Baseline Validation Independent Project Review	100K Project Controls provided an independent review of project baseline.
	23	Develop an Independent Cost Estimate or perform and Independent Cost Review for Major System Projects as part of the Performance Baseline External Independent Review performed by the Office of Engineering and Construction Management. An Independent Cost Estimate should be performed where complexity, risk, cost, or other factors create a significant cost exposure for the DOE.	[ ] Develop Independent Cost Estimate [X] Perform Independent Cost Review	Independent cost analysis was performed on the three subprojects by the 100K Project Controls organization.
	24	Determine that the Quality Assurance Program is acceptable and continues to apply. The QA Program must fully address all applicable QA criteria as defined in 10 CFR 830 Subpart A and DOE O 414.1C	[ ] Update QAP	Project will follow the CHPRC QAP using a graded approach and will obtain 100K QA review and acceptance before implementation.

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	Item #	Requirement/Deliverable	Approach (check block if planned/applicable)	Basis (provide basis for approach as required)
	25	Prepare a Preliminary Design and update Project Requirements Documents. This stage of design is complete when it provides sufficient information to support development of the Performance Baseline	[ ] Preliminary Design Report [X] Updated Functional Design Criteria [ ] Updated Functions & Requirements Document	
	26	Update Project Data Sheet, if applicable	[ ] Prepare Project Data Sheet	N/A as this project is not a line item project.
	27	Conduct a Design Review of the Preliminary Design	[X] Design Review of Preliminary Design	Design reviews at the 30 and 90 percent design phases were conducted by an independent review group.
	28	Prepare a Hazard Analysis Report	[ ] Hazard Analysis Report	The 105K West Airborne Contamination Remediation subproject involves an Hazard Category 2 facility and the work required DOE approval for relief from the Technical Safety Requirements for this Facility. The other two subprojects did not impact a Hazard Category 1, 2, or 3 facility.
	29	Prepare a Preliminary Security Vulnerability Assessment Report if applicable.	[ ] Preliminary Security Vulnerability Assessment Report	105K West Physical Security reviewed the 105K West Airborne Contamination Remediation subproject design. No other security reviews were required for the other two subprojects.
	30	Prepare a Preliminary Safety Validation Report based upon DOE review of the Preliminary Safety Design Report for Hazard Category 1, 2 and 3 nuclear facilities	[ ] Preliminary Safety Validation Report	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	Item #	Requirement/Deliverable	Approach (check block if planned/applicable)	Basis (provide basis for approach as required)
		Environmental Stewardship –High Performance Sustainable Building if applicable provisions into the preliminary design and design review	Sustainability Environmental Stewardship – High Performance Sustainable Building Provisions into design	[illegible] project does not [illegible] construction or a facility upgrade where HSB principles are applicable.
	32	Complete (or obtain approval of) Final National Environmental Policy Act documentation which must be completed prior to the start of final design	[X] Complete Final NEPA documentation and obtain approval	The 100K Environmental Compliance Officer obtained a NEPA Categorical Exclusion for all the 100K Infrastructure Project activities.
	33	Prepare environmental documents required prior to start of Final Design	[ ] ROD [ ] RD/RAIP [ ] Final RCRA Permit Mod and CMP [ ] Other (list)	No separate environmental documents were required to be prepared for the 100K Infrastructure Project
Final Design	34 √	Update the Safety Design Strategy for projects subject to DOE-STD-1189, as amended	[ ] Update Safety Design Strategy	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.
	35	Complete and review **Final Design** or determine that the design is sufficiently mature to start procurement or construction	[X] Complete and Review Final Design	
	36	**Update all project documentation** to reflect any changes resulting from Final Design, including the Project Execution Plan, Performance Baseline, Project Data Sheet, etc.	[X] Updated Project Execution Plan [X] Updated Functional Design Criteria Document [ ] Updated Functions and Requirements Document [ ] Other	Final design review will be conducted by an independent team of subject matter experts and the final design will be reviewed and stamped by a Professional Engineer licensed in the State of Washington.

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Phase	Item #	Requirement/Deliverable	Approach	Basis
		Perform and [illegible] ent Review	[illegible] k if plan [illegible] for Consideration of Execution Readiness	[illegible] and is part of the [illegible] that was [illegible] April 21, 2010.
		all Major System Projects to verify execution readiness. A similar Independent Review must be performed for Non-Major System Projects unless justification is provided and a waiver is granted by the Acquisition Executive		
	38	Prepare the Documented Safety Analysis	[ ] Documented Safety Analysis	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.
	39	Update the Hazard Analysis Report	[ ] Updated Hazard Analysis Report	The 105K West Airborne Contamination Remediation subproject involves an Hazard Category 2 facility and the work required DOE approval for relief from the Technical Safety Requirements for this Facility. The other two subprojects did not impact a Hazard Category 1, 2, or 3 facility.
	40	Update the Preliminary Security Vulnerability Assessment Report	[ ] Preliminary Security Vulnerability Assessment Report	105K West Physical Security signed off on the 105K West Airborne Contamination Remediation subproject Facility Modification Package and the Construction Work Package for this work. No other security reviews were required for the other two subprojects.
	41	Prepare a Safety Evaluation Report based upon review of the Preliminary Safety Analysis	[ ] Safety Evaluation Report	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.
	42	Prepare a Construction Project Safety and Health Plan	[ ] Project Construction Project Safety and Health Plan	FFS Construction will follow their existing H&S requirements. Subcontractors will be required to implement ISMS requirements and follow CHPRC H&S requirements.

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
Project Ph[illegible]	[illegible]	Requirement/Deli[illegible]	Approach ([illegible]/applicable)	Basis ([illegible]vide basis for approach as required)
[illegible]		[illegible]p-High Performance Sustainable Building provisions into Final Design and the External Independent Review.	[illegible] Environmental Stewardship-High Performance Sustainable Building provisions into Final Design	[illegible] does not imply [illegible] construction or a facility upgrade where HSB principles are applicable.
[illegible]	44	Update the Quality Assurance Program for construction, field design changes, and procurement activities.	[ ] Update QAP	Project will follow the CHPRC QAP using a graded approach and will obtain 100K QA review and acceptance before implementation.
Tra[illegible]tion/Clos[illegible]out Phase – Approve Start of Operations or Project Completion	45	Verify Key Performance Parameters or Project Completion Criteria have been met and mission requirements achieved.	[X] Project component and system testing [ ] Operational Start-up Testing	EPC will conduct construction acceptance testing to verify system and components are working as intended. Once completed, the subproject will implement an Acceptance Test Plan to verify and validate the proper working of systems and components. EPC and 100K will jointly work together during the Operational Test Plan phase and validate systems and components are working properly.
	46	Complete a Readiness Assessment or an Operational Readiness Review and resolve all pre-start findings including ensuring Operations and Maintenance Staff are properly trained and qualified to operate and maintain the equipment, systems, and facilities being turned over.	[ ] Readiness Assessment [ ] Operational Readiness Review	Construction Acceptance Tests and implementation of an Acceptance Test Plan and Operational Test Plan will be performed.
	47	Issue an updated Quality Assurance Plan to address testing, identified deficiencies, and startup, transition, and operation activities.	[ ] Updated QAP	Project will follow the CHPRC QAP using a graded approach and will obtain 100K QA review and acceptance before implementation.
	48	Revise the environmental management system to ensure that it incorporates new environmental aspects related to turnover and operations.	[ ] Update Environmental Management System documents	The 100K Environmental Compliance Officer will determine if the environmental management system will need to be revised due to turnover activities.

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Project Phase and DOE 413.3A Requirements/Deliverables			Project Tailoring Strategy	
[illegible]		Requirement/Deliverable	Approach	Basis
		Technical safety requirements for the Category 1, 2, [illegible] nuclear facilities.	[illegible]	The 100K Area Safety Basis is the result of all three 100K Infrastructure subprojects.
	50	Finalize the Hazard Analysis Report and obtain DOE approval (field level)	[ ] Final Hazard Analysis Report [ ] Obtain DOE Approval	The 105K West Airborne Contamination Remediation subproject involves an Hazard Category 2 facility and the work required DOE approval for relief from the Technical Safety Requirements for this Facility. The other two subprojects did not impact a Hazard Category 1, 2, or 3 facility.
	51	Finalize the Security Vulnerability Assessment Report if one was required.	[ ] Final Security Vulnerability Assessment Report	105K West Physical Security reviewed the 105K West Airborne Contamination Remediation subproject design. No other security reviews were required for the other two subprojects.
	52	Prepare a Safety Evaluation Report based upon review of the Documented Safety Analysis and Technical Safety Requirements for Category 1,2, and 3 nuclear facilities	[ ] Safety Evaluation Report	N/A as Unreviewed Safety Question (USQ 0082-2010) determined there were no changes required to the 100K Area Safety Basis as a result of all three 100K Infrastructure subprojects.
Project Closeout Requirements	53	Perform final administrative and financial closeout and prepare a Final Closeout Report once all project costs are incurred and invoiced and all contracts are closed.	[x] Final Project Closeout Report	
	54	Prepare a Lessons Learned Report and submit to OECM for broader sharing among DOE project management community	[x] Lessons Learned Report	Lessons Learned will be a section within the Project Completion Report.
	55	Complete project required Operational Documentation	[x] Complete Operational Documentation	EPC will provide Acceptance Test Plan completion documentation. Operational documentation will be the responsibility of 100K.

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EXHIBIT 51

CH2MHILL
Plateau Remediation Company

INTEROFFICE MEMORANDUM

32400-QPA-2010-013

Date: April 14, 2010

To: K. A. Dorr, H3-23

From: S. J. Turner, Manager of Performance Oversight

Subject: FINAL REPORT, INDEPENDENT ASSESSMENT OF ENGINEERING, PROJECTS AND CONSTRUCTION, CHPRC-PO-IA-10-02

The CHPRC Performance Oversight Organization conducted an Independent Assessment at Engineering, Projects and Construction. The scope of the assessment included organizations, facilities, and activities within the Sludge Treatment, Construction, and all active projects. The performance-based assessment was conducted to evaluate the Project's implementation of programs, procedures, and policies as they relate to conduct of work. The assessment was conducted during the second quarter of fiscal year 2010.

The attached final report presents and discusses 8 findings and 4 opportunities for improvement. The Condition Reports, which are referenced within the body of the final report, provide details for the issues and must be resolved following the process in PRC-PRO-QA-052, *Issues Management*.

If I can be of assistance to you, please contact me at 376-2144.

dt/mrc

Attachment

cc:
J. J. Allen, H8-22
J. A. Archuleta, H8-43
M. T. Bachand, H3-23
M. R. Calvert, H8-22
D. W. Clark, R3-50
M. W. Clayton, H8-22
B. S. Harder, H8-22
M.W. Johnson, A3-06
S. M. Kelley, H8-22
D. P. Kimball, H3-23
M. W. Manderbach, B4-60
P. M. McEahern, H8-20
M. A. Nickle, R4-03
L. S. Nye, H8-20
M. J. Ostrom, H3-21
J. R. Freeman-Pollard, H3-23
V. M. Pizzuto, H7-30
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D. L. Vance, H8-22
^CHPRC Correspondence

Independent Assessment of Engineering, Projects and Construction

Revision 0

Independent Assessment of Engineering, Projects and Construction

D. Thornton, Assessment Team Lead

J. J. Allen, Team Member

B. S. Harder, Team Member

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Approved by:

4/14/10

S. J. Turner, Manager
Performance Oversight

TABLE OF CONTENTS

EXECUTIVE SUMMARY 5

1.0 PURPOSE AND SCOPE 7

2.0 ASSESSMENT AREA EVALUATIONS 8

2.1 Management Systems 8

2.2 Conduct of Operations 8

2.3 Emergency Preparedness 10

2.4 Environmental Quality Assurance (EQA)/Environmental Management System (EMS). 12

2.5 Training 12

2.6 Issues Management/Occurrence Reporting 13

2.7 Maintenance/Work Planning and Control 13

2.8 Quality Assurance 16

2.9 Chemical Management 17

2.10 Occupational Safety and Health 18

Attachment 1 – LIST OF RECORDS REVIEWED

Attachment 2 – PERSONNEL INTERVIEWED

Attachment 3 – EVOLUTIONS OBSERVED

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EXECUTIVE SUMMARY

The CH2M HILL Plateau Remediation Company (CHPRC) Performance Oversight Organization conducted an independent assessment at Engineering, Projects and Construction (EPC). The scope of the assessment primarily focused on organizations, facilities, and activities within the Sludge Treatment, Construction, and active projects. Some EPC interface activities with other CHPRC projects were included in the scope of the assessment.

The performance-based assessment was conducted to evaluate the Project's implementation of programs, procedures, and policies as they relate to conduct of work. The assessment focused on the adequacy, compliance, and in-field execution of work activities and processes that support the Project's mission. The in-field portion of the assessment was conducted during the period of March 8 through 19, 2010.

EPC routinely demonstrated the ability to perform work activities in a safe manner. The EPC project management systems were functional with some programs very effective and some still reflecting the maturing status of a recently restructured organization with new leadership. The EPC management team was very experienced and exhibited a high level of leadership. This was demonstrated through their in-field presence observing and monitoring work activities and by actively participating in the Plan-of-the -Day, Construction Forces Weekly Safety/Planning Meeting, and the Monthly Subcontractor Safety Meeting. Interviews with project personnel indicated that information was communicated fairly well up and down the organizational ladder. Also, communication/interface with other CHPRC projects (i.e. customers) was effective and performed on a routine basis. Field observations indicated that work teams were generally well informed about matters having the potential to impact their activities. EPC personnel had an understanding of management's expectations and their performance objectives.

The EPC project had programs/processes in place that supported its current mission. Many of these programs were well-documented and maintained, with some being very effective. However, some of the programs reflected the status of a project recently restructured and in the process of going through a transition. As an example, the Emergency Preparedness and HAZCOM programs were not well implemented.

During the assessment the following findings and opportunities for improvements were identified:

Findings:

- A deficiency was identified that related to logkeeping practices, as required by PRC-PRO-OP-24382 (CR-2010-1077).
- Miscellaneous Tags Log was not well maintained (CR-2010-1073).
- EPC had not fully integrated Emergency Preparedness (EP) throughout the Project as required by PRC-PRO-EM-7647, *Emergency Preparedness Program Requirements* (CR-2010-1078).
- Deficiencies in training records relating to EP and Sludge Treatment Project (STP) Testing Coordinators (TC) were identified (CR-2010-1079).

- Deficiencies were identified in the implementation of the Project Execution Plan (PEP) process as required by PRC-PRO-PM-24889, *Project Initiation and Execution* (CR-2010-1080).
- A written, well defined and effectively implemented Hazardous Communications (HAZCOM) Program did not exist at the EPC Project as required by PRC-RD-SH-13299, *Hazard Communication*. (CR-2010-1081).
- Deficiencies were identified in the implementation of the Chemical Management and HAZCOM Programs at MASF (CR-2010-1082).
- Data from periodic safety inspections was not reviewed, tracked, and trended as required by PRC-RD-SH-7652 (CR-2010-1083).

Opportunities for Improvement

- EPC needs to develop programs and/or improve on the implementation and administrative maintenance for many of its existing programs (CR-2010-1085).
- EPC Project was not making the best available use of the CRRS process (CR-2010-1086).
- The EPC Project overall, had a fragmented Quality Program structure in place to support the requirements of CHPRC Quality Assurance Program (CR-2010-1088).
- EPC Occupational, Safety, and Health (OS&H) personnel were reluctant to utilize the Issues Management process to document and track to closure identified problems (CR-2010-1089).

CROSS-CUTTING ISSUE

Cross-Cutting Issues generally reflect potential deficiencies observed in more than one assessment area and represent a common theme throughout the report. Cross-cutting issues identify those few select programmatic issues considered most important and represent areas where improvement will reap the greatest benefit.

Program Maintenance

As a result of the weaknesses identified during the assessment, one cross-cutting issue was developed in the area of program maintenance. The EPC project had programs/processes in place that supported its current mission. Many of these programs were well-documented and maintained, with some being very effective. However, some of the programs reflected the status of a project recently restructured and in the process of going through a transition. As an example, the Emergency Preparedness and HAZCOM programs were not well implemented. Senior management at the project, and the assessment team endorse, the need to develop programs and/or improve on the implementation and administrative maintenance for many of its existing programs. While EPC routinely demonstrated the ability to perform work activities in a safe manner, failure to address this issue could limit its performance. This conclusion is supported by the following examples identified during the assessment (CR-2010-1085):

- A deficiency was identified that related to logkeeping practices, as required by PRC-PRO-OP-24382 (CR-2010-1077).

- EPC had not fully integrated Emergency Preparedness (EP) throughout the Project as required by PRC-PRO-EM-7647, *Emergency Preparedness Program Requirements* (CR-2010-1078).
- Deficiencies were identified in the implementation of the Project Execution Plan (PEP) process as required by PRC-PRO-PM-24889, *Project Initiation and Execution* (CR-2010-1080).
- A written, well defined and effectively implemented Hazardous Communications (HAZCOM) Program did not exist at the EPC Project as required by PRC-RD-SH-13299, *Hazard Communication.* (CR-2010-1081).
- Data from periodic safety inspections was not reviewed, tracked, and trended as required by PRC-RD-SH-7652 (CR-2010-1083).
- EPC Occupational, Safety, and Health (OS&H) personnel were reluctant to utilize the Issues Management process to document and track to closure identified problems (CR-2010-1089).

1.0 PURPOSE AND SCOPE

The purpose of this independent performance-based assessment was to evaluate EPC's implementation of programs, procedures, and policies as they related to conduct of work. This performance-based assessment focused on the adequacy, compliance, and in-field execution of work activities and processes that supported the project's mission.

The scope of the assessment included organizations, facilities, and activities within the Sludge Treatment, Construction, and all active projects. Some EPC interface activities with other CHPRC projects were included in the scope of the assessment. The assessment was a cross-cutting evaluation of project work activities. CHPRC programs, procedures, and policies provided the framework for assessment activities.

This assessment was conducted in accordance with PRC-PRO-QA-9662, *Independent Assessment Process*, Revision 1, and the associated assessment plan that described the overall assessment process, objectives, and criteria. The assessment methodology consisted of reviews of programs and procedures specific to: review of applicable project/facility procedures, program documents, and work planning documents; observation of meetings, work planning activities, and operations/construction evolutions; walk-downs/inspections of facility work areas; and interviews.

Performance objectives for this assessment consisted of verifying conformance to established and applicable requirements such as those associated with: Worker Safety and Health Plan, Environmental Management System, Quality Assurance, Training, and Emergency Management. In addition, the implementation of work control and conduct of operations to verify the effectiveness of the project's execution of work activities and feedback mechanisms were included as performance objectives for this assessment.

2.0 ASSESSMENT AREA EVALUATIONS

2.1 Management Systems

The EPC project management systems were functional with some programs very effective and some still reflecting the maturing status of a recently restructured organization with new leadership. Examples of effective management systems included the Weekly Senior Staff and Weekly Production meeting. These meetings were very effective in providing management status, relative information, and feedback related to expectations, changes, goals, and general philosophy of operations.

The EPC management team was very experienced and exhibited a high level of leadership. This was demonstrated through their in-field presence observing and monitoring work activities and by actively participating in the Plan-of-the -Day, Construction Forces Weekly Safety/Planning Meeting, and the Monthly Subcontractor Safety Meeting. Interviews with project personnel indicated that information was communicated fairly well up and down the organizational ladder. Also, communication/interface with other CHPRC projects (i.e. customers) was effective and performed on a routine basis. Field observation indicated that work teams were generally well informed about matters potentially impacting their activities. EPC personnel had an understanding of management's expectations and their performance objectives.

The EPC project had programs/processes in place that supported its current mission. Many of these programs were well-documented and maintained, with some being very effective. However, some of the programs reflected the status of a project recently restructured and in the process of going through a transition. As an example, the Emergency Preparedness and Chemical Management programs were not well implemented. Senior management at the project, and the assessment team endorse, the need to develop and/or improve on the implementation and administrative maintenance for many of its existing programs. While EPC routinely demonstrated the ability to perform work activities in a safe manner, failure to address this issue could limit its performance.

The management team at EPC had developed an internal (self) assessment process consistent with requirements contained in CHPRC procedures. Personnel were assigned to coordinate the development of assessment activities and schedules, assist in the performance of assessments, and evaluate and track assessment results. A selection of completed assessments performed over the last year was reviewed. Issues identified during assessments were included in the Condition Reporting and Resolution System (CRRS) for tracking and resolution. The STP had done a thoughtful job of identifying their annual assessment topics with a defined reason/basis for each of the scheduled activities.

2.2 Conduct of Operations

The MASF ConOps Applicability Matrix was sent to RL for approval on February 16, 2010. Based on the anticipated approval of the Matrix, MASF was moving ahead and was in the early stages of implementing the Matrix requirements during this assessment. Therefore, a determination of the effectiveness of implementation of Conduct of Operations was not made.

The MASF operations staff (MASF-Facilities Manager [FM] and STP-Operations Manager (OM) had taken over the MASF building in early fiscal year (FY) 2010. The organization structure identified three operations personnel, who operated day shift only. Additionally there were 15 personnel matrixed to the facility including two qualified Stationary Operating Engineers (SOE), an Industrial Safety/Industrial Hygiene professional, and 12 STP Testing organization personnel. The MASF-FM was responsible for the safe operation of the facility. The FM was also designated as the MASF Design Authority (DA); the facility work release authority (for the facility and STP Testing organization); the Controlling Organization Lockout/Tagout (LO/TO) Administrator and approval authority; and Field Work Supervisor (FWS). The FM was also responsible for occurrence/event notification and for maintaining the facility narrative logbook. As noted above, the MASF-FM responsibilities were broad and encompassed most major aspects of MASF "operations." The MASF operations had an additional FWS in training for the Shift Operations Manager (SOM) position. The STP Testing organization had two FWSs, with one being qualified as a SOM to backup the MASF-FM.

Based upon the submitted ConOps Applicability Matrix, all, except chapter 13, "Operations Aspects of Facility Chemistry and Unique Processes," were applicable. MASF operational status was maintained by the MASF-FM; shift turnovers were not typically required. Though Control Areas did not exist within MASF, the FM was readily accessible. Daily work, MASF maintenance and STP Testing activities, were addressed at the STP Testing Plan of the Day and resources were requested as needed. The SOE reported to the MASF-FM when starting rounds and, if needed, was available via cell phone. Configuration of operational systems was maintained by the MASF-FM through the use of procedures or technical work documents. The MASF-FM and SOE understood the LO/TO system. During field observation of the application of two Authorized Worker Locks, there were no noted issues. There were three active long-term Timely Orders; proof of required reading was maintained via email. There were no operator aids in use. Based upon an interview with the MASF-FM, the labeling of systems in use would be maintained, and those systems not in use would not be maintained.

The SOE Rounds tour was observed. The Rounds included touring the MASF structure, looking for water leaks and general cleanliness, inspecting fire extinguishers, and recording readings. The SOE was knowledgeable of the MASF facility and activities in progress. Discussion with and observation of the SOE indicated the individual was knowledgeable of Conduct of Operations principles and practices. Specifically, logkeeping was accurate and correct; the SOE knew the correct actions required in the event of Out-of-Specification readings; appropriate PPE (safety glasses with side shields, hard hat, and hearing protection) was worn as required by the Automated Job Hazard Analysis (AJHA) and site postings; reports by the SOE were proper for the operations taking place; the various procedure "use" types and when they were required was understood.

The facilities' response to an actual MASF Area High Static Pressure Alarm was observed. The FM acknowledged the alarm in the MASF Control Room and went to the Mechanical Equipment Room, room 203, acknowledged the alarm and verified the Supply and Return fans were running with proper indications. Following completion of the required immediate actions, the FM concluded the alarm was due to high winds and confirmed the alarm response procedure MA-32-1, *Response to MASF Area High/Low Static Pressure*, was followed by verifying completion of the immediate actions and reviewing the follow-up actions of the procedure. The static pressure

alarms were reset in accordance with the procedure and alarm response action was secured. The FM actions met procedure requirements.

Previously, the MASF organization had program assessments performed of the Logkeeping (EPC-STP-WSA-10038) and Required Reading (EPC-STP-WSA-0902). Both assessments identified issues within their respective program and Condition Reports (CRs) were generated. The MASF Narrative logbook and the SOE logs were reviewed. The following deficiency was identified that related to logkeeping practices, as required by PRC-PRO-OP-24382 (CR-2010-1077): Initial Conditions for the MASF were not documented. Based upon A21C-STP-ADM-0001, *STP Test Facility Administration*, Revision 2, Section 7.2, for MASF to be occupied, the ventilation system needs to be operating. The verification of facility occupancy requirements (i.e. ventilation system operation) should have been included in the morning narrative.

The Timely Orders Logbook and a LO/TO Logbook that included the log of Miscellaneous Tags were reviewed. The active Timely Orders were applicable to the STP Testing organization. Reading of Timely Orders was tracked on the STP Testing Manager's computer. All STP TC and STP Engineering Technicians (ET) were up to date with the Timely Orders. The LO/TO contained one active LO/TO (with two tags). The Timely Orders Logbook and Miscellaneous Tags Log were not well maintained. The Miscellaneous Tags Log contained one active tag with no documentation of the tag location. There was no evidence that periodic management review of these logbooks was performed (CR-2010-1073).

Throughout the facility information tags, system deactivation, and temporary labels were identified without appropriate documentation. The use of these tags and the conversion to the CHPRC Miscellaneous Tags was a known issue by the MASF-FM, but the action was not entered into CRRS.

Existing MASF procedures had not been updated to reflect the CHPRC contract transition. The MASF-FM recognized the need to revise existing procedures, but had not made an entry into CRRS to document the discrepancy. The MASF-FM, noted that when a procedure was required, e.g., during a maintenance activity, he would "red line" the old Fast Flux Test Facility (FFTF) procedure and incorporate it into a work package. Alarm response procedures, used to address a high static pressure alarm (MA-32-1, *Response to MASF Area High/Low Static Pressure*), remained in the FFTF format. Response to the upset condition was satisfactory, due in part to the responder being a very experienced FFTF individual, with a high level of understanding of the FFTF procedures and facility. Response by a less experienced individual may not have the same results.

2.3 Emergency Preparedness

EPC areas reviewed during this assessment consisted of 200W Construction Complex, various constructions sites, and the STP Test Facility Project contained in MASF. For those activities associated with providing construction services to other CHPRC Projects, personnel were indoctrinated into the project's facility-specific emergency preparedness programs for those specific activities. This was administered through various methods which included Health and Safety Plans, Facility Emergency and Hazard Information Checklist (FEHIC), Pre-jobs, and Facility Emergency Response Information Boards (FERIB).

EPC had not fully integrated EP throughout the Project, and a process was not in place to ensure requirements were effectively implemented to support its activities. Responsibilities to ensure that the CHPRC EP program was implemented within the EPC were not clear. This was contrary to the requirements contained in PRC-PRO-EM-7647, *Emergency Preparedness Program Requirements*. As a result, deficiencies were indentified in the area of maintenance of FERIBs, training of individual's responsibilities for execution of EP duties, and response to upset conditions. Specifically (CR-2010-1078):

- Subproject PEPs identified that PRC-PRO-EM-7647, *Emergency Preparedness Program Requirements*, would be implemented, but did not specify how the specific projects would implement EP. In addition, some subprojects did not have approved PEPs in place to specify EP implementation.

- A facility Response Plan (FRP) for MASF did not exist. The STP Test Facility Administration document required employees assigned to MASF (437) and 4713C to review the FRP and document the review on a FEHIC form. In May of 2009, MASF and 4713C were removed from the FFTF Complex Building Emergency Plan when MASF received a new mission as the STP Test Facility. Based on interviews with MASF Operations and the EP Coordinator, an FRP was not issued because the facility had received an interpretation from MSA Emergency Management that the facility type would be administrative, thus negating the need for an FRP. The interpretation was communicated through a series of emails documenting a phone communication that CHPRC Emergency Preparedness Manager had with MSA Emergency Management. PRC-PRO-EM-7647, *Emergency Preparedness Program Requirements*, required a Hazards Screening Checklist be completed for proposed work activities to record review of activities/chemicals that screen out and do not require further hazard survey. This checklist requires a documented summary of the screening results including brief statements regarding interpretation or assumptions used during the screening process. Documentation did not exist for screened out radiological/chemical hazards or for the interpretation that supported classifying MASF as an Administrative facility since being removed from FFTF Building Emergency Plan.

- The Environmental Restoration Disposal Facility (ERDF) Maintenance Facility Construction Project was conducted (approximately 67 days) without project personnel knowing the proper response to events or understanding the hazards imposed by nearby facilities/activities.

- Trailers used for administrative purposes, located at Unsecured Core and ERDF Maintenance Facility construction sites, did not contain FERIBs. These trailers were the only locations available for individuals to obtain information for EP actions.

- Information on some FERIBs did not contain up to date information related to Building Wardens (BW), EP Coordinators, or Site Emergency Numbers (373-0911).

- Thirteen of 14 individuals (Staging Area Managers [SAM], Personnel Accountability Aides [PAA], BWs) identified on EPC FERIBs did not have the required EP training.

- The individual identified as the EP Coordinator on some FERIBs had not completed all required training.

2.4 Environmental Quality Assurance (EQA)/Environmental Management System (EMS)

Based on the review of completed Data Quality Objectives (DQO), Statements of Work (SOWs), Sampling Packages, training, and assessments, the EPC project was in full compliance with EQA Program Plan requirements. The EQA review focused on STP since the organization had the most activities within EPC Project for performing environmental work. STP work activities included developing DQOs, performing sampling activities, and developing plans for upcoming sampling. No sampling activities were in process during this assessment.

The STP Test Facility required active building ventilation for occupancy. MASF/STP was in compliance with all requirements of Permit AIR 08-1021, NOC_ID 646 for Emission Units ID 399 and ID 385.

EMS is the basis for continual improvement of the EPC's overall environmental performance. The reason is the EMS is an over-arching program that includes a high-level view of all activities included in the scope of the assessment. The EPC was following the basic format of plan-do-check-act in meeting the five core elements of EMS. Personnel interviewed expressed a positive general awareness of EMS. The Integrated Safety Management System (ISMS)/EMS Pocket Guide (the flippy book) was identified by the majority of EPC personnel as their primary reference for ISMS/EMS.

Environmental objectives and targets were well defined and continually reviewed to ensure that objectives and targets are completed by their designated completion date. While the EMS program within the EPC was found to be effective, it could be strengthened in the areas of HAZCOM and Emergency Management.

2.5 Training

Based on Observations of work activities, interviews, and review of training records, the training program at the EPC Project was established and implemented. The EPC Project had identified issues related to training and qualification records of personnel and had submitted CRs to address the issues. With the exceptions of personnel assigned to EPC Emergency Preparedness (EP) duties and STP Test Coordinators, training records of personnel observed performing work activities during the assessment indicated that training was being completed and tracked as required.

Qualifications for STP ETs and STP TC, Required Reading were reviewed. A21C-STP-ADM-0001, *STP Test Facility Administration*, Revision 2, identified a listing of Required Reading as part of the qualifications for STP ET and STP TC. Two STP TCs were missing documentation of one document, PRC-PRO-EN-286, *Testing of Equipment and Systems*. Further review identified the document was not included on the STP TC's Required Reading list. When brought to the attention of the STP Testing Manager, the error was corrected and Required Reading notifications were sent to all STP TCs. The STP Testing Manager notified the remaining STP engineering management team of the discrepancy, to catch the remaining STP TCs (CR-2010-1079).

During the review of training records for individuals performing EP duties, several deficiencies in training were identified. Thirteen of 14 individuals consisting of SAMs, PAAs, and BW, did not complete the required EP training. An individual identified as an EP Coordinator had not completed all the required training. (CR-2010-1079)

2.6 Issues Management/Occurrence Reporting

The Issues Management Program at the EPC Project was well implemented and project personnel were familiar with the CRRS process. Issues identified in CRRS related to EPC were primarily the result of the Project's self assessment of activities. There was a strong awareness by management of deficiencies currently in the system and issues in the field. Information was routinely entered into the system when potential issues were identified. Senior management was involved in the process for reviewing the information and following up on open/delinquent actions on a weekly basis.

It was identified during the assessment that the Project was not making the best available use of the CRRS process (CR-2010-1086). The Project had identified other weaknesses but had not included these problems in the CRRS to ensure credit for self identification and tracking to closure. This was noted in the area of Construction Execution Safety and Health (S&H) which had generated a spread sheet of problems to be addressed including lack of a tracking and trending process for S&H inspections as required by PRC-RD-SH-7652, *Safety and Health Inspections* and subcontractor S&H performance review. During activity at DH/DX a Stop Work occurred related to activities involved in cementing PVC piping. This issue could have been included in CRRS to document actions to address and to track and trend. Additionally, the fact that MASF procedures had not been updated to reflect transition to CHPRC and existing facility system information tags were not updated in accordance with the CHPRC Miscellaneous Tags program were known issues but had not been entered in to the CRRS.

The Occurrence Reporting process implemented at the EPC project was adequate. Personnel responsible for notification and report development were trained and qualified. Reports recently generated were completed within the required time period. Management notifications to RL and closure of occurrence reporting documentation were routinely executed in accordance with procedure PRC-PRO-EM-060. Critiques and fact-finding activities when required were conducted in a timely manner. In addition, during the Stop Work actions which occurred during the assessment activity, EPC made notification of the events to their customers and clients although not required by procedure. Teams that were affected by the Stop Work were actively involved in the development of corrective action to address the issue.

2.7 Maintenance/Work Planning and Control

The CHPRC Maintenance Implementation Plan (MIP) was recently submitted to RL for approval (March 4, 2010) incorporating the EPC project. CHPRC has determined that projects, nuclear or non-nuclear, will be included in the MIP. The Maintenance Management Program within EPC was being implemented using a graded approach. Discussions with the STPOM indicated the proposed MIP was in the early stages of implementation during this assessment.

Maintenance of MASF was scheduled by the MASF-FM and performed by the Deactivation and Decommissioning (D&D) craft. The three person staff were able to operate and maintain the

MASF systems necessary to support the STP Testing organization. The following positive attributes were identified: the periodic verification, by the MASF-FM, of training and qualifications of matrixed craft, performed as an over-check of the D&D FWS supporting work activities; and the Maintenance and Test Equipment (M&TE) contained within the MASF/STP organization was appropriately/properly segregated and no noted out of calibration equipment was identified.

Maintenance work packages at MASF were developed by the MASF-FM and performed by D&D craft. The work packages which incorporated existing FFTF maintenance procedures were being submitted to the D&D Maintenance organization for review and scheduling. Once scheduled, the MASF-FM, also the FWS, released the work and, if required, supported the SOE in hanging any the Controlling Organization LO/TO. During the assessment, the only active maintenance performed was 4A-09-05231/P, *MASF Vert. Lift Doors Insp*. A LO/TO was not required and work was performed without incident.

Based upon observations, interviews, and document reviews, the MASF staff was familiar with the maintenance program. They were actively involved in implementing the submitted MIP, monitoring, scheduling and getting maintenance completed on their equipment. Maintenance was performed by trained and qualified D&D project-craft and was overseen by qualified FWS. Periodically, the MASF-FM verified the training currency of the craft performing work, especially when special qualifications, e.g., fall protection, were required. The MASF-FM developed work packages in accordance with the Job Control System (JCS). The packages were provided to the D&D Maintenance for review, planning, and scheduling by both the D&D maintenance staff and the applicable craft. Work packages included post-maintenance testing.

Facility tours were routinely performed and periodically documented (using Management Observation Plan Checklists or Work Site Assessments) by the MASF-FM and STP-OM that addressed cleanliness and facility condition. Additionally, assessment activities were performed by the EPC Vice President and other EPC management.

Through interviews, it was determined that the MASF staff, MASF-FM, and STP-OM, had taken over the MASF building in early July 2009. The MASF maintenance history was lacking due in part to FFTF's decision to eliminate or reduce maintenance activities in MASF because the facility was no longer needed. The MASF staff was in the process of updating drawings to essential status and implementing the maintenance program. Outside of utilities (water, sewer, electric), the HVAC system was the only essential system required for occupancy (per A21C-STP-ADM-0001).

At the time of the assessment, the MASF-FM provided the input to the JCS to track material history. Based upon the presently defined uses of the facility, there was a proper balance between Preventive, Corrective and Seasonal Facility Preservation maintenance activities. The MASF-FM analyzed completed preventive maintenance packages to determine if there were additional problems. If a facility modification was required to support the STP Testing organization, the Facility Modification Process would be used. The MASF-FM had a checklist for "Cold Weather Checks," which identified the actions to take in preparation for cold weather, and these were consistent with PRC-PRO-MN-472, *Cold Weather Protection*, Revision 0/Change 2. Additionally, the MASF-DA procured material necessary for maintenance activities. Procurements were usually general service. If a quality level component was required,

the receiving department (Acquisition Verification Service) would perform the receipt inspection. The MASF-DA would generate the inspection criteria document for the receiving organization.

M&TE retained at the MASF was used by the STP Testing organization only. Calibration and receipt was managed by the procurement specialist. A cabinet was provided for calibrated equipment, and another cabinet was available for out of calibration or due for calibration equipment. The calibrated equipment cabinet was inspected and all equipment was in calibration. The D&D craft performing maintenance provide their own tools, equipment, and M&TE.

During tours of the facility with the SOE, it was determined that the facility and active equipment were maintained in a satisfactory condition. Based upon an interview with the MASF-FM, systems that were deactivated were not maintained. Most of these deactivated systems were tagged with "System Deactivated" tags, though the "System Deactivated" tags were not documented in a log (CR-2010-1073).

The EPC Construction Execution project had developed and was implementing a more rigorous approach to the planning, authorization, and execution of construction work activities. The project was using the JCS and was developing work packages for the performance of both green field construction activities and facility modification construction work. The use of the JCS process allowed EPC to communicate and interface more effectively with the customer for Make/Self-Perform work activities. Additionally, using the JCS style work instruction to outline/sequence major subcontractor work activities allowed the Construction Manager to more definitively define the scopes of work to be released by the daily work release form. Discussions with EPC construction force supervisors and subcontractor in-field supervisors indicated a good understanding of the work release process. Reviews of activities in the field at DH/DX, the Unsecured Core, and MASF noted that the work release documentation and activities being performed were consistent.

The EPC/Soil and Groundwater Remediation Project interface meeting to discuss GW-10-00372/K ZP-1 Chiller/Heater Upgrade work package was observed. There was good dialogue between participants at the meeting. Concerns related to reducing down time during equipment tie in, as well as working under power lines and the height of various trucks and equipment accessing the area, were addressed for inclusion in the work instructions and Job Hazard Analysis. Lessons learned from previous work activities related to electrically powered equipment final hook up were also reviewed for incorporation into the work sequence.

Pre-job briefings were observed in all the work areas and were generally good. They covered the necessary information related to the released work activities, hazards, and controls. Pre-Jobs performed by Constructions Services communicated detailed EP information specific to the work at outdoor locations. This included a transportation contingency for those individuals who were performing work at those locations. The FWS had ensured teamsters with adequate transportation were present on the sites to relocate individuals to the designated take cover location which had the necessary habitability attributes.

Personnel involved in the development of work documentation and in execution of the activities appeared to have good understanding of the defined process, spoke from and utilized the

CHPRC/EPC Work Flow Chart to help describe the present process and planned modifications/enhancements towards which the project was working.

Two STP Testing work documents were reviewed (4A-09-04717, *Fabrication of Test Equipment in MASF*, and 4A-10-00822, *K Basin Operator Training/Demonstration*). Both documents included reference to Worksite Hazard Analysis and Craft Specific Hazard Analysis and Position Specific Hazard Analysis. No issues were identified within the packages, and the work was within the scope of the work packages.

2.8 Quality Assurance

The EPC Quality Assurance (QA) Organization was in the process of forming a QA Department management structure which would meet stand alone criteria internal to the project. A review of the EPC Project Quality Program confirmed that QA responsibilities overall, had been performed in a compliant manner. The compliant quality performance, in light of a fragmented QA management structure, was accomplished mainly due to the experience, knowledge, and professional manner of the managers and workers performing the planning and day to day activities. A review of Nonconformance Reports, Condition Reports, Assessment Reports, and personnel training and qualification were found acceptable. The EPC material/equipment lay down areas were found to be organized and clean with the material being protected in accordance with PRC-PRAC-CN-430370, Shipping, Handling, Storage and Installation Cleanliness of Materials, Equipment, and Assemblies. The STP QA Management structure was in place and functional, insuring Quality Assurance Program (QAP) compliance. As an indication of performance due to that structure, the STP assessment, design review, and quality oversight process were performing at a high level.

The EPC project overall, had a fragmented Quality Program structure in place to support the requirements of the CHPRC QAP. The management chain and reporting relationship for QA personnel was not complete or functional. With the exception of STP, EPC subprojects had difficulty filling this void and acquiring the necessary QA and Quality Control (QC) personnel to support the requirements of the projects as required by individual SOWs. As a result, the following conditions existed (CR-2010-1088).

- The roles and responsibilities contained within PRC-MP-SH-40185, *Safety, Health, Security & Quality Integrated Environment, Safety and Health Management Roles, Responsibilities and Functions*, for the Quality Systems Manager and the QA Engineer were not being fully met.
- Quality Control Inspectors were brought on board with direct responsibility to the Area Construction Manager and no EPC quality program personnel interface.
- CHPRC QA Programs were unable to provide matrixed staff to the EPC subprojects as required by PRC-PRO-PM-24889, *Project Initiation and Execution*. Therefore, the subprojects borrowed the use of Customer QA/QC personnel to perform activities required by the SOW while they were still responsible for performing customer oversight activities. With a QA Engineer holding QC Inspector certifications, this process potentially could lead to quality personnel approving their own work.

During the review of documents, subprojects PEP were reviewed to determine compliance to PRC-PRO-PM-24889. This review identified deficiencies in the implementation of the PEP process (CR-2010-1080):

- PEPs did not exist for the Modutank, WESF Roof Repair, T-Plant, and the 100K Pump & Treat Projects. PEPs were required for all projects as defined in PRC-PRO-PM-24889, Section 5.8.

- 100K Utilities Upgrade Project PEP was in continuous revision without issuance of a controlled document. This practice was out of compliance with PRC-PRO-PM-25000, *Project Execution Plans*, Rev 1, Chg 0.

- The 200 West Area Pump &Treat (P&T) System PEP, HNF-40104, Rev. 0, was out of date. The P&T document has been in this condition since February 2009. The PEP was to be updated as changes occurred and at a minimum prior to the start of each phase of project execution as required by PRO-PM-24889, Project, Section 5.8 and PRC-PRO-PM-25000, Section 3.2.

2.9 Chemical Management

A written, well defined and effectively implemented HAZCOM Program did not exist at the EPC project (CR-2010-1081). Roles and responsibilities for chemical management within the project were neither defined nor documented. This resulted in inconsistent implementation of the Chemical Management Process.

Chemical management was implemented at Construction Services. An individual performed chemical inventory, reviewed procurement documents, and maintained chemical storage locations. The individual was knowledgeable and communicated well with the personnel performing work with chemicals. This method for implementation was solely based on the individual's experience and level of knowledge. The process was 'expert based' and not defined/documented as part of a HAZCOM Program. Changes in personnel could negatively impact the implementation process.

Across the EPC project, subcontractor submittal packages were not consistently reviewed for completeness and the presence of Hanford Material Safety Data Sheet (MSDS) numbers for all chemical products brought onsite. At the Unsecured Core Area, the individual delegated to verify subcontractor chemical inventory did not demonstrate adequate knowledge of MSDS requirements. In addition, the individual did not require a subcontractor to update their chemical inventory submittal before bringing additional chemicals onsite. During the assessment, the team identified a trailer at the Unsecured Core Area containing chemicals not listed on the inventory submittal.

At MASF/STP, a project-specific HAZCOM Program was contained within administrative document A21C-STP-ADM-0001, *STP Test Facility Administration*, Rev 2. The document did not contain all program elements required by PRC-RD-SH-13299, *Hazard Communication*. This issue was identified by EPC in November 2009 and entered into the CRRS. In addition to the items identified in the CR, the project should consider including in the written program a

provision for an individual assigned to maintain the chemical inventory in CITS and perform routine HAZCOM Training. The Chemical Management process at MASF was implemented. Deficiencies were identified in field implementation of Chemical Management and HAZCOM requirements described in PRC-RD-SH-13299 and PRC-PRO-SH-10468, *Chemical Management Process* (CR-2010-1082):

- The MASF POC responsible for secondary labeling did not demonstrate adequate knowledge of the hazard analysis requirements when hazard rating information is not available.

- Chemical storage locations did not have a posted chemical inventory (i.e. 437 High Bay, 4732C).

- MASF FEHIC Training did not include specific information on retrieving MSDSs and did not include all areas where chemicals are stored and used.

2.10 Occupational Safety and Health

The EPC OS&H organization was undergoing significant changes. A full time safety professional was recently put in place to support MASF following facility transition in August 2009, and the Construction Safety & Health group increased staff with the addition of two full time Industrial Hygiene and two additional Industrial Safety professionals. Based on discussions with team members, the lack of adequate staffing had hampered their ability to effectively meet targets and objectives and address weaknesses in their OS&H process implementation.

EPC Construction Execution sub-project OS&H had identified issues, problems, and opportunities for improvement, but personnel indicated a reluctance to utilize the Issues Management process to document and track to closure identified problems. This hesitancy limits the EPC OS&H organization's opportunity to track and trend issues, take credit for self identification, and push the issue through to resolution. (CR-2010-1089)

Field walk-downs were conducted of on-going construction activities at the Unsecured Core Area, DH/DX P&T, Road Crossing pipe installations in 200W, and MASF.

The Un-Secured Core Area construction activities and adherence to OS&H practices were observed. In general the site has been well maintained with construction debris removed from the work zone and staged for disposal. Observations of activities requiring the use of fall protection indicated that personnel were adhering to the required practices defined in the project Job Safety Analysis (JSA) and fall protection plan. The performance of a scored health and safety inspection was observed, and it was appropriately critical of the site activities and issues. Problems/issues were discussed with the contractor site supervisor, the EPC Construction Manager (CM) representative, and the EPC OS&H representative to clearly define the problems identified and expectations for correction.

The work locations at the DH/DX P&T including the M-1 and M-2 transfer stations were walked down. The sites were well policed during activities keeping floor clutter and obstructions to a minimum. The areas were cleaned and picked up at the end of shift and well stowed. Personnel observed were wearing the personal protective equipment (PPE) required by the AJHA and were deliberate in the execution of their work activities. During work to cement PVC at the M2 transfer station, a Stop Work was initiated by the Pipefitter performing the work. The Stop Work concern related to potential exposure to chemical constituents of the plastic cement primer product being used. The Independent Assessment team accompanied the EPC Industrial Hygienist (IH), Industrial Safety Representative, and Construction Superintendent during observation and direct instrument sampling of PVC pipe cementing activities. The IH did an excellent job of explaining the purpose of the activities, how they would be conducted, the instrumentation and its limitations, and in obtaining information from the work team on how the work was done, configuration of the work areas, ventilation sources and environmental conditions. The Industrial Safety representative took photographs of all activities and locations documenting the sampling and work area aspects. The Construction Services work team members were cooperative, provided pertinent information and were receptive to suggestions regarding process improvements designed to limit any exposure. Following additional area and personnel sampling activities to evaluate implemented control measures, the Stop Work was lifted with the concurrence of the involved workers.

The Road Crossing activities in 200W were well controlled. Personnel were wearing the required PPE and access control was being maintained to prevent unauthorized access to the worksite. Discussions with work team members indicated a good understanding of the work, hazards, controls, and potential for previously unknown hazards to be uncovered during excavation and what actions would be taken.

The EPC Construction OS&H team has been conducting periodic safety inspections of their various projects. However, the data from the inspections has not been effectively reviewed and then tracked and trended to allow for the identification of over-arching problems or specific weakness requiring action as required by PRC-RD-SH-7652 (CR-2010-1083). Additionally, the team identified weaknesses in their implementation of their assessments of subcontractor safety performance prior to the commencement of on-site work activities. This process was being reworked and reinvigorated to help identify subcontractor with potential safety performance issues and allow for implementation of effective mitigative actions to help assure satisfactory and safe on-site work execution. EPC construction safety and management met regularly with the various construction contractor representatives to discuss safety related issues, policy and process changes and received input from the contractors on issues of interest. The forum provided a good opportunity to dialogue and efficiently communicate/share information and concerns.

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ATTACHMENT 1 - LIST OF RECORDS REVIEWED

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- 100-DX Engineering Design Support SOW, Rev 2, December 2009
- 100-DX Ion Exchange Skids and Tote Sump SOW, Rev 0, September 8, 2009
- 2009-437, Fire Permit
- 2009-460, Fire Permit
- 2010 MASF Assessment Topic and Performer list
- 4A-09-04717, *Fabrication of Test Equipment in MASF*
- 4A-09-05231/P, *MASF Vert. Lift Doors Insp.*
- 4A-10-00822, *K Basin Operator Training/Demonstration*
- A21C-STP-ADM-0001 Rev. 2, *STP Test Facility Administration*
- A21C-STP-ADM-0001, Rev 2, Section 5.5, *MASF HAZARD COMMUNTICATION PROGRAM*
- ABCASH Total Alpha and Beta Sample Data Log
- Active Inspection Personnel Record for March 2010
- AJHA ID: EPC -144, *DX Construction*
- AJHA ID: EPC-101 R. 1, *200W P&T Road Crossings*
- AJHA ID: EPC-103, *DX Expansion Road Crossings*
- AJHA ID: EPC-108 R.0, *200W Area Construction Facility*
- AJHA ID: EPC-135 R.0, *Well 299-W15-225 Tie-in to 200ZP-1/Disconnect Extraction Well 299-W15-44 from the 200-ZP-1*
- AJHA ID: EPC-596 R.0, *100KX Pump & Treat Expansion ATP*
- Characterization Data Package for Containerized Sludge Samples Collected from Engineered Containers SCS-CON-220, -240, -250, and -260(December 2009)
- CHPRC - Construction/Daily Pre-Job Briefing & Sign-In Sheet (Draft)
- CHPRC – Construction/Pre-Job Preparation Form & Instruction Sheet (Draft)
- CHPRC General Industrial Safety Hazards Analysis, Revision 0
- CHPRC letter to DOE-RL, CHPRC-1000053, *Submittal of the Maintenance and Storage Facility Conduct of Operations Applicability Matrix*, February 16, 2010
- CHPRC letter to DOE-RL, CHPRC-1000158, *CHPRC Maintenance Implementation Plan Update*, March 04, 2010
- CHPRC Work Release for Construction/Service Organizations (A-6004-967)
- CHPRC-00189, *CH2M HILL Plateau Remediation Company Quality Assurance Program Plan*, Appendix E, *"Sludge Treatment Project Specific Quality Assurance Requirements"*
- CHPRC-00189, *CH2M HILL Plateau Remediation Company Quality Assurance Program Plan*, Appendix I, *"National Emission Standard for Hazardous Air Pollutants Quality Assurance Project Plan"*
- CHPRC-00232, *DX/HR3 Pump-and-Treat Expansion Project Execution Plan*, Revision 0
- Contract 36578, Task Release 16
- EAN-3960, Excavation Permit
- EAN-3960, Excavation Permit for Road Crossing #21
- ELAB Project CITS Report Dated 3/4/10
- EM-RL—CPRC-GENLAREAS-2009-0001, *Discovery of Suspect Counterfeit bolts on "Genie Lift"*

- EM-RL—CPRC-GENLAREAS-2009-0002, *Identification of suspect/counterfeit items at MASF Facility*
- EM-RL—CPRC-GENLAREAS-2009-0004, *Identification of suspect/counterfeit items during annual hoisting and rigging surveillance*
- EM-RL—CPRC-GENLAREAS-2009-0005, *Suspect/counterfeit shackles discovered (ARRA)*
- EM-RL—CPRC-GENLAREAS-2009-0007, *Recurring event criteria met regarding vehicle/contact incidents*
- EM-RL—CPRC-GENLAREAS-2009-003, *Fire at 200W Construction Shop Mobile Office (MO) 956*
- EM-RL—CPRC-GENLAREAS-2010-0002, *Ecology block inadvertently pushed off trailer bed while loading (ARRA)*
- EM-RL—CPRC-GENLAREAS-2010-0004, *Discovery of equipment left in an unsafe configuration (ARRA)*
- Engineering Technician Specific Job Hazard Analysis, Revision 1B
- EPC Condition Report from 9/1/2009-3/1/2010
- EPC Plan of the Week for 3/11/2010
- EPC Work Site Assessments
- EPC-PM-WSA-10074, *Review of ITEM Training Reports for EPC Personnel* (9/28/2009-10/28/2009)
- EPC-PM-WSA-10076, *Implementation of ISMS in MASF Testing and Maintenance Work Activities*
- EPC-STP-WSA-09028, Emergency Management Program Implementation
- Facility Manager's Logbook; HNF-N-649-1; Dated 10/07/2009 to present
- FGG/FFS 200 West 2010 Safety Improvement Plan dated 2/24/2010
- Form S-NW-103, Construction Supervisor Safety Inspection Checklist
- Form S-NW-338 (Draft), Employee Safety and Health Orientation
- Fowler Construction Chemical Management Statement of Work Submittal for Unsecured Core Area
- HNF-36985, *Data Quality Objectives for Sampling and Analysis of K Basin Sludge*
- JSA, *KW Basin Mock up at MASF, Task Order/Contract 36537 Release 02*
- KBC-40467, Quality *Assurance Project Plan/Sampling and Analysis Plan for Containerized KW Settler Sludge*
- MA-32-1, Response to MASF Area High/Low Static Pressure
- Management Observation Program Assessments
- MASF FEHIC
- Monthly Inspection of Sealed Fire Protection Valve
- NCR-09-EPC-001, Rev 0-1
- NCR-09-STP-033 (5/28/2009)
- NCR-09-STP-034(2/12/2010)
- NCR-09-STP-035 (3/2/2010)
- NCR-10-EPC-002, Rev 0-1
- NCR-10-STP-001 (1/26/2010)

- Objectives and Targets 10-EMS-EPC0B1-T1, *Perform Operational Assessments on New Construction Support Facilities*
- Objectives and Targets 10-EMS-EPC0B1-T2, *Assess the Design and Construction of 200 West Pump & Treat Facility*
- Objectives and Targets 10-EMS-EPC0B1-T3, *Standardize Design of Pump and Treat Facilities with Goal of Reducing Construction Costs*
- OSHA Form 300A, YR 2009 Injury Summary
- Permit AIR 08-1021, NOC_ID 646: Emission Units ID 399 and ID 385
- PRC-MP-CN-28049, *Construction Procedure Manual*
- PRC-PRAC-CN-30370, *Shipping, Handling, Storage and Installation Cleanliness of Materials, Equipment, and Assemblies,* Rev 0, Chg 1
- PRC-PRO-AC-123, *Requesting Materials and Services*, Attachment 5
- PRC-PRO-AC-192, *Buyer's Technical Representative Assignment and Duties*
- PRC-PRO-CN-14990, *Construction Management*
- PRC-PRO-PM-24889, *Project Initiation and Execution*
- PRC-PRO-SH-40078, *Contractor Safety Processes*
- Pre-Job Briefing Checklist – *200W P&T Road Crossing & HDPE*
- Pre-Job Briefing Checklist - *ZP1 Well Replacement*
- Preselected Subcontractors List
- Process Sewer Data Sheet; 02/01/2010 through 02/28/2010
- QAE Document Submittal Status March 2010
- QAM/QAE Qualification Card & QAE Core Training List 12/01/2009
- QA-STP-SURV-10-002, *Certifications; ITEM; Qualifications; Equivalencies and Waivers*
- Required Reading Records for STP Engineering Technicians (2)
- Required Reading Records for STP Test Coordinators (2)
- SGW-40243, *Functional Design Criteria for the 100-DX Pump*, Rev. 3
- Sludge Treatment Project – December Assessment Summary (2009)
- Sludge Treatment Project - January Assessment Summary (2010)
- SOW for Modutank Project
- SOW, *Construction of STP Testing Mockup of KW-Basins at MASF*
- Stationary Operating Engineer Logs: 01/18/2010, 02/01/2010, 02/08/2010, 02/22/2010, 03/01/2010
- STP Assessment Summary 12/09-02/2010
- STP FY10 Assessment Plan (Sept. 1, 2009)
- STP Project Document PRC-STP-00176
- STP Testing Calibration logbook
- STP Work Package 4A-10-00836/S
- Task Charge Authorization (TCA) Process Updates
- Technical Work Document - CHPRC -30950, *200W P&T Road Crossing/Excavation #21*
- Technical Work Document – CHPRC-00291 R1, *200W P&T Road Crossings & HDPE*
- Technical Work Document - GW -09-07676, *ZPI Well Replacement*
- Technical Work Document – GW-09-05919/M, *100KX Pump & Treat Expansion ATP*

- Technical Work Document - GW-09-06351, *DX Pump and Treat Construction*
- Technical Work Document – SC-100105-001, *Unsecured Core Area Construction*
- Technical Work Document - GW-09-04559, *ATP on Phase 2 Well Additions*
- Test Coordinator Specific Job Hazard Analysis, Revision 1
- Test Instruction, *K West Basin Sample Receipt and Preparation of Consolidated Core Composites for SCS-CON-220-A1 and SCS-CON-220-B3*
- Training Activity Sheets
- Training Records (ITEM)
- Weekly Inspection of Sealed Fire Protection Valve; 03/01/2010
- Work Instruction – *Cask Decontamination and Maintenance Facility (CDMF) Operation to Inventory* (DRAFT)
- Work Package CHPRC-00291-R1, Road Trench
- Work Package, SC-100105-001, Unsecured Core
- Y-104 Rev. 18, Radiological Work Permit for CDMF Operations

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ATTACHMENT 2 – PERSONNEL INTERVIEWED

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- Buyer's Technical Representative (3)
- CHPRC Emergency Management Manager
- CHPRC Emergency Preparedness Coordinator (3)
- CHPRC Performance Assurance Director
- CHPRC QA Program Manager
- Construction Manager (3)
- Construction Superintendent
- Deputy Project Manager - 200 West Pump & Treat
- Director - EPC Construction Management
- ECO
- EPC Area Construction Manager
- EPC Construction Execution Director
- EPC Construction Services Facility Chemical Custodian
- EPC Construction Services Industrial Hygiene Lead
- EPC Construction Services Industrial Hygienists (2)
- EPC EMS POC
- EPC ESHQ Director
- EPC QA Manager
- EPC Radiological Engineer
- EPC Regulatory Services & Reporting POC
- EPC Safety Manager
- EPC Work Planner
- Field Work Supervisor (10)
- Laborer Construction Forces (Road Cut)
- MASF Chemical Management POC
- MASF Facility Manager
- MASF Material Coordinator
- MSA Emergency Preparedness Coordinator
- Oversight Support Staff
- PC/CM Program Support
- Procurement Support Staff
- Project Manager - 200 West Pump & Treat
- Project Manager – DX/HX
- Project Manager – ERDF Maintenance Facility
- Project Manager – Fuels Management Project
- Project Manager - K Area
- Project Manager - Modutanks
- Project Manager - Sludge Treatment
- QC Inspector
- Quality Assurance Engineer (3)
- Quality Assurance Engineer (9)
- Safety Reps, IS and IH Professionals (7)

- STP Administrative Support
- STP Characterization POC (3)
- STP ESH&Q Manager
- STP Operations and KBC Interface Manager
- STP QA Manager
- STP Sampling & Characterization Manager
- STP Test Coordinator
- STP Testing Interface
- STP Testing Manager
- STP Testing Procurement and Planning Coordinator
- Vice-President EPC Project
- Work Team Members (BU) (10)

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ATTACHMENT 3 – EVOLUTIONS OBSERVED

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- 100 Area Monthly Safety Meeting
- 100-K Plan of the Day
- 100-KX Pump and Treat ATP Activities (include 3 AWLs)
- 200 West P&T Road Crossing/Excavation Activities
- Assembly of inflow/outflow piping for DH/DX P&T
- Daily STP Interface Meeting
- Daily STP Interface Meeting
- EPC Plan of the Week
- EPC Subcontractor Safety Meeting
- EPC Weekly Production Meeting
- EPC Weekly Staff Meeting
- FFS Plan of the Week/Safety Meeting
- Follow-up Actions for DH/DX P&T "STOP WORK"
- Lock-Out Tagout Execution (3)
- Maintenance Pre-job and walk-down
- MASF Area High Static Pressure Alarm
- MASF Maintenance Pre-job Briefing and Job-Site Walk-Down
- MASF SOE Rounds
- MASF/STP Daily POD
- Monthly Learning Opportunity Session
- Monthly Subcontractor Safety Meeting
- Pre-Job for 200 West P&T Road Crossing/Excavation Activities
- Pre-Job for ZP-1 Well Replacement Construction Activities
- Scored Health and Safety Inspection
- STP Equipment Setup
- STP Test Setup
- Un-Secured Core Area Construction Activities
- Unsecured Core Area Foundation Build and Roof Install
- Various Construction Activities at DH/DX P&T
- Weekly EPC Safety Meeting with Construction Forces
- Work Activities Requiring the Use of Fall Protection
- ZP-1 Bonding Pre-job Briefing

EXHIBIT 52

CHPRC CONDITION REPORT FORM

Status: Closed CR NUMBER:CR-2010-1080

Issue Identification and Processing

Initiator:	Initiating Document:	Date Identified:
Harder, Bonnie S	CHPRC-PO-IA-10-02	4/13/2010

Title of Issue:

Deficiencies were identified in the implementation of the Project Execution Plan (PEP) process as required by PRC-PRO-PM-24889, Project Initiation and Execution.

Description of Issue:

During the review of documents, subprojects PEP were reviewed to determine compliance to PRC-PRO-PM-24889. This review identified deficiencies in the implementation of the PEP process:

â€¢PEPs did not exist for the Modutank, WESF Roof Repair, T-Plant, and the 100K Pump & Treat Projects. PEPs were required for all projects as defined in PRC-PRO-PM-24889, Section 5.8.

â€¢100K Utilities Upgrade Project PEP was in continuous revision without issuance of a controlled document. This practice was out of compliance with PRC-PRO-PM-25000, Project Execution Plans, Rev 1, Chg 0.

â€¢The 200 West Area Pump &Treat (P&T) System PEP, HNF-40104, Rev. 0, was out of date. The P&T document has been in this condition since February 2009. The PEP was to be updated as changes occurred and at a minimum prior to the start of each phase of project execution as required by PRO-PM-24889, Project, Section 5.8 and PRC-PRO-PM-25000, Section 3.2.

Requirements Not Met: (Orders, Requirements, Procedures)	Responsible Project/Program:
PRC-PRO-PM-24889	ENGRG PROJECTS & CONSTRUCTION
Date Submitted: 4/14/2010	**Other Related Documents:**

Immediate Action(s) Taken:

N/A

Recommended Corrective Actions:

Initiator Comments:

POC Dan Kimball

Associated Files

100K-Infrastructure_PEP_Approvals.pdf
32400-QPA-2010-013CHPRC-PO-IA-10-02AssessmentReportSigned2.pdf
ClosureCR-2010-1080.pdf
CR-2010-1080-CA3-EXTENSION.htm
EPC-40524_rev001_100K-Infrastructure-Project_PEP_complete.docx

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure

Significance Level:	Date Submitted to Responsible Manager:	Date CAP was approved by Responsible Manager/Delegate:
Track Until Fixed	4/15/2010 - Kimball, Dan	

☐ ORPS ☐ Compliance Determination ☐ NTS

Significant Level Justification:

This condition is screened as a Track Until Fixed (TUF).

The stated condition documents a non compliance with the requirements of PRC-PRO-PM-24889. The CR does not document where the subject condition has resulted in an adverse effect upon the project. However, actions will need to be taken to correct the documented deficiencies. The screening level as a TUF is assigned to this CR which will require that a cause be identified and documented. This CR will also document the actions taken to address the subject condition.

PLH

Assigned To:	Date Assigned:
Kristofzski, John G	4/29/2010

Extent of Conditions:	
Causal Analysis Method Used: Apparent Cause Analysis	**Analysis Completion Date:** 5/10/2010
Analysis Results:	
Trend Codes: MS03 - Project Management	
Cause Codes: A4B1C01 - Management policy guidance/expectations not well-defined, understood or enforced	
PAAA/851 Citations:	
ISMS: CF-A - Define the Scope of Work	

Corrective Action Items

Action #: 1	**Actionee:** Ostrom, Mike
Action Statement: Update 200 W P&T System PEP, HNF-40104 as required by PRO-PM-24889 (Project Initiation Procedure); The 200 West Area Pump &Treat (P&T) System PEP, HNF-40104, Rev. 0, was out of date. The P&T document has been in this condition since February 2009. The PEP was to be updated as changes occurred and at a minimum prior to the start of each phase of project execution as required by PRO-PM-24889, Project, Section 5.8 and PRC-PRO-PM-25000, Section 3.2.	**Due Date:** 6/30/2010
Closure Requirements: Updated and released PEP	
Action Taken: PEP update (rev 1) was issued to the project team on 6/22 and pending subsequent assessment team review comments another update is anticipated no later than August 1.	**Completed Date:** 6/23/2010
Action Approved By: Kimball, Dan	**Action Approval Date:** 6/23/2010

Action #: 2	**Actionee:** Vasquez, David A
Action Statement: Evaluate if PEPs should be written for Modutank, WESF roof repair, T-Plant and the 100K Pump and Treat Projects and process a request to the EPC VP if the work is complete or if a PEP should be written write the PEP.	**Due Date:** 7/30/2010
Closure Requirements: Note that the VP for EPC agrees that for the projects that are complete no retroactive PEP is required. Note that for any of the subject projects that are ongoing the VP EPC concurs that a PEP is not required or write and issue a PEP.	
Action Taken: The Modutank, WESF Roof Repair and the 100K Pump and Treat Phase II projects are in-progress and near completion. The estimated completion date to issue a PEP is post project closeout. It is recommended that a PEP not be written for these projects. The risks and complexity of the T Plant Infrastructure upgrades warrant the development and issuance of a PEP. PEP requirements for this project will be evaluated to the guidance of PRC-PRO-PM-25000; Project Execution Plans.	**Completed Date:** 7/30/2010
Action Approved By: Kimball, Dan	**Action Approval Date:** 7/30/2010

Action #:	Actionee:
3	Edington, Max L

Action Statement:	Due Date:
Update and issue 100K Utilities Upgrade Project PEP	7/22/2010

Closure Requirements:
Updated PEP for the 100K Utilities Upgrade Project or an exemption from the requirement by the VP of EPC

Action Taken:	Completed Date:
PEP update was completed 7/22/10 and is attached as the file below: EPC-40524_rev001_100K-Infrastructure-Project_PEP_complete.docx	7/22/2010

Action Approved By:	Action Approval Date:
Kimball, Dan	7/29/2010

Record Authentication	
Authenticated By:	Date Authenticated:
Hemsworth, Paul L	8/24/2010

EXHIBIT 53

From: Kimball, Daniel P
Sent: Wednesday, June 30, 2010 9:42 AM
To: *CHPRC Corrective Action Management
Cc: Edington, Max L; Albin, Kenneth A; Todd, Michael
Subject: CR-2010-1080 Corrective action # 3

Please extend the above action due date to 7/22/2010 due to competing priorities and resource unavailability. The proper resources have now been applied and the action will be complete by the new due date.

Dan Kimball
CHPRC
EPC ESHQ Director
office 509-376-3788
mobile (b)(6)

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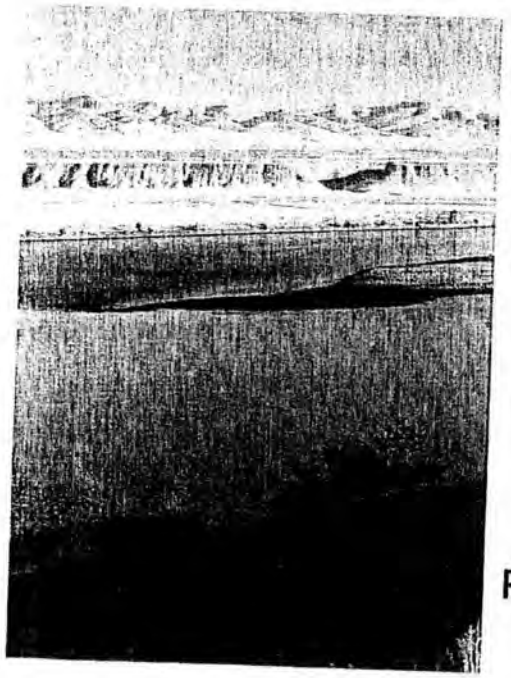

Project Review Board

Presented to:

100-K Utility Upgrades Project PRB for:
Inside the Fence Water Lines task 1
105 KW Fire Water Supply Line
A9 Switch Yard Preparation

Presented: April 7, 2010

Presented by: Dave Fink

One Culture. One Team.

EXHIBIT 55

Project Review Board Purpose

- PRB established as key element of CHPRC's subproject delivery system.
- Conduct critical review(s) of project readiness to proceed to next phase.
- Recommend to CHPRC authorizing authority if project should:
  - proceed to next phase,
  - proceed with actions,
  - not proceed pending resolution of issues.

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Project Review Board Scope and Membership

- The need for PRB review shall be documented in Project Execution Plan (PEP).
- May be established by VP Engineering, Projects and Construction.
- Membership established for each project by VP EPC and selected from:
  - CHPRC senior staff
  - Administrator
  - Subject Matter Experts
  - External resources (e.g. corporate reach back)
- Not required for projects subject to formal critical decision process.

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PRB rules of practice

- Meetings convened by chairperson.
- Chairperson establishes with project manager the method of review, e.g.
  - Document reviews
  - Interviews
  - Presentations
- Conduct review(s) and discuss at meeting(s).
- Chairperson facilitates discussion.
- Members ideally participate in project reviews over the lifecycle of project.
- PRB chairperson authorizes the project to proceed or makes recommendation to authorizing authority.

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100K Utility Upgrades PRB Membership

Designated CHPRC authorizing authority is

Kent Dorr (Vice President EPC)

- 100-K PRB Chairperson, Kent Dorr
  - Administrator, Member John Kristofzski
  - Kevin Elliot, EPC Project Controls
  - Dan Kimball, EPC Projects
  - Charlie Kronvall, EPC Chief Engineer

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Established method of review for 100K Utility Upgrades Task 1

- Project Manager presentation to PRB
  - Present project scope and current status
  - Present project baseline
  - Review drawings, road closure permit, excavation permit, GPR scans, submittal registry.
  - Review key risks and concerns
- Facilitate PRB member discussion on whether project should proceed with the tasks reviewed

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Project Scope

Inside the Fence Water Lines task 1

Non Potable Fire Water Supply Lines

- Excavation and laying of redundant Non Potable 12 inch Fire Water Supply piping North from new Water Treatment Plant Site to the planned leave off point for the 105 KW Fire Supply Loop, CVD and South to Willard St.
- A second Non Potable Fire Water Supply line will run north from the new Water Treatment Plant to Winchester St. The Line will then head East up Winchester St to the parking areas, then head North to CVD Parking lot for future to tie into CVD Fire Supply Line for the second/redundant Fire Water Supply (by others).
- From the new Water Treatment Plant a third leg of 12 inch Fire Water Supply line will head South to the south side of Willard St. Then the supply line will head East along Willard St.

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Project Scope cont.

Potable Water Line

- A 4 inch Potable Water line will run parallel to the Fire Water Supply line (with a separation of greater than 10 Ft or be encased in concrete north to Winchester St, then east on Winchester, and then North to the CVD parking lot for future tie into the existing Potable Water Line to 105KW by others.
- The 4 inch Potable line will also head south along from the new Water Treatment Plant along Waatch Ave to the south of Willard St. The Potable Water line will be located approximately 5ft off the south side of Willard St. This location is inside the Non Potable Fire Water Supply line. The Non Potable Fire Water Supply line will be located greater than 10ft south of the Potable Water Line. Both water lines will stop at a point equal to the East side of the 183.2 KW Sediment Basin

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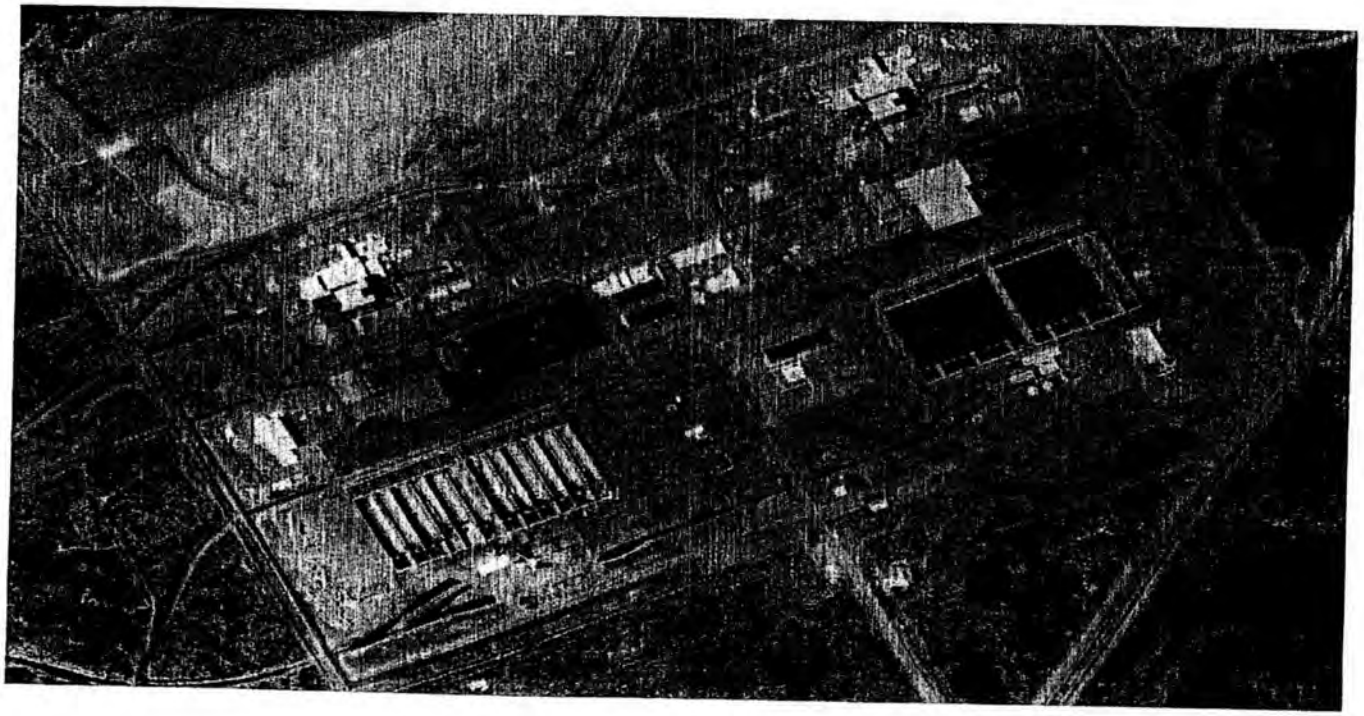
PRB Scope for Task 1



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Current Status

Inside the Fence Water Lines task 1

- Engineering for Inside the Fence Task 1 **Complete**
- GPR Scans and Excavation Permit **Complete and Approved**
- Road Closure Permit **Complete**
- CCR to Watts Contract **Awarded**
- Material **in place**
- Subcontractor Equipment **staged and ready**
- Construction Mgt Team Oversight **In place and Ready**
  - Klint Johnson Construction Coordinator
- Prestart Submittals completion pending successful hoisting and rigging class Wed/Thurs April 7&8

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Procurement Acquisition Strategy

- Fast track project – phased design and construct approach
- Contract for Subcontractor was made via Contract Change Request to the contract awarded to Watts Construction for construction of the Import Water Line Outside the Fence
- Quality Assurance will be in accordance with Watts QA Plan
- Quality Control Inspections will be performed by CH2M Hill Licensed Professional Engineer and Project Engineer

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Project Scope

Self Perform Construction of the 105 KW Non Potable Fire Water Supply Loop

- Excavate and lay approximately 4,400 linear ft of 8 inch PVC piping around 105 KW to form a Fire Water Supply loop, which includes 6 fire hydrants
- Excavate and lay 8 inch PVC piping from leave off point on the north end of Waatch Ave, then excavate and lay it east and tie into the 105 KW loop
- Excavate and lay 8 inch PVC piping from leave off point in CVD parking lot North to 105 KW loop. This will provide the second/redundant Fire Water Supply to the 105 KW loop

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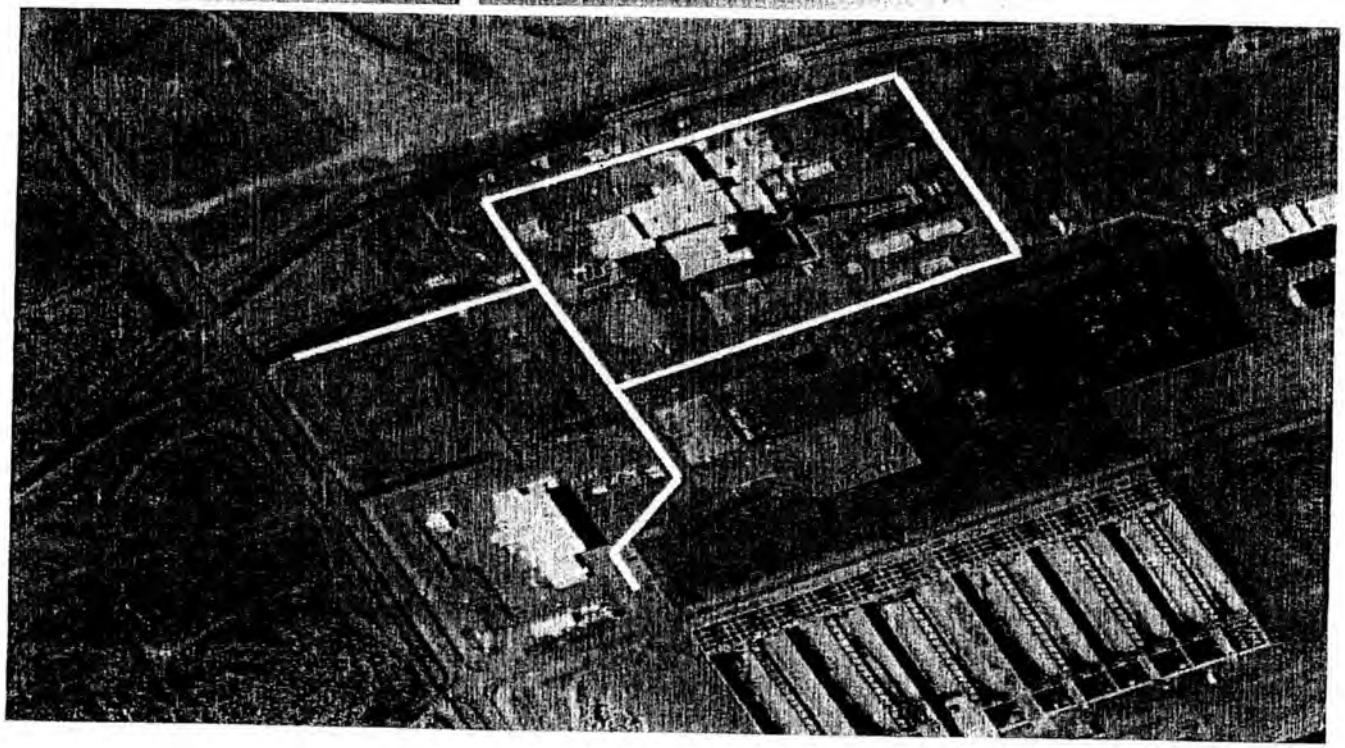
PRB Scope for 105 KW Fire Water Supply



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13

Current Status

Self Perform 105 KW Fire Water Supply Line

- Engineering for 105 KW Fire Water Supply Loop **Complete**
- GPR Scans and Excavation Permit **Complete and Approved**
- Road Closure Permit **Complete**
- Materials **in place**
- Rental Equipment **staged and ready**
- TCA **in place**
- Work force in place and training **Complete**
- Construction Mgt Team Oversight **In place and Ready**
  - Scott Story Construction Coordinator
- Waiting the final review and approval of the JCS Work Package due **Wednesday 14 April.**

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Project Scope

Self Perform A9 Switch Yard Preparation for new Sub Station

- Excavate 7 trenches for conduit
- Install approximately 10,000 ft of conduit in 9 areas within A9 yard, including sand bedding and backfill of conduit in the 9 areas
- Place Controlled Density Fill (CDF) for conduit bank
- Install 9 Hand Holds (smaller concrete utility vault)
- Install 8 Pull boxes (larger concrete utility vault)
- Inspect new electrical Hold Holes
- Cut and splice existing grounding conductors
- Place new fencing as specified and repair old fencing as necessary

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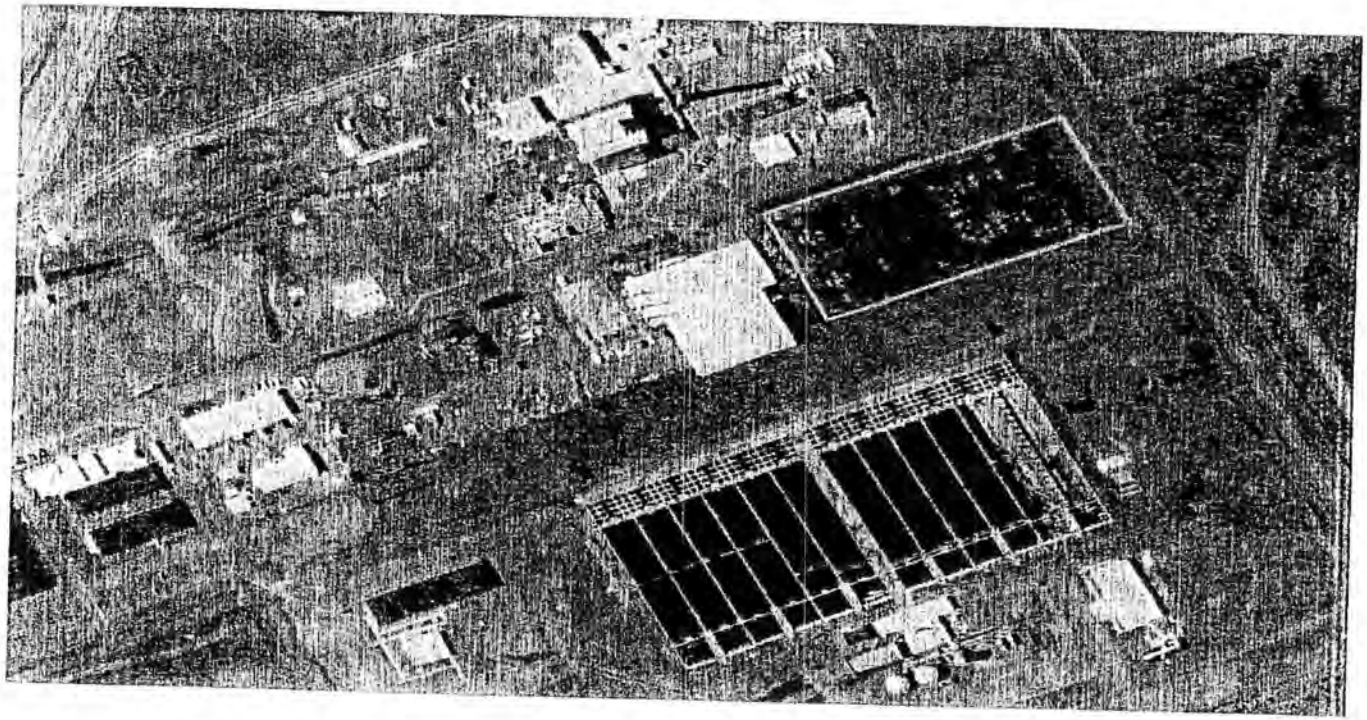
PRB Scope A9 Switch Yard Preparation



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Current Status

Self Perform A9 Switch Yard Preparation for new Sub Station

- Engineering A9 Switch Yard Prep **Complete**
- GPR Scans and Excavation Permit **Complete and Approved**
- Road Closure Permit **Complete**
- Materials **on order**
- Rental Equipment **staged and ready**
- TCA **in place**
- Work force in place and training **Complete**
- Construction Mgt Team Oversight **In place and Ready**
  - Jack Hoobler Construction Coordinator
- Waiting the final review and approval of the JCS Work Package due **Monday 12 April.**

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Project Baseline

Inside the Fence Water Lines task 1

Task 1 is scheduled to complete 26 May 2010

Task 1 is a fixed price contract for approximately $660k.

Self Perform 105 KW Fire Water Supply Line

105 KW Fire Water Supply Loop is schedule to complete 6 August 2010

Cost is approximately $1.3M

Self Perform A9 Switch Yard Preparation for new Sub Station

A9 Yard Prep is scheduled to complete 6 May 2010

Cost is approximately $350k

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Key Risks and Concerns

Inside the Fence Water Lines task 1

Slow start with Subcontractor

- Mitigation steps
  - Design Change to reduce road repair
  - Design Change to allow two 12 inch Non Potable Water lines encased in CDF to reside in same trench
  - Set up Hoisting & Rigging Class

Contractor does not have any incentive/penalty to hold Subcontractor to end date

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Key Risks and Concerns

Self Perform 105 KW Fire Water Supply Line

Excavating through contaminated area

- Mitigation Steps
  - Upon initial issue of JCS work package, a contingency package for handling contaminated soils for disposal at ERDF will be initiated. The work package will allow for a brief pause to document change in condition and continuation with the new specified work plan/controls and PPE

Self Perform A9 Switch Yard Preparation for new Sub Station

Congestion of workers in limited work area (A9 Yard)

- Mitigation Steps
  - Involving MSA Electrical Utilities personnel in planning of the A9 Yard Prep
  - Close coordination with MSA Electric Utilities personnel at the 100k POD and Pre Job Briefings

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Summary Request for Approval

The 100k Utility upgrade project request approval from the PRB to move on to construction for the following projects

- **Inside the Fence Water Lines task 1**
- **Self Perform 105 KW Fire Water Supply Line**
- **Self Perform A9 Switch Yard Preparation for new Sub Station**

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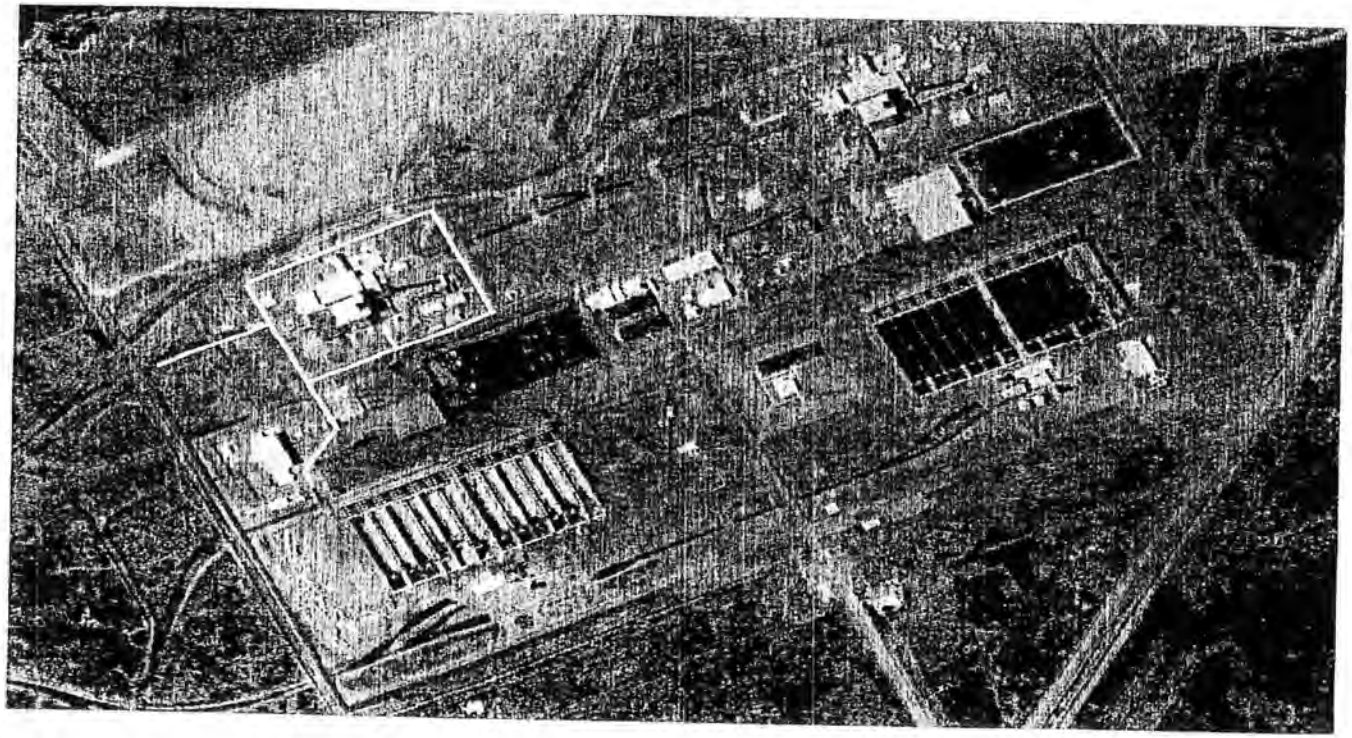
Sub Projects for PRB Approval



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Kennedy, Colburn E

EXHIBIT 56

	Fink, David E
	Wednesday, April 07, 2010 3:20 PM
	Kenier, Kurtis L; Kennedy, Colburn E
Cc:	Dorr, Kent A; Douglass, Stephen R
Subject:	Good News the PRB Approved the following for Construction
Attachments:	image001.png

Kurt and Colburn,

The PRB approve the movement to construction for the following sub projects

- Inside the Fence Task 1
- Self Perform 105 KW Fire Water Loop
- A9 Switch Yard Prep

I have two actions to clear by Friday COB with Kent. I think that overall it went well.

The PRB for the rest of the project will be in 2 weeks.

Thanks,

Dave

David Fink - CH2MHILL
Plateau Remediation Company
Engineering, Projects & Construction
Office 509.376.1369
Mobile (b)(6)

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EXHIBIT 57

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Project Review Board

Presented to:
100-K Utility Upgrades Project

Presented: April 21, 2010

Presented by: Dave Fink

Our Culture. Our Team.

21

Project Review Board Purpose

- PRB established as key element of CHPRC's subproject delivery system.
- Conduct critical review(s) of project readiness to proceed to next phase.
- Recommend to CHPRC authorizing authority if project should:
  - proceed to next phase,
  - proceed with actions,
  - not proceed pending resolution of issues.

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Project Review Board Scope and Membership

- The need for PRB review shall be documented in Project Execution Plan (PEP).
- May be established by VP Engineering, Projects and Construction.
- Membership established for each project by VP EPC and selected from:
  - CHPRC senior staff
  - Administrator
  - Subject Matter Experts
  - External resources (e.g. corporate reach back)
- Not required for projects subject to formal critical decision process.

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PRB rules of practice

- Meetings convened by chairperson.
- Chairperson establishes with project manager the method of review, e.g.
  - Document reviews
  - Interviews
  - Presentations
- Conduct review(s) and discuss at meeting(s).
- Chairperson facilitates discussion.
- Members ideally participate in project reviews over the lifecycle of project.
- PRB chairperson authorizes the project to proceed or makes recommendation to authorizing authority.

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100K Utility Upgrades PRB Membership

Designated CHPRC authorizing authority is

Kent Dorr (Vice President EPC)

- 100-K PRB Chairperson, Kent Dorr
  - Administrator, Member John Kristofzski
  - Kevin Elliot, EPC Project Controls
  - Dan Kimball, EPC Projects
  - Charlie Kronvall, EPC Chief Engineer

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Established method of review for 100K Utility Upgrades Project

- Project Manager presentation to PRB
  - Present project scope and current status
  - Present project baseline
  - Review drawings, road closure permit, excavation permit, GPR scans, submittal registry.
  - Review key risks and concerns
- Facilitate PRB member discussion on whether project should proceed with the tasks reviewed

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Results from 1st 100k Utilities Upgrade PRB

1st PRB for 100k Utilities Upgrade Project was 7 April 2010

Project presented for approval:

- Inside the Fence Water Lines task 1
- Self Perform 105 KW Fire Water Supply Line
- Self Perform A9 Switch Yard Preparation for new Sub Station

Approval granted upon closure of assigned actions

- Provide method/tool for managing short duration activities like A9 Yard Prep
- Communicate how the project intends to manage excavation subcontractor
- Communicate method for managing communication between the multiple sub projects in next PRB

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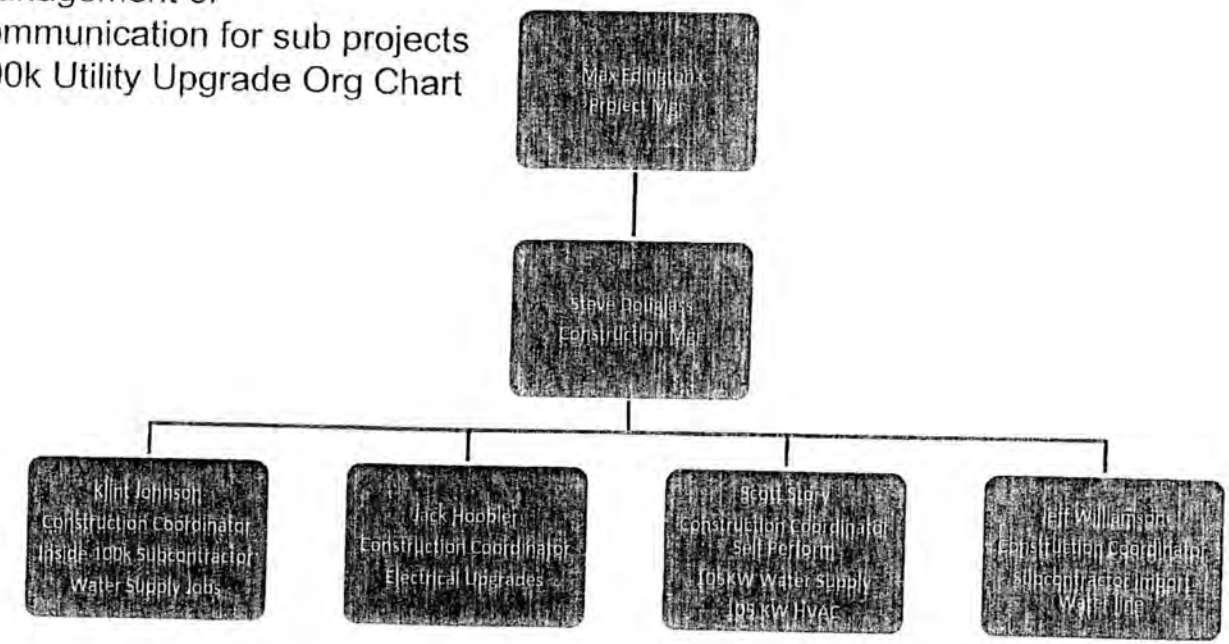
Results from 1st 100k Utilities Upgrade PRB

Method for internal management of communication for sub projects 100k Utility Upgrade Org Chart



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Results from 1st 100k Utilities Upgrade PRB cont.

Closure documentation submitted to PRB Chairman Friday 9 April 2010

Closure accepted and approval granted by PRB Chairman Monday 12 April 2010

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100k Utilities Upgrade balance of project PRB

Purpose of this PRB is present the balance of subprojects for approval to move into construction

Subprojects to be presented:

- 105 KW Basin HVAC Upgrade
- 13.8 Re-Route
- A9 Sub Station & Switches
- Import Water Line
- 100k Fire Water & Potable Water Supply
  - Supply lines
  - New Water Treatment Plant

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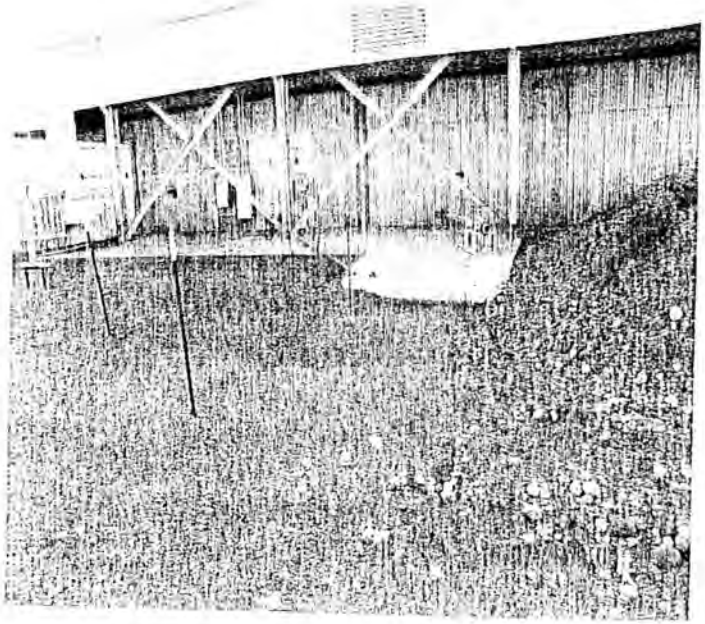
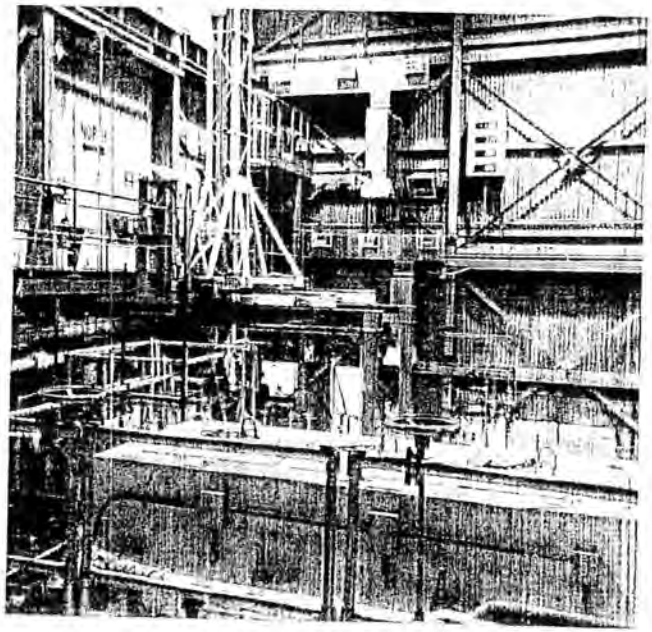
105 KW Basin HVAC Upgrade





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105 KW Basin HVAC Upgrade

The KW Basin Airborne Contamination Remediation Project involves installation of multiple HVAC units to better regulate temperature in the building and to improve air quality in the work area.

- New HVAC systems will pull air from the Basin envelop, condition the air, remove airborne contamination (particulate), and return air back into the Basin. This recirculation strategy means there is no impact on the building's airborne effluent permit.
- This new HVAC system is for operational convenience and will not perform as a safety significant, safety class or defense in depth function.
- The Project Team will coordinate activities with the Sludge Treatment Project to assure HVAC work does not cause interference with the Sludge Project.

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Current Status

105 KW Basin HVAC Upgrade

- Engineering HVAC Upgrade **Complete**
- JCS and Work Soft Releases **USQ Screened & Ready**
- Subcontract for Equipment and Service outside Basin **Awarded to GA Grant**
- Self Perform personnel training **Complete**
- Long Lead equipment **ordered,** Scheduled delivery 7 July 2010
- Materials **staged**
- Construction Mgt Team Oversight **In place and Ready**
  - Scott Story Construction Coordinator
- Prestart Submittals 30 %complete anticipated completion date 3 August 2010

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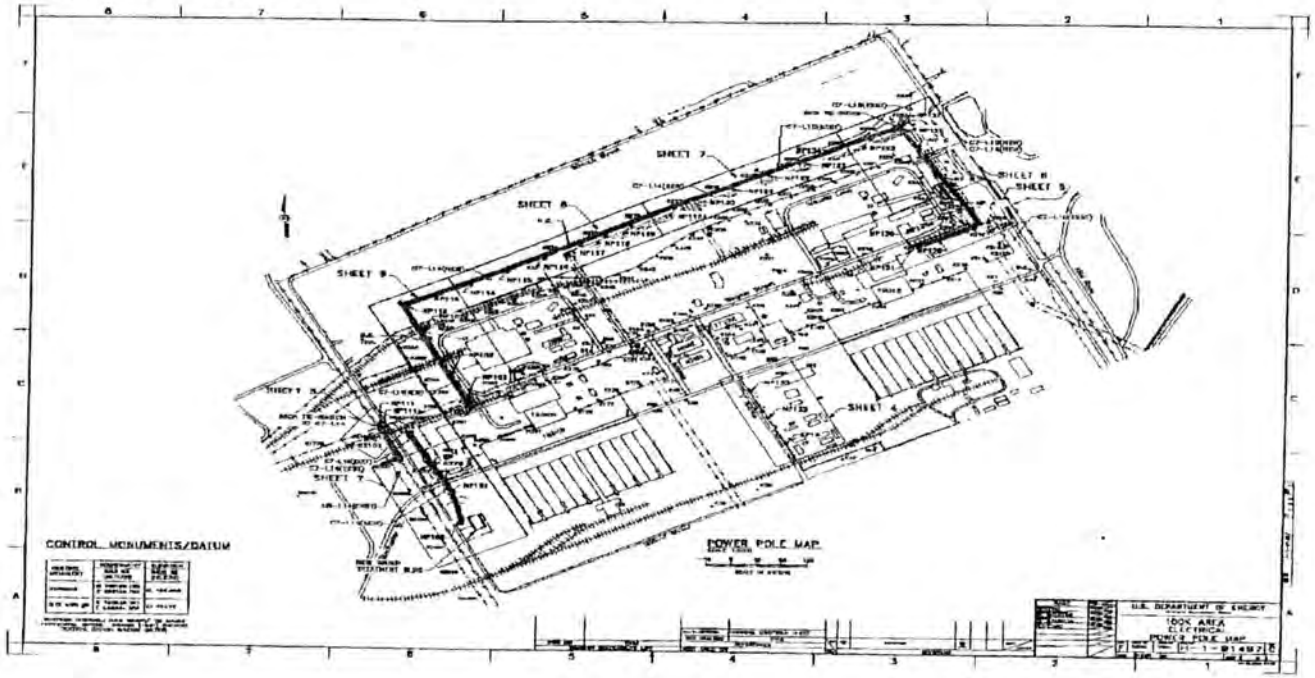
13.8 Re-Route

[redacted]

13.8 Re-Route



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13.8 Re-Route

The 13.8 Re-Route project shall provide power to the following:

- the 105KW reactor and the ventilation system for the 105-KW basin facility and the adjacent mobile offices.
- Power to the CVDF facility and adjacent mobile offices (present and anticipated).
- Power to the mobile offices in the south of 100K (including MO500, MO054 and MO293).
- The project shall provide approximately 5 power drops at locations within 100K to allow connection of temporary demolition power feeds and disconnects.

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Current Status

13.8 Re-Route

- Engineering **Complete**
- GPR Scans and Excavation Permit **Complete and Approved**
- Road Closure Permit **Complete**
- Contract Award **Pending**
- Construction Mgt Team Oversight **In place and Ready**
  - Jack Hoobler Construction Coordinator
- Prestart Submittals

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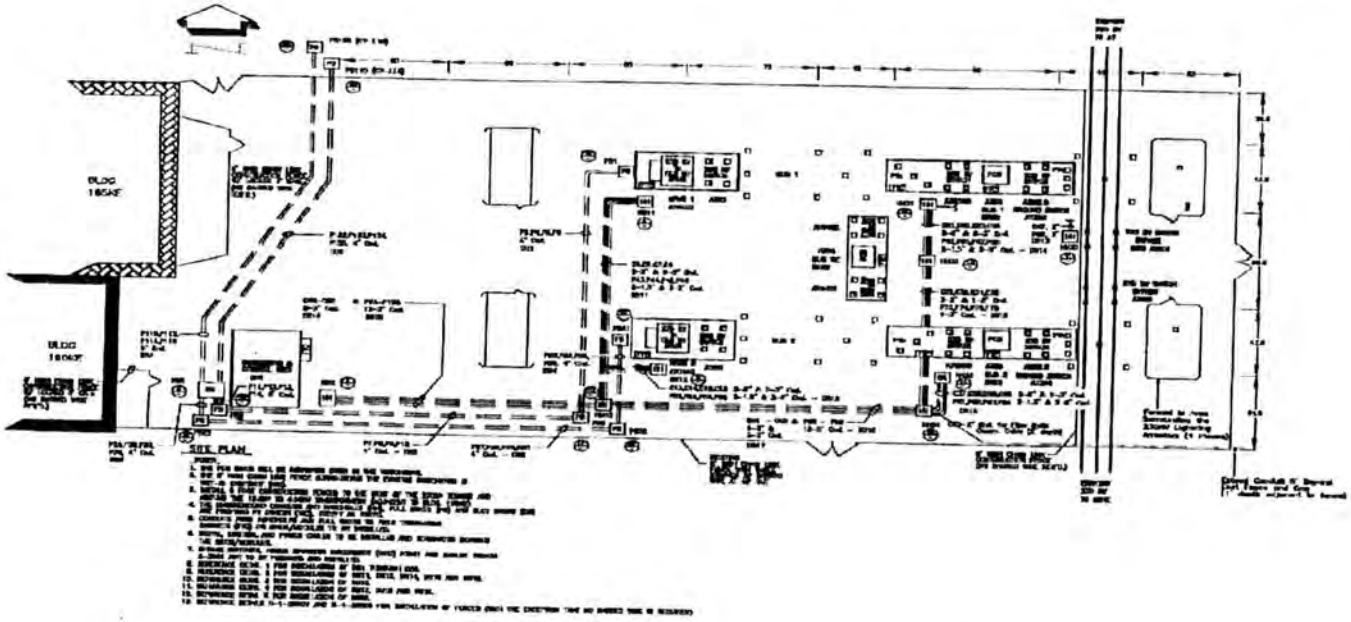
A9 Sub Station & Switches



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A9 Substation & Switches

The purpose of the project is to isolate / consolidate the 100K electrical supply and route it to avoid interference with demolition activities.

- Provide new substation in the A9 (151KE) Switchyard and 13.8 kV switching capability.
- The work scope for new facility and equipment in the A9 switchyard will be subcontracted which includes the design, installation and testing of new equipment e.g. (2) 230Kv Switches, 230kV breakers, 230-13.8kV transformers, 15kV switchgear and associated grounding, 13.8kV pole lines, fence, switches, and a control house with switchgear, relaying and controls).
- Electrical Utilities has participate as a full time team member.

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Current Status

This sub project is a Design Build contract for approximately $8.4 M

- Contract has been **awarded to EPCS/ABB**
- Design **is in process**
- Long lead items e.g. Oil Filled Circuit Breakers, Transformers, Switches **have been ordered**
- A contract modification to accelerate the project **pending award**

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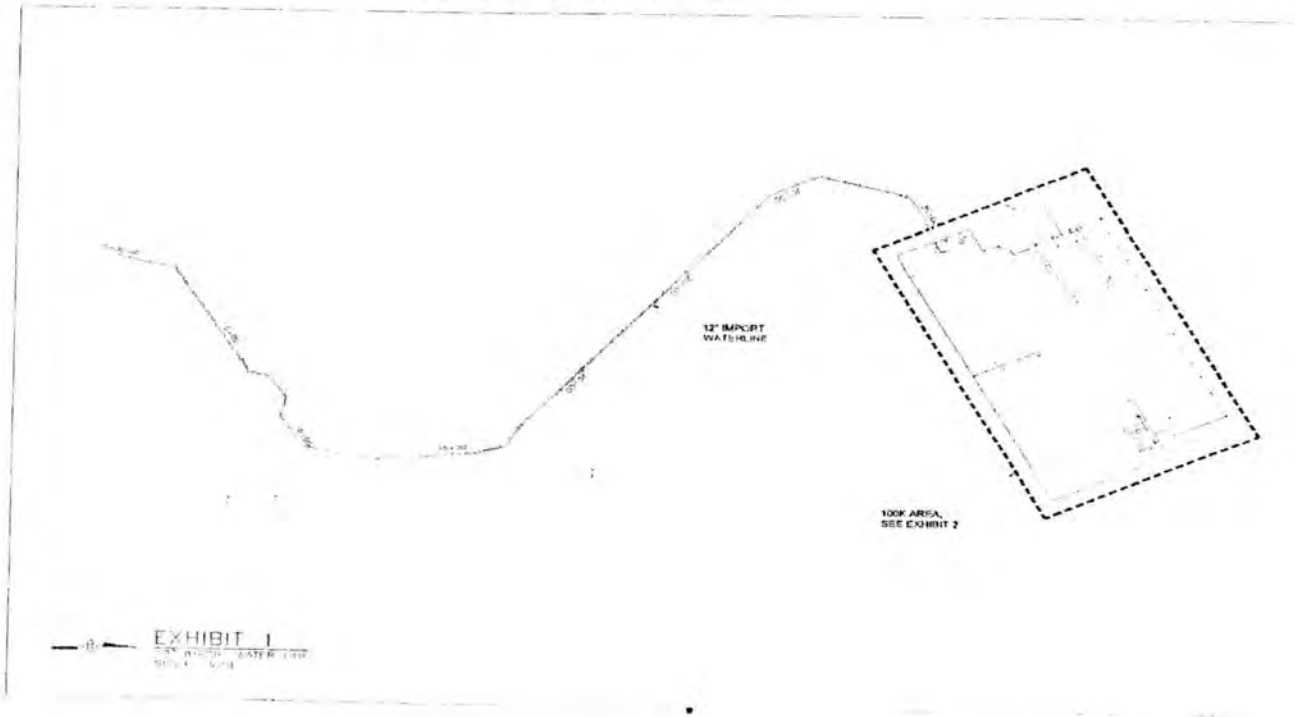
Import Water Line



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Import Water Line

The River Water Infrastructure Project involves installing 11,200 feet of 12" PVC piping for the raw water line from Helen's Junction, located in the 600 area, southeast of the 100B area, north to the southwest corner of the 100K project. The raw water line will enter the southwest corner of 100K, and will be routed to the raw water reservoir tank located at the new potable water treatment (approximately the corner of Waatch Avenue and Willard Street).

- The raw water line work of the project includes excavation, installation and backfill of the proposed 12" water supply and line. A connection to the water treatment plant will be provided off of the proposed 12" raw water line connection.

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Current Status

PRB Scope Import Water Line

Engineering for Import Water Line **Complete**

- GPR Scans and Excavation Permit **in process** (final step in process 30 day Tribal Review)
- Contract **Awarded to Watts Construction**
- Materials **in place**
- TCA **in place**
- Construction Mgt Team Oversight **In place and Ready**
  - Jeff Williamson Construction Coordinator

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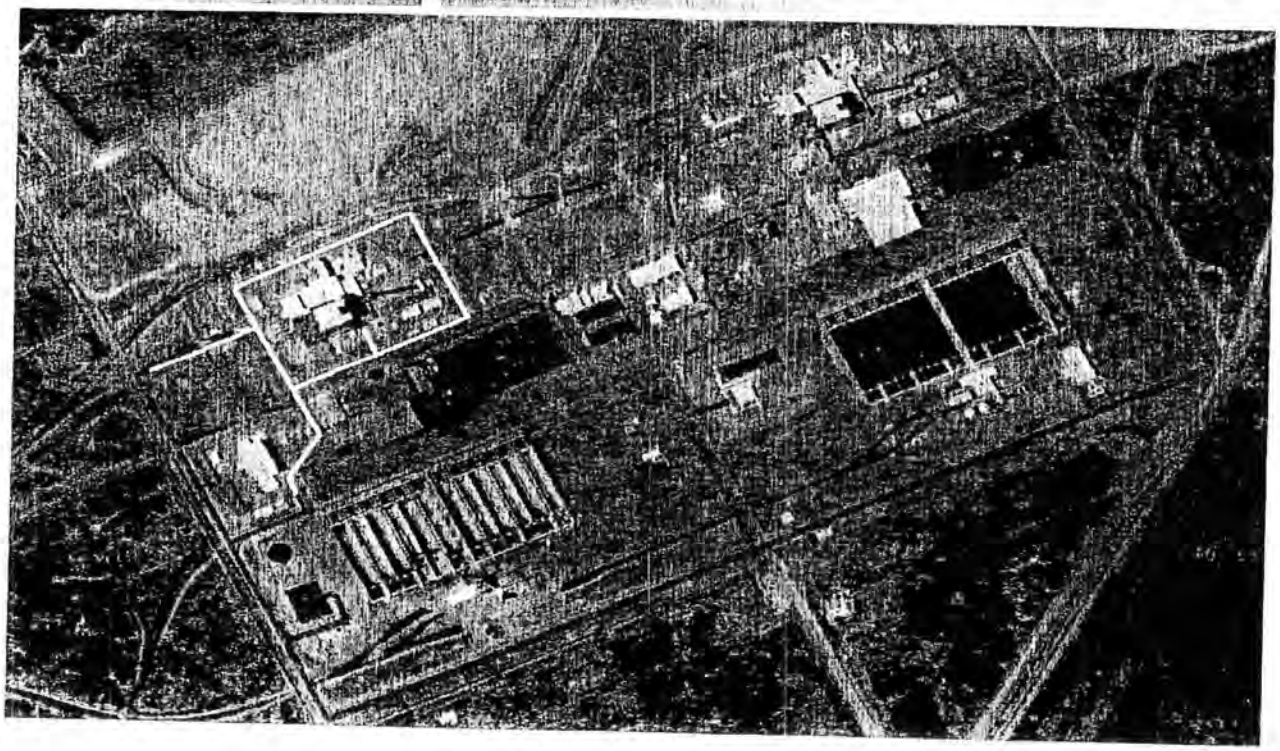
100k Fire Water & Potable Water Supply



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100k Fire Water & Potable Water Supply

This work scope includes the design and construction of a new potable water plant, potable water distribution system and fire water supply system.

- The fire water distribution system throughout the 100K site may consist of pipe as large as 12" with potable water distribution lines within the 100K site as small as 1".
- The 100K Fire Water System includes connection of the firewater system to:
  - 142KW (looped service), 105KW (a new fire suppression looped service),
  - 105KE (in support of the core removal activity),
  - MO500,
  - MO293 and the proposed trailers south of MO500.

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100k Fire Water & Potable Water Supply Cont.

The new potable water treatment plant will be capable of providing a production rate of 50 gallons per minute that will supply sanitary water for 142KW, 105KW, MO293, MO500, 15 trailers, portable restrooms, shower trailers and any other facilities currently connected to the distribution system.

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Current Status

100k Fire Water & Potable Water Supply

Engineering Fire Water Supply and Potable Water Supply **Complete**

- GPR Scans and Excavation Permit **Complete and Approved**
- Road Closure Permit **Complete and approved**
- Materials **in place**
- Task 1, and 105 KW Self Perform of project PRB **Approved and Working**
- Contract for Balance of excavation and piping **out for procurement**
- Construction Mgt Team Oversight **In place and Ready**
  - Klint Johnson Construction Coordinator
- Waiting the final review and approval of the JCS Work Package complete **Wednesday 14 April.**

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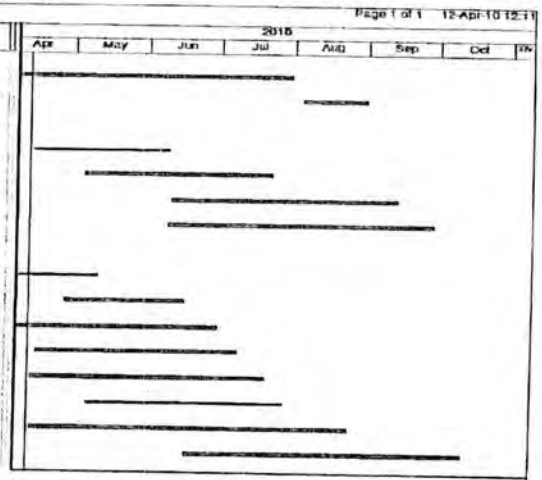
Project Baseline Schedule

HL-012 SNF Stabilization Deactivation (HL-12, HL-41, 9119)

Page 1 of 1 12-Apr-10 12:11

Line No.	Activity Name	Start	Finish
	P.041.02.06.01.01 KW Basin Deactivation	29-Mar-10 A	30-Aug-10
1	105KW HVAC System Upgrade - Construction	29-Mar-10 A	30-Jul-10
2	105KW HVAC System Upgrade - Startup & Testing	04-Aug-10	30-Aug-10
	P.041.02.07.01.02 [S] 100K Reactor Power Isol...	13-Apr-10	29-Sep-10
3	A-9 Switchyard - Construction	13-Apr-10	09-Jun-10
4	13.8kV - Construction	05-May-10	22-Jul-10
5	Substation / Batteries - Construction	10-Jun-10	13-Sep-10
6	Power Isolation Tie-Ins / Startup / Testing	09-Jun-10	29-Sep-10
	P.041.02.07.01.03 [S] 100K River Water Infrast...	22-Feb-10 A	11-Oct-10
7	Microfiltration Unit - Fab / Receipt Delivery	22-Feb-10 A	10-May-10
8	Import Water Line (Outside Fence) - Construction	27-Apr-10	16-Jun-10
9	Import Water Line (Inside Fence) - Construction	05-Apr-10 A	30-Jun-10
10	Fire Loop System - Construction	15-Apr-10	08-Jul-10
11	Water Treatment Building - Construction	13-Apr-10	20-Jul-10
12	Import Water Line (Inside Fence) - Startup & Testing	07-May-10	28-Jul-10
13	Dual Use Water Tank - Construction	13-Apr-10	24-Aug-10
14	Water System OTPs / Startup & Testing	17-Jun-10	11-Oct-10



100 K Area Utilities - Summary

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Project Baseline

PMRS

CostPerf - 1
Database: Production-> BOWSA
Source: HANDI

Cost Performance

By WP/PP

MP-PRC - MPB - Baseline Projects

Page 1 of 1
Report Date: 04/12/2010 12:27:25
Fiscal Year/Month: 2010/06
($'s in 1000's)

	Current Period					Fiscal Year to Date					Fiscal Year BAC		
	Budgeted Cost		Actual Cost	Variance		Budgeted Cost		Actual Cost	Variance				
	Work Scheduled	Work Performed	Work Performed	Schedule	Cost	Work Scheduled	Work Performed	Work Performed	Schedule	Cost	Budgeted	FY SF	Variance
041.02.06.01.01.04 - [S] KW Basin Airborne Cont Perned F	112.1	109.3	269.3	(2.2)	(159.4)	112.1	629.1	864.1	516.0	(235.0)	592.6	3,109.6	(2,127.0)
041.02.07.01.01 - [S] 100K Closure Support Facilities Proje	0.0	0.0	0.7	0.0	(0.7)	0.0	30.4	103.5	30.4	(73.2)	0.0	103.5	(103.5)
041.02.07.01.02 - [S] 100K Reactor Power Isolation Project	1,457.0	494.3	451.4	(962.7)	43.0	2,223.2	1,260.1	732.7	(963.1)	527.4	5,673.5	10,342.8	(4,669.3)
041.02.07.01.03 - [S] 100K River Water Infrastructure Isola	3,417.3	1,058.7	629.5	(2,358.6)	429.2	4,732.2	2,755.0	1,221.8	(1,977.2)	1,533.1	13,572.2	8,959.4	4,572.8
Report Total:	4,986.4	1,662.9	1,350.9	(3,323.5)	312.0	7,067.5	4,673.5	2,922.2	(2,393.9)	1,751.3	20,234.3	22,555.3	(2,321.0)

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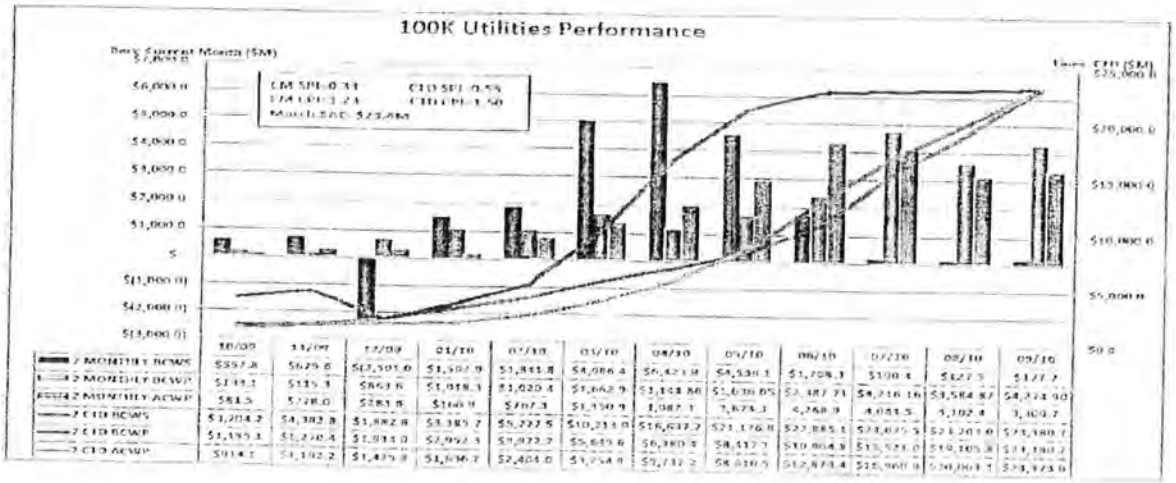
28

Project Baseline



	10/09	11/09	12/09	01/10	02/10	03/10	04/10	05/10	06/10	07/10	08/10	09/10
2 MONTHLY BCWS	$557.8	$629.6	$2,501.0	$1,507.9	$1,831.8	$4,086.4	$6,421.8	$4,530.1	$1,709.3	$100.4	$127.5	$127.7
2 MONTHLY BCWP	$141.1	$135.3	$863.6	$1,018.3	$1,020.4	$1,662.9	$1,143.86	$1,630.05	$2,187.71	$4,216.16	$3,584.87	$4,224.90
2 MONTHLY ACWP	$81.5	$278.0	$283.8	$160.9	$767.3	$1,150.9	1,087.1	1,675.1	4,268.9	4,083.5	3,102.4	3,109.7
2 CTD BCWS	$1,204.2	$4,382.8	$1,882.8	$3,389.7	$5,222.5	$10,233.0	$16,637.2	$21,176.8	$22,885.1	$23,075.5	$23,203.0	$23,380.7
2 CTD BCWP	$1,195.1	$1,230.4	$1,933.0	$2,952.3	$3,972.7	$5,635.6	$6,380.8	$8,117.7	$10,804.8	$15,521.0	$19,105.8	$23,330.7
2 CTD ACWP	$914.1	$1,192.2	$1,475.8	$1,636.7	$2,404.0	$3,554.8	$5,732.2	$8,010.5	$12,873.4	$16,960.9	$20,063.1	$23,173.0

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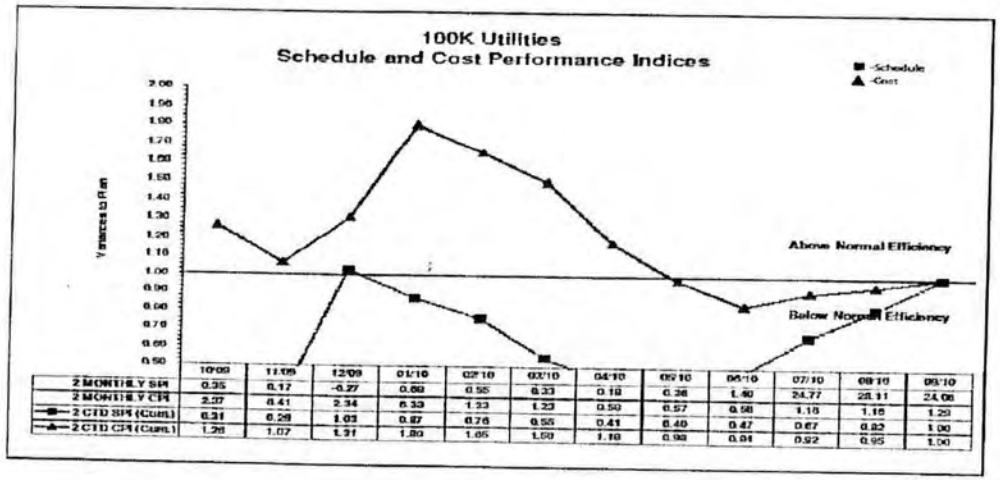
Project Baseline



	10/09	11/09	12/09	01/10	02/10	03/10	04/10	05/10	06/10	07/10	08/10	09/10
2 MONTHLY SPI	0.35	0.17	-0.27	0.60	0.55	0.33	0.18	0.38	1.40	24.77	28.11	24.08
2 MONTHLY CPI	2.07	0.41	2.34	0.33	1.23	1.23	0.50	0.57	0.58	1.16	1.16	1.29
2 CTD SPI (Cum.)	0.31	0.29	1.03	0.87	0.76	0.55	0.41	0.40	0.47	0.67	0.82	1.00
2 CTD CPI (Cum.)	1.28	1.07	1.31	1.30	1.05	1.00	1.10	0.98	0.94	0.92	0.95	1.00

SPI-CPI March09RAFT.xlsx

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Project Baseline Contracts

WBS	Contract / Release	Authorized Amount
041.02.06.01.01.04 - [S] KW Basin Airborne Cont Remed Proj		
	40058-38 TCA FFS Contamination Remediation (Craft Labor/Materials/Equipment)	1,080.7
	Req 203048 (GRANT) Install AHU/HEPA Units, HVAC,Ducting, Pad mounted Xfmer	459.8
	41542 - Design/Fab/Install AHU/HEPA Filtration Units (3)	723.9
041.02.07.01.02 - [S] 100K Reactor Power Isolation Project		
	40058-66 TCA -A9 Yard Prep (Craft Labor/Materials/Equipment)	750.0
	40058-50 - Perform Water tie-ins (FFS) (to be split between Sub-contractor & Self-Perform	200.0
	Req 200817 - Install 13.8KV Reroute & Xformers	1,200.0
	40929-0 EPC Mobile Substation - Des/Fab/Install	7,798.6
	36578-17 Parsons Fab Oil Circuit Breaker Lifting Devices	23.4
	36591-43 (EU) MSA Elect Utilities Support	90.4
041.02.07.01.03 - [S] 100K River Water Infrastructure Isolation		
	40058-39 TCA - 100K Potable Water & Fire Water Line Install (Inside Fence) - Estimate to be revised between East & West (4/8) (Craft Labor/Materials/Equipment)	1,850.0
	36538-22 WATTS Task 1 100K River Water Iso Proj Import Water Line	660.0
	New - Install Water Line Inside Fence **(Tasks 2-4)**	1,500.0
	36534-31 - Grant Design/Build Water Treatmnt Bldg & Storage Tank	3,087.0
	41594 (Req 201665) - Fire Diesel Pump	42.5
	40874-0 PALL Water Treatment System	466.9

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Total Project Key Risks and Concerns

105 KW Basin HVAC Upgrade

Elevated Overhead Work in Potentially Contaminated Area

- Mitigation steps
  - Elevated Work Training
  - Hoods for visibility

Authorization Basis North Wall

- Waiting for DOE Approval of Annual Update
  - Communication through DOE 100k Project Director

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Total Project Key Risks and Concerns cont.

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13.8 Re-Route through Unknown Rad Material Area

- Mitigation Steps
  - Escorting of sub contractor personnel by Rad Worker 2 Personnel
  - Monitoring of excavation

Substation Transformers late delivery

- Mitigation Steps
  - Solicited for Acceleration Proposal
    - » Performing Tech Eval on Proposal
    - » $100k Additional Cost to Accelerate the Delivery of Transformer #2 in to Mid August 2010

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Key Risks and Concerns

Excavating through contaminated area

- Mitigation Steps
  - Upon initial issue of JCS work package, a contingency package for handling contaminated soils for disposal at ERDF will be initiated. The work package will allow for a brief pause to document change in condition and continuation with the new specified work plan/controls and PPE

Water Treatments plant and Tank has numerous schedule risks

- Mitigation Steps
  - Requested Acceleration plan from General Contractor
  - Exploring alternatives e.g. extended schedules, extended staff

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Summary Request for Approval

The 100k Utility upgrade project request approval from the PRB to move on to construction for the following projects:

- 105 KW Basin HVAC Upgrade
- 13.8 Re-Route
- A9 Sub Station & Switches
- Import Water Line
- 100k Fire Water & Potable Water Supply
  - Supply lines
  - New Water Treatment Plant and Fire Water Supply Tank

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EXHIBIT 58

From: Chaffee, Gail A
Sent: Thursday, April 14, 2011 4:04 PM
To: Morgan, Gregory
Cc: Teynor, Thomas; Ramble, Alan L; Morgan, Calvin E; Quintero, Roger; Jackson, Mark; Hill, Burton; West, Dale; Koch, Michael R; Clapp, Dennis (CONTR); Raymond, Richard E
Subject: RE: USQ in Support of New Water System

Greg,

I have attached the engineered analysis for the change to the 8" line from the 12" line. Also attached is the USQ for that document. I agree that 0025-2011 should have some text that recognizes the change in the FSAR, we are revising the text in the USQ description and the answers to the USQ will not change. Additionally, we have been going through Chapter 2 of the FSAR which includes the description of equipment and processes and we are updating as appropriate Section 2.9.1.7. Although we have a draft chapter it has not been reviewed or subjected to the USQ process yet.

The Engineering Analysis for the water line change should ease your concern about maintaining Nuclear Safety. As you know, we do not have any accidents that rely upon the fire suppression system in either the CVDF or the 105-KW Basin FSAR. The water tank does maintain water that we could use to supply make-up water and is identified as DID, however, our TSR does allow us to get water from several different sources and does not rely on any one system.

Also, as we discussed, the location of the water tank did consider the placement and the potential for flooding. I will verify the final location is as designed.

Gail Chaffee

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Thursday, April 14, 2011 3:27 PM
To: Chaffee, Gail A
Cc: Teynor, Thomas; Ramble, Alan L; Morgan, Calvin E; Quintero, Roger; Jackson, Mark W.; Hill, Burton E.; West, Dale C.; Koch, Michael R; Clapp, Dennis A.
Subject: FW: USQ in Support of New Water System
Importance: High

Gail:

In our discussions (today at 2:05, and over the last two months or more), it was stated that the design change from 12 inch to 8 inch was screened out from the USQ process because the change would be USQ reviewed prior to implementation at the facility (Appendix B, bullet 7, bolded below). DCN-KUP-073 is marked in that manner. That then requires a USQ Determination before implementation at the facility. USQ 0025 2011 has DCN-KUP-073 as one of the DCNs covered:

> DCN-KUP-073, *Release of Construction Drawings for 100K Potable Water Line and Fire Water Line*, revises drawing H-1-91185 Sheet 4 and Sheet 14. The DCN modifies the fire line routing on the east side of CVDF and adds a fire hydrant south of 105-KW. The proposed revision does not conflict with the description of the water system upgrade in Section 2.9.1.7 of the FSAR.

However, the proposed revision **does conflict** with Section 2.9.1.7 of the FSAR, which says:
The planned system will provide a new water supply for the 100 K Area, via a 12-inch pipeline from the existing export water line. The planned tie-in point is at Helen's Junction, southwest of the 100 K Area. The new water supply will provide raw water to the 100 K Area, at a nominal delivery rate in excess of 1500 gal/min. The raw water feed will be to a 750,000 gallon tank, located in the southwest corner of the 100 K Area. This tank is sized to provide water for fire suppression (360,000 gallons), emergency basin make-up (180,000 gallons), and up to 24 hours of potable water demand at a nominal rate of 50 gal/min.

The planned fire suppression water distribution system will provide a 12-inch fire main throughout the 100 K Area, with a looped and gridded system on the west side of the 100 K Area, supplying Buildings 142-K and 105-KW. Existing piping exterior to Building 105-KW will be replaced with a new loop, providing six new fire hydrants and the water supply to the Building 105-KW administrative area automatic sprinkler system. A single 12-inch fire main will serve facilities in the central corridor (1724-K, MO-500, and hydrants in the central corridor) and on the east side of the 100K Area (MO-293, and hydrants on the east side, including hydrants in the vicinity of Building 105-KE). Normal system pressure will be maintained by new service water pumps, which will be sized and controlled to maintain system pressure at a level comparable to that provided by the existing system (approximately 120 psi).

Therefore, there does not appear to be a USQ evaluation which covers the reduction from providing "a 12-inch fire main throughout the 100 K Area, with a looped and gridded system on the west side of the 100 K Area, supplying Buildings 142-K and 105-KW" to tying into the existing 8-inch loop around Building 142-K (CVDF).

This leaves the question in place: Given that the replacement fire suppression system has been tied in and is started up, and your statement below that the "DCN for changing the 12 inch line supply line the existing 8 inch loop around 142K was identified during our review as still needing a USQ", please explain how CHPRC is currently ensuring compliance with 10 CFR 830, Section 203?

Please explain.

Greg Morgan

Appendix B
Exceptions to the USQ Process

NOTE: *Any document or procedure that is listed in a facility or project-specific safety basis compliance matrix may not be excluded from the USQ process using this Appendix as a basis.*

This procedure does *not* apply to:

- Safety Basis Activities in a less than hazard category 3 facility.
- Administrative non-technical basis documents controlled by PRC-PRO-IRM-9679, *Control of Administrative Plans, Reports, Studies, and Description Documents.*
- Work hazards analyses performed pursuant to PRC-PRO-WKM -079, *Job Hazard Analyses.*
- Radiological work planning and as low as reasonably achievable (ALARA) documents, Radiological Work Permits (RWPs), survey plans, procedures for operating radiation measurement devices, procedures for monitoring radiological status during work activities.
- Environmental permits, reviews or environmental planning documents.
- Administrative and financial portions of work planning documentation such as additional forms, permits and administrative fields of work management generated forms that are not part of the **work instructions**.
- Design Change Notices (DCN) and Facility Modification Packages (FMP) that will be either 1) **USQ reviewed prior to implementation at the facility,** or 2) incorporated into a facility modification or new facility design that will be authorized by RL in a SER so long as the DCN or FMP do not modify an existing hazard category 1, 2, or 3 nuclear facility prior to RL issuance of the SER. Changes to the facility or partial installations made prior to the receipt of the SER are subject to the USQ process.
- Changes to the CHPRC functional organization chart shown in Chapter 17 of PRC-NS-11724, CH2M HILL Plateau Remediation Company *Safety Management Programs.*

Several CHPRC documents and their corresponding project-specific implementing documents listed by topical area or individually in the following sections are not subject to the USQ process. To exclude a

project-specific implementing document from USQ review, ensure 1) the scope of the implementing document falls within the scope of the topical areas listed below, and 2) the implementing document is not contained in the facility, project, or TS Safety Basis Compliance Matrix.

From: Chaffee, Gail A
Sent: Thursday, April 14, 2011 1:56 PM
To: Morgan, Gregory
Subject: RE: USQ in Support of New Water System
Importance: High

I am so sorry for all this confusion however, I think I finally got it...I know you have been asking for the USQ on the 12-8 inch line change. The DCN initially was screened out of the USQ process according to PRC-NS-PRO-062, Appendix B Exclusions. This exclusion does require us to do an overall USQ on those DCNs initially excluded. For some reason, I thought that USQ was still in draft while we were waiting for some final DCNs. I was wrong. The first overall USQ was completed before the project went on line. Attached is that USQ (0025-2011). I have also attached DCN-073 that includes the change from the 12 inch line to the 8 inch line for fire suppression.

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Thursday, April 14, 2011 1:09 PM
To: Chaffee, Gail A **Cc:** Teynor, Thomas; Quintero, Roger; Jackson, Mark W.; Hill, Burton E.; West, Dale C.; Koch, Michael R; Clapp, Dennis A.
Subject: RE: USQ in Support of New Water System

Gail:

I still do not understand.

I have been asking which USQ screening/evaluation CHPRC has relied upon to ensure nuclear safety and compliance, for this change from 12 inch lines to 8 inch lines for fire suppression. The response has not identified the actual USQ being relied upon. I understand that you will be doing an overall USQ, based on PRC-PRO-NS-062
Unreviewed Safety Question Process, Section 4.1.10, "
10. Implement the proposed activity. If the proposed activity is a physical modification, provide verification that the installed modification is in agreement with the safety basis and USQ documentation prior to start of operations to assure that any new hazards have been identified and incorporated into the hazards analyses and accurately reflected in the USQ review. Incorporate changes in the facility safety basis or transportation safety basis at the next annual update as appropriate.

NOTE: *This verification of the modification is accomplished by PRC-PRO-EN-2001, Facility Modification Design Process, under "Verify Work."*

The questions remain: What USQ screening/evaluation is being relied upon for nuclear safety, and for compliance with 10 CFR 830 Section 203?

Thank you.

Greg Morgan

From: Chaffee, Gail A
Sent: Thursday, April 14, 2011 12:09 PM
To: Morgan, Gregory **Cc:** Teynor, Thomas; Quintero, Roger; Jackson, Mark; Hill, Burton; West, Dale; Koch, Michael R
Subject: RE: USQ in Support of New Water System

I think my wording may have lead to a misinterpretation; the DCN was properly reviewed (including the deputy fire marshal) and subjected to the USQ process, however, consistent with our procedure (PRC-PRO-NS-062) we are doing a more comprehensive USQ on several of the DCNs. That is the purpose of the DRAFT report I provided to you yesterday.

Please let me know if you have other questions or concerns.

Gail Chaffee

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Thursday, April 14, 2011 11:11 AM
To: Chaffee, Gail A
Cc: Teynor, Thomas; Quintero, Roger; Jackson, Mark W.; Hill, Burton E.; West, Dale C. **Subject:** RE:

USQ in Support of New Water System

Gail:

Given that the replacement fire suppression system has been tied in and is started up, and your statement below that the "DCN for changing the 12 inch line supply line the existing 8 inch loop around 142K was identified during our review as still needing a USQ", please explain how CHPRC is currently ensuring compliance with 10 CFR 830, Section 203?

Regards

Greg Morgan

830.203 Unreviewed safety question process.

(d) The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility must implement the DOE approved USQ procedure in situations where there is a:
(1) Temporary or permanent change in the facility as described in the existing documented safety analysis;
(2) Temporary or permanent change in the procedures as described in the existing documented safety analysis;

From: Chaffee, Gail A
Sent: Tuesday, April 12, 2011 1:36 PM
To: Morgan, Gregory
Subject: RE: USQ in Support of New Water System

Greg,

Attached are the USQs you requested. The DCN for changing the 12 inch line supply line the existing 8 inch loop around 142K was identified during our review as still needing a USQ. This USQ Determination is currently a draft; we are awaiting one more DCN to finish and signoff the USQ then we will also issue our final report (DD-48931). I expect that to be done by the end of this week /first of next week.

Please let me know if you need anything else.

On another note; do you have anything specific you would like on our agenda tomorrow afternoon? I see I have comments from Dennis on the annual but I haven't had a chance to go over them yet. I think the

KOP Pretreatment is complete. We could discuss the CVDF USQ closure package that I will be sending over later next week for your review and approval.

Gail

From: Morgan, Gregory [mailto:Gregory.Morgan@rl.doe.gov]
Sent: Tuesday, April 12, 2011 12:24 PM
To: Chaffee, Gail A
Subject: RE: USQ in Support of New Water System

Thanks, Gail.

Can you provide copies of USQS-0226-2010, 0028-2011, and 0037-2011?

Also, which USQ screening or evaluation is CHPRC relying on for the change from 12 inch fire supply lines to 8 inch lines?

Regards

Greg Morgan

From: Chaffee, Gail A
Sent: Monday, March 28, 2011 3:51 PM
To: Morgan, Gregory
Cc: Koch, Michael R
Subject: USQ in Support of New Water System

Greg,
As we discussed this morning, we are doing a review of all the DCNs, FMPs, and ECR documentation on the new water system to ensure that the appropriate reviews were completed before we actually switch over to the new system. We will document this review in a supporting document. The specific one you had mentioned is related to the change to the existing 8" line versus the 12" line in the original design. Attached is the USQ that I had sent to you initially, however, at the time we were in the process of reviewing and finalizing the USQ and it did not have the second signature.

Please let me know if you need further information or have any other questions.

Gail Chaffee

CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 1 of 12

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
90% Design Review	100K Project	Susan Ousberg Carro; Sam Wajeeh; Adam Moldovan; Richard Larson		376-3202; 373-1830; 373-1757; 373-1834

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date / Organization Manager (optional) (print and sign)	Date / Reviewer/Point of Contact (print and sign) / Author/Originator (print and sign)	Date / Reviewer/Point of Contact (print and sign) / Author/Originator (print and sign)

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
Fire System Design Comments						
1	KBC-42041; Section 2.3.A: Last line should read: "and include an automatic shutdown function as defined...".	Automatic shutdown is allowed by the AHJ if designed in compliance with the code.	Revise to allow automatic shutdown logic in the controller.	Y	Accept. (Pierce)	
2	KBC-42041, Section 2.3.A: Pump controller may monitor damper position and provide the signal for operation, but may not provide electrical power for operation.	NFPA 20 does not allow the fire pump controller to be used to supply power to other equipment.	Revise per comment.	Y	Reject. Per NFPA 20, diesel engine fire pump controllers are permitted to supply power to operate pump room dampers. This is standard industry practice based on discussion with a fire pump system supplier. The procurement specification will be revised to clarify that the dampers involved are for supply of combustion air. (Hagensen)	
3	General: Preferred FACP is: Firelite model MS series.	Fire Systems Maintenance personnel are currently trained on specific FACPs.	Specify preferred FACP in the procurement specification and/or other applicable documentation.	N	Accept. (Golberg)	
4	Calculation 0846401.30-M-002: Analysis demonstrates that minimum fill rate can be achieved. This does not demonstrate	Need to determine the operational capacity of the	Please also calculate maximum and nominal fill r[illegible] day shift, weekday ope[illegible] If fill rate is	Y	Accept. Analysis will be rerun to determine if service water demands can be meet. (Hagensen)	

A-8004-835 (REV 0)

EXHIBIT 59

CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 2 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	operational capacity of the service water system.	system.	significantly affected by PRV-101, provide an assessment of the fill rate that could be achieved by relocating PRV or adjusting setpoint. Please include information (as available) on fluctuation of fill rate throughout the working day based on export water line flow.			
5	Current design does not provide detailed hydraulic analysis inside the fence.	Need to determine operational capacity of the system, and need to sequence operational start-up.	Based on the attached drawing markup (Attachment 1), which provides usage points and flowrates, please provide analysis to demonstrate that service water pump system VFDs/controllers will respond adequately to prevent fire pump actuation during maximum operational demand.	Y	Accept. (Hagensen)	
6	H-1-91185, Sheets 1 through 4: Please revise hydrant locations as shown on the attached drawing markup (Attachment 1).	Drawing markup shows hydrant locations as required by HFD and 100K.	Revise hydrant locations as shown. Please note that locations shown are approximate and are not based on survey information.	Y	Accept. (Conselman)	
7	H-1-91185, Sheet 4: This drawing still shows FW connection to Building 183KE.	This connection is not required for the new system.	Remove connection; show system cap point.	Y	Accept. (Conselman)	
8	H-1-91185, Sheet 9: PIV detail has been provided; PIV locations are not specified.		Provide PIV locations on system layout drawing and/or sections.	Y	Accept. (Conselman)	
9	H-1-91511, Sheet X: 1) Drawing does not call out fire resistance rating of interior wall. 2) Layout requires modification to accommodate service water pumps. 3) If exterior fire pump room double doors are replaced with a roll-up door, an additional man door will be needed.		Please revise drawing as appropriate.	Y	Accept. (Hagensen)	
10	H-1-91512, Sheet 2: Use of emergency		Relocation of PRV-101, or	Y	Accept. A pressure control valve and pressure relief valve will also be	

A-8004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 3 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	fire pump bypass will subject downstream systems (potable and fire water) to pressures significantly in excess of design pressure.		provision of additional PRVs, is required for protection of downstream systems during use of bypass.		installed in the potable water bypass line to limit potable water line pressure (Hagensen).	
11	H-1-91512, Sheet 2: Supply to fire equipment room riser should remain at a minimum of 6 inches. Should further reduction be required, this can be specified by the sprinkler design contractor.	Good engineering practice.	Revise to show reduction as 8x6 rather than 8x2.	Y	Accept. (Hagensen)	
12	H-1-91512, Sheet 2: Fire pump test configuration currently shows test loop and header discharging to the environment. Discharge of water to the environment at 100K requires permitting and therefore can be difficult.	Good engineering practice.	Please provide piping for return of test header to TK-1.	Y	Accept. (Hagensen)	
13	H-1-91512, Sheet 2: Level alarms for overflow protection should be interlocked to fill valve. It is unclear to me from the P&ID whether this is the case.	Good engineering practice.	Please revise or clarify drawing as necessary, or provide instrumentation logic diagram.	Y	Agree, there is an interlock between the LSHH and the overfill valve. The interlock will be described to clarify its function (Garcia).	
14	H-1-91512, Sheet 2: Separate sensing lines and controllers are required for the fire pump and jockey pump. It is unclear to me from the P&ID whether this is the case.	NFPA 20	Please revise or clarify drawing as necessary, and provide detail drawing for fire pump room piping/layout.	Y	Accept. (Hagensen)	
15	H-1-91512, Sheet 2: It is unclear from the existing P&ID whether the fire equipment room riser is supplied from the site main.	Supply should be from the site main.	Please revise or clarify drawing as necessary.	Y	Accept. (Hagensen)	
16	H-1-91512, Sheet 2: Please provide flow meters for the tank supply line (from export water) and the service water discharge (in-line before fire pump). Flow meters should report in some manner that allows comparison of relative flow rates.	Some means of comparing water supply rate to water use rate must be provided in order to ensure water supply.	Some discussion of this issue may be necessary.	Y	Accept. (Garcia)	
17	H-1-91512, Sheet 2: Truck fill stations will require tanks. Site can provide 12,000 gallon elevated tanks for use in this capacity. Attached drawing tankup		Please provide revised design for truck fill stations to include use of an elevated tank.	Y	Accept. (Cousekman)	

A-8004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 4 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	(Attachment 1) shows desired (revised) location of two fill stations. In addition, truck fill stations will require flow into the tanks to be metered in order to ensure that truck filling operations do not disrupt other system demands.					
18	General: Design for fire equipment room sprinkler system/riser and FACP is not included in drawings, or addressed in procurement specifications.		Please address how this design will be provided.	Y	Accept. Will add new section to construction specification that addresses sprinkler system (Pierce).	
19	H-1-91513: Please note that diesel day tank size is dependent upon fire pump horsepower, which has not yet been provided.	NFPA 20	Drawing cannot be approved until maximum fire pump horsepower is confirmed.	Y	Tank is provided by pump supplier per the procurement specification. This allows the supplier to match the tank size to the horsepower of the diesel engine (Pierce).	
20	H-1-91513: Drawing references a detailed piping plan for the fire equipment room, which is not provided in the design package.		Please provide detailed piping plan H-1-X000X when available.	Y	Accept. (Hagensen)	
Microfiltration System/Layout						
21	H-1-91512, Sheet 2; The microfiltration plant must have two air compressors for redundancy or 1 receiver with two compressors in case one air compressor needs to be inactivated for maintenance.	Current design shows one air compressor.	Please revise drawing to show two air compressors.	Y	Accept. The subject drawing and KBC-42002 will be revised to incorporate an additional compressor system. The additional compressor system will be an exact duplicate to ensure benefits of standardization. The additional compressor will be an installed spare. (Ashley)	
22	H-1-91512, Sheets 4 & 6; This drawing needs to show a 2-inch bypass line connected to another static mixer for redundancy.	Current design shows only one static mixer.	Please revise drawing with requested addition.	Y	Accept. Parallel static mixers with manual valving will be shown on the subject drawing sheets (2 locations). (Ashley)	
23	H-1-91512, Sheets 4; This drawing needs to show a check valve upstream of the duplex filter, prior to sodium hypochlorite injection	Current design does not show a check valve to prevent potential backflow	Please revise drawing with requested addition.	Y	Accepted with Comment. Check valves which protect the water supply are already provided. Please see H-1-91512, Sheets 2 and 3.	

A-6004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 5 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
		into the duplex filter.			However, it is considered probable that the duplex filter elements will be constructed of stainless steel mesh. A check valve will be added in the recommended location to preclude exposure of the filter elements to chlorides. (Ashley)	
24	H-1-91512, Sheets 5; This drawing needs to show flow totalizer on the 4-inch line to the 2,500 gallon waste water cistern.	Current design does not show a flow meter.	Please revise drawing with requested addition.	Y	Accept. A flow indicating totalizer will be installed on the discharge piping from the CIP neutralization skid to the drain. (Ashley)	
25	H-1-91512, Sheet 6; Need to show proper PLC connections to controllers for the 12,000 gallon storage tank (TK-CW-1).	Current design does not show proper PLC connection.	Please revise drawing with requested addition.	Y	Accept (Garcia).	
26	H-1-91512, Sheet 6; Please indicate (via note or separate drawing) access (manway) on poly tanks (pre/post settling tanks and storage tank).	Current design does not indicate connection.	Please revise drawing with requested addition.	Y	Accept. The pre/post tanks are equipped with a 16 inch manway on the top; the storage tank is equipped with a 24 inch manway on the top. Furthermore the tanks will be equipped with drains on the bottom to facilitate removal of settled solids, if any. Discussion with cognizant CHPRC personnel indicate that these attributes are sufficient for the tank maintenance anticipated. Appropriate notes will be added to the drawing. (Ashley)	
27	H-1-91513, Sheet 1; This drawing does not show eyewash stations with tempered water, chemical storage area with separate storage sumps, lab work area, and reagent storage for daily testing.	Current design does not show aforementioned areas.	Please revise drawing with requested additions.	Y	Accept. The drawing will be revised to show safety shower/eyewash station(s), using tempered water, 2 work stations with water and sinks, and "floor level" reagent storage area(s) with appropriate sumps. (Ashley)	
28	H-1-91513, Sheet 1; This drawing needs to show that penetrations into the tank are accessible for maintenance purposes.	It is not clear if current design allows for easy access for tank	Please revise drawing with requested addition.	Y	Accept. The tank penetrations will be specified in the Construction Specification, and shown on applicable mechanical drawings.	

A-6004-836 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 6 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
		maintenance.			Please note that the level instrumentation on the poly tanks will be located on "flats" at the outboard edge of the tank top. (Ashley)	
29	H-1-91513, Sheet 1; This drawing needs to show sinks at locations where water quality testing will take place.	Current design does not show sinks.	Please revise drawing with requested addition.	Y	Accept. See Response to Comment 27. (Ashley)	
30	H-1-91513, Sheet 1; The detail drawings for the fire pump room piping plan, contact pipe assembly and pipe assembly for potable water connection was not provided.	Current plan set provided for 90% review did not include the aforementioned drawings.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
31	H-1-91513, Sheet 1; Please indicate a roll-up door at the exterior wall of the fire pump room to allow for maintenance and pump removal.	Current design does not show roll-up door at aforementioned location.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
32	H-1-91513, Sheet 1; Please add service water pumps (rated at 1500 GPM) to fire pump room.	Current design does not show service water pumps.	Please revise drawing with requested additions.	Y	Accept. (Hagensen)	
33	H-1-91513, Sheet 1; This drawing needs to show water spigots (3/4 -inch) for water quality testing, make-up water for chemical dilutions, and a 11/2 inch camlock used to fill 500 gallon water trailer.	It is not clear if current design includes aforementioned items.	Please revise drawing with requested addition.	Y	Accept. Specified water spigots will be shown on subject drawing. (Ashley)	
34	H-1-91513, Sheet 1; A ventilation system (1 cfm per 1 sf of area) must be added to the chemical storage area (area used to store the acid, caustic, chlorine solution and coagulant).	Current design does not show service a ventilation system nor does it show a chemical storage area.	Please revise drawing with requested addition.	Y	Accept. Per discussion with cognizant CHPRC personnel, the facility "ventilation system" will consist of 3-4 unit heaters, and exhaust fans. Air cooling, or other conditioning is not required. Building is to be insulated with typical "standard" insulation. (Ashley)	

A-8004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 7 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
35	H-1-91513, Sheet 1; For all areas with roll-up doors proposed, please ensure that opening is appropriately sized for the placement and removal of the large pieces of equipment needed.	Current design does not show dimensions of roll-up doors at aforementioned location.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
36	H-1-91512; Sheet 7; This drawing indicates that the solution used for pH testing will be discharged to the 2,500 gallon waste water cistern. The solution after pH testing can be discharged into the drain trench for the recycle sump.	The P&ID should replace the pH with Chlorine.	Please revise drawing.	Y	Accept. Drawing will be revised accordingly. (Ashley)	
37	H-1-91186, Sheet 2; This drawing needs to show that the effluent tank has a high low level alarm and high high level alarm to indicate when contents need to be pumped out. Also, need to have an adequately sized sump pump to discharge into vacuum truck.	Current design does not show any indicators to the effluent tank nor does it show a sump pump.	Please revise drawing with requested addition.	Y	Accept with Comment. Subject alarms are shown on Sheet 7. A sump pump will be added (local control). (Ashley)	
38	H-1-91513, Sheet 1; In the fire pump room, this drawing needs to show a berm around the inside day tank and the outside main fuel tank.	It is not clear if current design includes aforementioned.	Please revise drawing with requested addition.	Y	Accept. (Hagensen)	
39	H-1-91506, Sheet 1; Please revise drawing to allow for a spigot to be in close proximity of the 500 gallon water trailer for better accessibility when filling is required.	It is not clear if current design includes aforementioned.	Please revise drawing with requested addition.	Y	Accept. Two (2) 1 ½ inch camlock water spigots will be located in the corner of the building near the water trailer – one internal to the building, one external. (Ashley)	

General Comments – Civil Site Plan/Layout and Design

A-6004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 8 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
40	H-1-91183, Sheet 1; Please revise import water line routing per our discussions (it was agreed that a portion of the proposed 8-inch line would pass through a small portion of old growth sage brush on the east side of our tie-in point to reduce pipe length).	90% design does not currently reflect the change in routing.	Please revise drawing addressing the comment.	Y	CHIP	
41	H-1-91506, Sheet 1; This drawing needs to be modified to clearly show that sufficient lighting is provided for all areas, including work areas and safety showers located within the pre-engineered building structure. Need to also show exterior lighting for entryways.	It is not clear if current design includes aforementioned	Please revise drawing with requested addition.	Y	Accept. (Ashley)	
42	H-1-91506, Sheet 1; This drawing needs to show heaters spaced around the inside of the building to keep equipment at required temperature during periods of freezing temperatures.	Current design does not show any heaters within the building.	Please revise drawing with requested addition.	Y	Accept. 3-4 unit heaters will be added/shown. From an equipment perspective building temperature must be maintained between 35 and 98 °F. (Ashley)	
43	Site plans need to show layout of building and walkways to office trailers.	The plans provided do not show walkways.	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
44	H-1-91184, Sheet 1; Per our earlier discussions, a new gate valve located downstream of the existing 8-inch gate valve (STA 80+98) was to be installed. The detail provided on H-14-91185-5 does not reflect installation of the new valve	Current design does not show new valves being installed on the 8-inch export line to 100K Area.	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
45	H-1-91513, Sheet 1; This drawing needs to show exhaust ventilation & exhaust outlet for the chemical storage room and fire pump room.	Current design does not show venting or exhaust location needed to make sure workers are protected.	Please revise drawing with requested addition.	Y	Accept. (Hagenson)	

A-8004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 9 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
46	H-1-91513, Sheet 1; This drawing needs to show separate storage sumps (50-100 gallon) for each chemical to be used onsite in case the 55 gallon drums containing the chemical leaks. The sump should be able to be vacuumed out when needed. This should apply to the chemical storage area as well as the chemical feed tank area.	Current design does not show individual containment areas in case of chemical leakage.	Please revise drawing with requested addition.	Y	Accept. Sumps will be shown for reagent storage and feed tank areas. (Ashley)	
47	Need to have emergency lighting in case power goes out.	It is not clear if current design includes aforementioned	Please revise drawing with requested addition.	Y	Accept. Refer to H-1-91506. (Golberg)	
48	Exterior site grading and concrete pad slope not shown on the drawings.	Current design does not show site grading and concrete pad slope.	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
49	Need storm gutters to direct water away from entryways.	It is not clear if current design includes aforementioned	Please revise drawing with requested addition.	Y	Accept. (Conselman)	
Construction Specification For 100-K Water Line And Filtration						
50	Section 02220, Part 1, 1.1C.; Reference is made to Fluor Hanford document HNF-23100, "Occupational Safety, and Health (OS&H) Program Manual"	The document referenced is outdated and should be reflective of new CHPRC contract.	Please replace reference with PRC-PRO-SH-32219," 10 CFR 851 CHPRC Worker Safety and Health Program Description", PRC-PRO-SH-40078, "Contractor Safety Processes", and Special Provisions SP-5	Y	Accept. (Conselman)	
51	Section 02235, Part 1, 1.1C.; Reference is made to Fluor Hanford document HNF-23100, "Occupational Safety, and Health (OS&H) Program Manual"	The document referenced is outdated and should be reflective of new CHPRC contract.	Please replace reference with PRC-PRO-SH-32219," 10 CFR 851 CHPRC Worker Safety and Health Program Description", PRC-PRO-SH-40078, "Contractor Safety Processes", and Special Provisions SP-5.	Y	Accept. (Conselman)	

A-8004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 10 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
52	Section 09900, Part 1, 1.1A.; Reference is made to Fluor Hanford document HNF-23100, "Occupational Safety, and Health (OS&H) Program Manual"	The document referenced is outdated and should be reflective of new CHPRC contract.	Please replace reference with PRC-PRO-SH-32219," 10 CFR 851 CHPRC Worker Safety and Health Program Description", PRC-PRO-SH-40078, "Contractor Safety Processes", and Special Provisions SP-5.	Y	Accept. (Conselman)	
53	Section 13125, Part 1, 1.2A.1.; The building dimensions along with eave height will need to be modified ("Nominal 60-ft long by 40-ft wide by 20-ft eave height").	The dimensions for the pre-engineered metal building housing the microfiltration plant, fire pump and other ancillary pieces of equipment needs to reflect the design drawings.	Please replace requirement with: "Nominal 100-ft long by 50-ft wide by 20-ft eave height"	Y	Accept. (Conselman)	
54	Section 13125, Part 1, 1.6.B, Table 1-1 Design Criteria. The seismic design parameters are not correct (Sds = 0.588, Sd1= 0.192, I=1.5).	The seismic criteria verified by CHPRC subject matter experts require less stringent values.	Please replace the seismic design parameters with the following: S = 0.370, Sd1= 0.163, I=1.1	Y	Partially Accept. Values currently in specification are standard and bounding. (Conselman)	
55	Section 13125, Part 2, 2.8.B.1, "Provide one (1) 16-ft wide by 14-ft high roll up coiling door in the water treatment building. Locate the approach pads as shown in the sketches. Top of ....."	CHPRC will need three roll-up doors for the fire pump room, main area for tank maintenance, and a roll-up door for the chemical storage area. Height of roll-up door mentioned should be at minimum 20 ft and width of 15 ft.	Please revise the sentence to state the following: "Provide one (1) 20-ft wide by 15-ft high roll up coiling door, one (1) 20-ft wide by 10-ft high roll up coiling door, and one (1) 15-ft wide by 10-ft high roll up coiling door in the water treatment building....."	Y	Accept. (Conselman)	
56	Section 15130, Attachment 1 Data Sheets; The following pumps do not have any design data associated with them (labeled	Need information to finalize design.	Please revise specification to include pump design data.	Y	Accept. (Pierce)	

A-6004-835 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 11 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
	"TBD"): Circulation pump, P-CO-1, P-CO-2, P-PC-1, P-RBC-1 (only design capacity provided), and P-RBC-2 (only design capacity provided).					
57	Construction Specification, Section 02650: Fire protection equipment should be required to be UL listed for fire protection service where applicable.		Revise as necessary.	Y	Accept. (Conselman)	
58	Construction Specification, Section 02650: For installation of fire protection equipment, please add a section comparable to 13125-3 §1.5 to specify required qualification and experience.			Y	Accept. (Conselman)	
59	Construction Specification, Section 13125: Revise building dimensions as necessary to accommodate service water pumps.		Revise as necessary. Building plan drawings should also be revised for consistency.	Y	Accept. (Hagemann)	
60	Construction Specification, Section 02650: 1. Please add AWWA C605, "Underground Installation of PVC Pressure Pipe and Fittings for Water" to §1.1.C and §3.1.C. 2. Please add to §3.1.M: "Pumper connection centered 1 ft 6 inches to 1 ft 10 inches above finished grade."		Revise as requested.	Y	Accept. (Conselman)	
Procurement Specification for Water Storage Tank						
61	Page 1, 1.1A; "The specification establishes the requirements for the contractor's design, fabrication and installation of a 650,000 gallon, 50-foot minimum diameter water storage tank....."	Incorrect volume indicated on specification	It is agreed that the intent is to provide specification for the design, fabrication and installation of a 750,000 gallon water storage tank. Please revise the description in the procurement specification.	Y	Partially accepted. The specification will be reworded to clarify that 650,000 gallons is the working capacity (per the Functional Design Criteria), but the overall volume including head space is to be determined by the vendor. (Pierce)	
Procurement Specifications for Fire Pumps						

A-8004-035 (REV 0)

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CRPRC - REVIEW COMMENT RECORD (RCR)	1. Date 10/23/2009	2. Review No.
	3. Project No.	Page 12 of 12

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if NOT accepted)	16. Status
62	Page 1, Part 1, 1.1B.; Reference is made to "nickel-metal hydried" batteries for engine start..	Typographical error	Please replace nickel-metal hydried with nickel-metal hydride.	Y	Accept (Golberg).	

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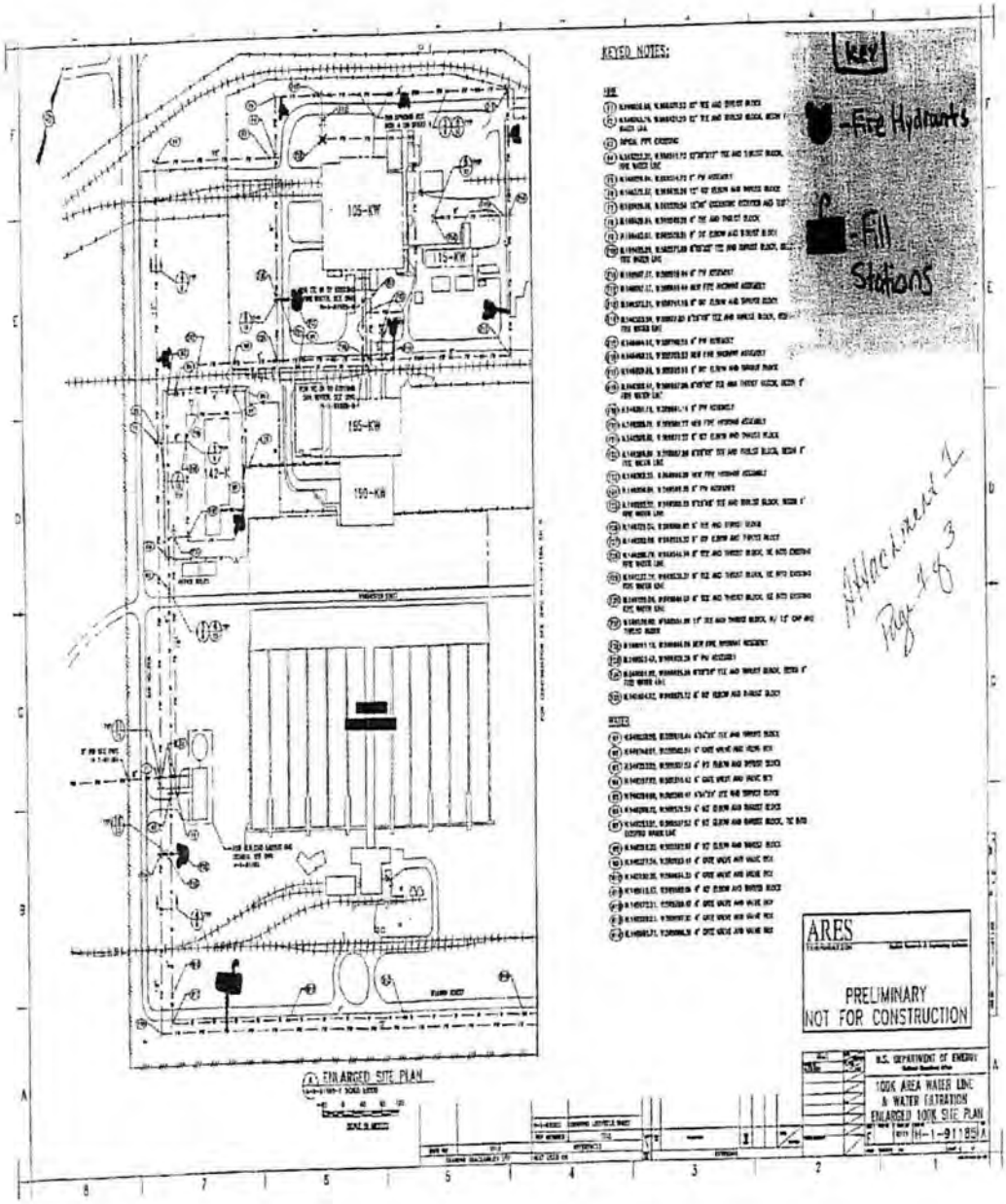
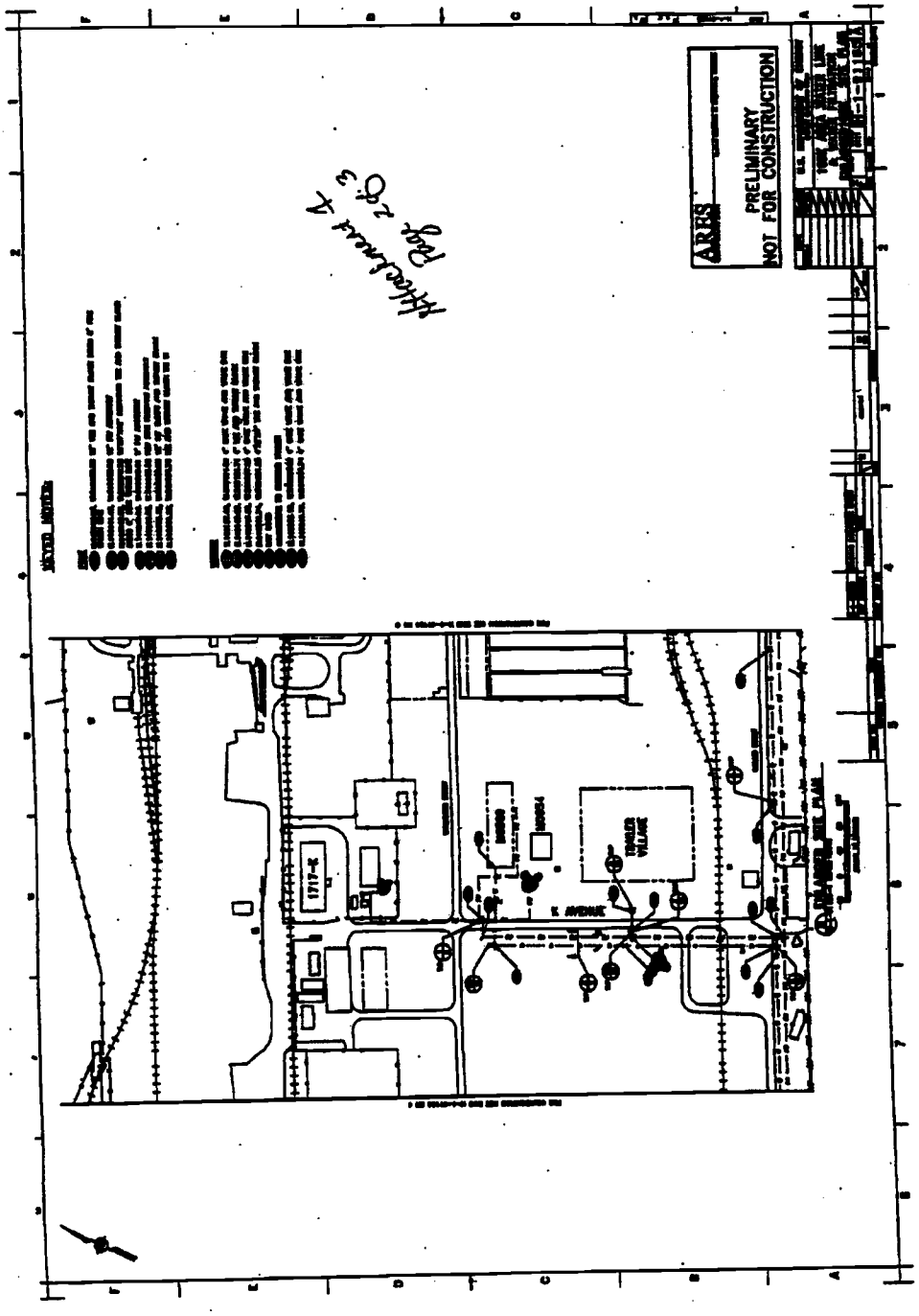
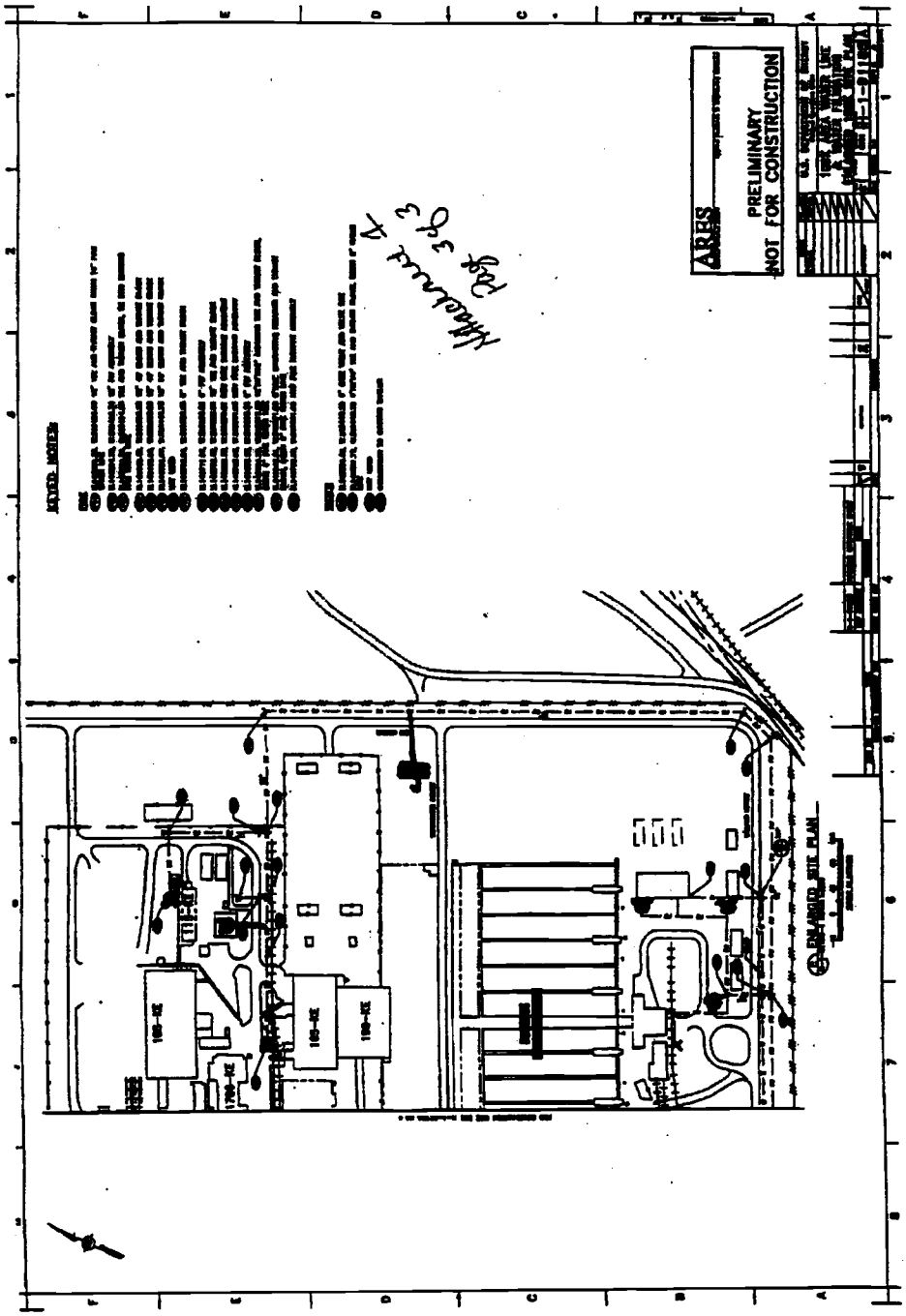
A-8004-835 (REV 0)


KEYED NOTES:
KEY
-Fire Hydrants
-Fill Stations
105-KW
115-KW
165-KW
150-KW
142-K
Attachment 1
Page 43
ARES
PRELIMINARY
NOT FOR CONSTRUCTION
U.S. DEPARTMENT OF ENERGY
100K AREA WATER LINE
& WATER EXTRATION
ENLARGED 100K SITE PLAN
H-1-91185A
ENLARGED SITE PLAN



Attachment 4
Page 2 of 3



Attachment 4
Page 370

EXHIBIT 60

CHPRC CONDITION REPORT FORM

Status: Closed CR NUMBER: CR-2010-2597

Issue Identification and Processing

Initiator:	Initiating Document:	Date Identified:
Omberg Carro, Susan K		8/24/2010

Title of Issue:
Installation of Fire Suppression System Without Required Design Approval

Description of Issue:
On Tuesday, August 24th, 2010, the 100K Fire Protection Engineer was notified by facilities operations personnel that the scope of work for the day for the 100K new water treatment facility was to include installation of the fire suppression system. The design for this system has significant comments still outstanding from 100K Fire Protection Engineering, and has not been reviewed and approved by the Fire Marshal's Office. A walk down of the facility showed that significant additional changes to the system design were being made in the field; neither Fire Protection Engineering nor 100K Project Engineering was cognizant of these changes.

Requirements Not Met: (Orders, Requirements, Procedures)
CRD 420.1B, Supplemented Rev. 4, Section D.3 requires that facility design and construction comply with the DOE Fire Protection Handbook, Hanford Chapter. Section E.1.d.2 provides the Hanford Fire Marshal the authority to review and approve site construction documents and shop drawings for new construction. HNF-36174, DOE Fire Protection Handbook - Hanford Chapter, Section 4.1.5, requires that fire suppression system drawings be approved by the Hanford Fire Marshal's Office prior to installation. MSC-RD-9118, Fire Protection Design/Operations Criteria, Section 2.1.11, states that documents for new designs affecting fire protection or fire code compliance must be reviewed and approved by the Hanford Fire Marshal's Office.

Responsible Project/Program:
D & D

Date Submitted:
8/24/2010

Other Related Documents:
HNF-36174, DOE Fire Protection Handbook; MSC-RD-9118, Fire Protection Design/Operations Criteria

Immediate Action(s) Taken:
The EPC construction manager was notified that the design for the system being installed was not approved for installation, and that the design as previously submitted was apparently being altered in the field to an unacceptable extent. The EPC construction manager was advised that installation activities should cease until after the revised design was resubmitted and approved by both CHPRC Fire Protection Engineering and the Fire Marshal's Office.

Recommended Corrective Actions:
Project shall obtain a revised design from the subcontractor, and submit such design for review and approval as required. Work shall not recommence until after approval of the revised design. The prime contractor shall submit a formal corrective action plan that states how they intend to prevent similar violations in the future.

Initiator Comments:
Stephen R. Douglass

Associated Files
Approval-to-screen-out.htm

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure

Significance Level:	Date Submitted to Responsible Manager:	Date CAP was approved by Responsible Manager/Delegate:
Screened-Out	10/28/2010 - Edington, Max L	

☒ ORPS ☐ Compliance Determination ☐ NTS

PAAA Compliance Determination Number:
CHPRC-PAAA-2010-0741

Significant Level Justification: Sent back from Assignment by Edington, Max L. Responsible manager. Please screen out this CR to CR-2010-3049. Although submitted a month apart both CRs represent the exact same condition and screened at the same level as adverse. This condition was rescreened from an adverse condition to a screen out at the request of the responsible manager per above justification. CR-2010-3049 is screened as adverse will document the apparent cause analysis and correct actions to address this condition. PLH	
Assigned To: Olsen, Rae Ann	**Date Assigned:** 9/14/2010
Extent of Conditions:	
Causal Analysis Method Used:	**Analysis Completion Date:**
Analysis Results:	
Trend Codes:	
Cause Codes:	
PAAA/851 Citations: 830.122(e)(1)	
ISMS:	

Record Authentication	
Authenticated By: Kelley, Judy H	**Date Authenticated:** 11/3/2010

EXHIBIT 61

CHPRC CONDITION REPORT FORM

Status: Closed CR NUMBER: CR-2010-3049

Issue Identification and Processing

Initiator:	Initiating Document:	Date Identified:
Eide, Don	SAC-2010-1169	9/29/2010

Title of Issue:
100K - Fire Suppression System Field Work Stop Work (ARRA): SAC- 2010-1169

Description of Issue:
100K Senior Mgmt issued a Field Work Stop Work on the 100K Fire Suppression System Upgrade pending a comprehensive Design Document review and approval.

Requirements Not Met: (Orders, Requirements, Procedures)	Responsible Project/Program:
N/A	D & D
Date Submitted: 9/29/2010	**Other Related Documents:**

Immediate Action(s) Taken:
Stop Work initiated

Recommended Corrective Actions:

Initiator Comments:
Responsible Manager is Max Edington
Suggested screening is TUF

Associated Files
Files are available through IDMS

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure

Significance Level:	Date Submitted to Responsible Manager:	Date CAP was approved by Responsible Manager/Delegate:
Adverse	9/29/2010 - Edington, Max L	11/10/2010 - Eide, Don

☐ ORPS ☐ Compliance Determination ☐ NTS

Significant Level Justification:
Screened As Adverse.

The CR documents the implementation of a Stop Work of field work on the upgrades to the 100K Fire Suppression System upgrade pending a design document review that it would seem should have been done prior to starting the work. This is considered an adverse impact to the operation of the project, and further analysis is warranted.

This will necessitate an apparent cause at a minimum, and the completion of an extent of condition review in accordance with appendix B of PRC-PRO-QA-052.

DBW

Assigned To:	Date Assigned:
Alaconis, Walter	10/28/2010

Extent of Conditions:
This condition was caused by an oversight in the BTR procedure PRC-PRO-AC-186. The oversight deals with the interface with the Hanford Fire Marshal and design reviews. Other portions of the D&D Project are not affected by this oversight but other CHPRC projects could be. Corrective Action #3 will address this oversight.

Causal Analysis Method Used:	Analysis Completion Date:
Apparent	11/10/2010

Analysis Results:
Review the attached file, 110k Fire Suppression Stop Work ACA, for the details of this analysis. Beginning the week of October 18, 2010 an Apparent Cause Analysis was conducted over several days involving the Project Manager (CHPRC D&D), Construction Manager (CHPRC EPC), Project Design Authority Engineer (CHPRC D&D), 100 K Area Deputy Fire Marshal (FFS) and D&D Technical Support (CHPRC D&D). Interviews were

concluded on November 5, 2010 and the attached file was written to document the results.

Trend Codes:
OP08 - Chapter 8, Control of Equipment and System Status
EN04 - Design Documentation/Specification
MS10 - ISM –Management Review

Cause Codes:
A1B3C01 - Design / documentation not complete
A5B2C08 - Incomplete / situation not covered

PAAA/851 Citations:

ISMS:
CF-D - Perform Work within Controls
CF-E - Provide Feedback and Continuous Improvement

Corrective Action Items

Action #:	Actionee:
1	Deleyos, Bing

Action Statement:
Identify which Fire Marshal approval is required and transmit information to Construction Manager.

Due Date: 12/31/2010

Closure Requirements:
Closure statement indicating action taken and date completed. Attach a copy of the correspondence that notified the Construction Manager.

Action Taken:
DRAFT document from the Hanford Fire Marshal, indicating approvals required, was transmitted by FPE to CM via e-mail on 12/21/10.

E-mail of correspondence and the file attached to e-mail were uploaded to this CRRS item.

Completed Date: 12/21/2010

Action Approved By: Alaconis, Walter

Action Approval Date: 12/27/2010

Action #:	Actionee:
2	Koch, Michael R

Action Statement:
Obtain clarification on the authority of the Deputy Fire Marshal role. Note: MSA currently has draft document in DOE-RL for review and approval.

Due Date: 4/27/2011

Closure Requirements:
Closure statement indicating actions taken and date completed. Attach a copy of the final documentation that clarifies the Deputy Fire Marshal's role.

Action Taken:
The CR-2010-3049 CA#2 was to obtain clarification on the authority of the Deputy Fire Marshal role, this action is being closed with the submittal of a draft copy of DOE O 420.1B SCRD, Rev 4 required by CR-2010-3375 CR#2. Information regarding Deputy Fire Marshal duties is contained in the draft.

CR-2010-3375 CR#2 which needs "Update the status of revised Fire Protection Program procedures for inclusion of roles and responsibilities of the Site Fire Marshal, the Fire Marshal's Office, Deputy Fire Marshals and Fire Protection Engineers to reflect changes to the DOE O 420.1B SCRD, Rev 4 (new Rev 5)" satisfies the intent of CR-2010-3049 CA#2.

CR-2010-3375 CR#2 is scheduled to be completed by 9/30/2011.

Summary:
CR-2010-3049 CA#2 is being closed because it is the identical action as CR-2010-3375 CR#2 being performed by the DFM office.

Completed Date: 4/27/2011

Action Approved By:	Action Approval Date:
Eide, Don	4/27/2011

Action #:	Actionee:
3	Taylor, Michael L

Action Statement:	Due Date:
Reconcile the MSA and CHPRC procedures so the approval requirements are clearly identified in the PRC-PRO-AC-186 Procedure	1/31/2011

Closure Requirements:

Closure statement indicating actions taken and date completed. Attach a copy of the revised approved procedure to this Condition Report.

Action Taken:

PRC-PRO-AC-123 governs the preparation of requisitions by the requesting organization.
PRO-123 includes numerous references for requestors to include supporting organizations in the preparation and approval of procurement-related documents. Section 2.2.3 for example describing BTR responsibilities:

Obtain and incorporate all project and functional support organization assistance, input and approvals in order to ensure that complete and adequate acquisition documentation is provided to the procurement organization and the contractor.

PRO-123 also requires the use of ATTACHMENT 5 Functional & Procurement Concurrence Checklist to for BTRs to determine when supporting organizations –including Fire Protection should be involved with the preparation and approval of SOWs. Included is a reference to the CHPRC Fire Protection Engineer. Instruction 4 for example and one of the many references to Fire Protection are copied below

4. When any of the questions/topics in the checklist are marked as "YES" applicable –then insert the name of the SME who provided feedback for the applicable sections and obtain concurrence/authorization to proceed on the SOW or applicable documents.
Does this affect the following? Safety, environmental, and quality requirements or established envelopes Emergency response procedures Emergency equipment Safety or Fire Protection equipment -

PRC-PRO-AC-186 Statements of Work, describes the process and includes templates for the preparation of Statements of work. PRO-186 and the referenced templates include numerous references to identification of hazards and inclusion of supporting organizations in making sure SOWs and the resulting contract completely address hazards. Section 3.3.6 specifically addresses fire protection engineering:

When procuring services that involve any activity listed in Sections 2.2 and 2.3 of HNF-PRO-8589, Hanford Fire Marshal Permits, contact the Fire Prevention organization to determine whether a Hanford Fire Marshal Permit is required. Document as applicable in the SOW. Similarly, if any Fire Protection design features, egress, combustibles, protection systems will be potentially impacted by Contractor activities, coordinate requirements with the Project Fire Protection Engineer

Section 4.8 of the Hazardous SOW template modified to include the following language.
A. When the contract includes significant design or construction activities or any items that require a fire protection/code interpretation the Deputy Fire Marshal for the facility shall be contacted for interpretation and required permits in accordance with MSC-RD-8589, Hanford Fire Permits.

Procurement procedures and guidance clearly direct requestors and BTRs to the cognizant CHPRC subject matter expert or point of contact. The

Completed Date: 12/17/2010

CHPRC SME is the responsible representation for the CHPRC to external organizations and outside agencies.	
Action Approved By: Eide, Don	**Action Approval Date:** 1/31/2011

Action #: 4	**Actionee:** Douglass, Stephen
Action Statement: Per the requirements of MSC-RD-9118, Section 2.1.1, obtain the approval and permit of the Hanford Fire Marshal's Office (reference OA33896 Finding #1).	**Due Date:** 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of permit issued by the Fire Marshal's office.	
Action Taken: Per the requirements of MSC-RD-9118 Section 2.1.1 requested and obtained the required Fire Marshal Permits (9 Total). See attached file titled FireMarshalPermits	**Completed Date:** 12/16/2010
Action Approved By: Alaconis, Walter	**Action Approval Date:** 12/16/2010

Action #: 5	**Actionee:** Douglass, Stephen
Action Statement: Per the requirements of MSC-RD-9717 Section 2.1.2 complete a Hanford Fire Department Construction/Demolition Fire Safety Inspection Checklist, Siteform A-6002-692, (reference OA33896 Finding #2).	**Due Date:** 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach a completed copy of the approved checklist.	
Action Taken: Per the requirements of MSC-RD-9717 Section 2.1.2 a Contractor Fire Plan Request was prepared and submitted to the Hanford Fire Department. See attached file named "Contractor pre-fire plan request" Per the requirements of MSC-RD-9717 Section 2.1.3 a Construction/Demolition Fire Safety Inspection Checklist was prepared and submitted to the Hanford Fire Department. See attached file named "Construction/Demolition Fire Safety Inspection Checklist"	**Completed Date:** 12/16/2010
Action Approved By: Alaconis, Walter	**Action Approval Date:** 12/16/2010

Action #: 6	**Actionee:** Edington, Max L
Action Statement: Complete review of actions taken and lift Stop Work on the Supply portion after Fire Marshal approval has been obtained	**Due Date:** 2/7/2011
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of the signed DCN.	
Action Taken: Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the supply portion for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached file DCN-KUP-163)	**Completed Date:** 2/8/2011

Action Approved By:	Action Approval Date:
Eide, Don	2/9/2011

Action #:	Actionee:
7	Edington, Max L

Action Statement:	Due Date:
Complete review of actions taken and lift Stop Work on the Sprinkler portion after Fire Marshal approval has been obtained.	12/16/2010

Closure Requirements:
Closure statement indicating actions taken and date completed. Attach copy of signed DCN.

Action Taken:	Completed Date:
Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the sprinkler system for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached file WTFSprinklerSubmittal.pdf).	12/16/2010

Action Approved By:	Action Approval Date:
Eide, Don	12/16/2010

Action #:	Actionee:
8	Edington, Max L

Action Statement:	Due Date:
Complete review of actions taken and lift Stop Work on the Detection/Alarm portion after Fire Marshal approval has been obtained.	12/16/2010

Closure Requirements:
Closure statement indicating actions taken and date completed. Attach copy of signed DCN.

Action Taken:	Completed Date:
In coordination with consultant fire protection engineer, design-build contractor, and the Deputy Fire Marshal, the 100K Infrastructure project has re-designed the fire alarm system for the new 100K water treatment facility. The attached DCN (WTFFireAlarmDCN.pdf) has been approved by the Deputy Fire Marshal.	12/16/2010

Action Approved By:	Action Approval Date:
Edington, Max L	12/16/2010

Action #:	Actionee:
9	Edington, Max L

Action Statement:	Due Date:
Complete review of actions taken and lift Stop Work on the Distribution portion after Fire Marshal approval has been obtained.	2/7/2011

Closure Requirements:
Closure statement indicating actions taken and date completed. Attach copy of signed DCN.

Action Taken:	Completed Date:
Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the distribution system for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached files DCN-KUP-153.pdf and DCN-KUP-091.pdf	2/8/2011

Action Approved By:	Action Approval Date:
Edington, Max L	2/8/2011

Action #:	Actionee:
10	Edington, Max L

Action Statement:	Due Date:

Complete review of actions taken and lift Stop Work on the Fire Pump portion after Fire Marshal approval has been obtained.	2/7/2011
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of signed DCN.	
Action Taken: Working with Deputy Fire Marshal, the 100K Infrastructure Project, fire protection engineering consultant, and design-build contractor have redesigned the fire pump portion for the new 100K water treatment facility. A DCN approved by the Deputy Fire Marshal is attached. (See Attached file SUB15300-01V10.pdf)	**Completed Date:** 2/8/2011
Action Approved By: Eide, Don	**Action Approval Date:** 2/9/2011

Action #: 11	**Actionee:** Edington, Max L
Action Statement: Complete review of actions taken and lift Stop Work on the Fire Wall portion after Fire Marshal approval has been obtained.	**Due Date:** 12/16/2010
Closure Requirements: Closure statement indicating actions taken and date completed. Attach copy of signed DCN.	
Action Taken: In coordination with the consultant fire protection engineer, the Deputy fire Marshal, and the design-build contractor, the 100K Infrastructure project has re-designed the fire walls for the new 100K water treatment facility. The attached contractor submittal (WTFFireWallSubmittal.pdf) has been approved by the Deputy Fire Marshal.	**Completed Date:** 12/16/2010
Action Approved By: Edington, Max L	**Action Approval Date:** 12/16/2010

Record Authentication	
Authenticated By: Mitcheltree, Brian	**Date Authenticated:** 4/28/2011

CHPRC CONTRACTOR DOCUMENT SUBMITTAL FORM

ORIGINAL

(1) PROJECT NO.	(2) CONTRACT NO./RELEASE NO.	(3) SUBMITTAL REGISTER NO.	(4) VERSION	(5) DATE PREPARED
100K Potable Water Treatment Facility	Contract No. 36534 / Release No. 031	13125-02	03	8-30-2010

(6) CONTRACTOR: George A. Grant, Inc.
1333 Gillespie, Richland, WA 99352

SIGNATURE Tim Doyea DATE: 8-30-2010

(7) TO: PROJECT RECORDS SPECIALIST MSIN: E6-16 Phone: 509-376-6290

RECEIVED BY E-mail: FAX: 509- -

PROJECT RECORDS SPECIALIST: LISA SMYSER DATE: 08/31/2010

(8) QTY/E	(9) DOCUMENT NUMBER	(10) REV	(11) No. of pgs	(12) FORMAT (DWG, MFC, P3, GEN, PDF)	(13) TITLE / DESCRIPTION	(14) APPROVAL TYPE (AP, APW)	(15) ASSOCIATED SPEC OR SOW REF. NO.	(16) CHPRC REVIEW STATUS A	B - NO	B - YES	C
1	13125-02 Ver. 3	0	8	DWG	Stamped Structural & Architectural Drawings, Plans & Details	APW	SOW 1.4(B)				X

(17) SUBCONTRACTOR REMARKS (If this is a re-submittal to a previously approved submittal then explain why it is being re-submitted here.)

(18) REVIEWER DISTRIBUTION (HARD OR ELECTRONIC)

NAME	NAME	NAME

(19) CHPRC DOCUMENT APPROVER(S)	(20) DUE DATE BACK TO APPROVER(S)	(21) DUE DATE TO CONTRACTOR
SAM WAJEEH per email 9/7/10	09/06/2010	09/07/2010

(22) SUMMARY OF COMMENTS (IF ANY) SEE ATTACHED COMMENTS...

(23) BTR CONCURRENCE/APPROVAL: (NAME / SIGNATURE / DATE)
STEVE DOUGLASS per email 9/22/10

(24) PROJECT RECORDS SPECIALIST: [ ] Submittal Version Complete [ ] Partial Complete

PROJECT RECORDS SPECIALIST: LISA SMYSER DATE: 09/24/2010

(25) SUBMITTAL FORMAT: (USED IN BLOCK 12)
- DWG = AutoCad
- GEN = Contractor's Format
- MFC = Microsoft Format Compatible
- P3 = Primavera Schedule
- PDF = Adobe Acrobat (Portable Document Format)
- HC = Hard Copy

(26) SUBMITTAL APPROVAL TYPE: (USED IN BLOCK 14)
- APW = Approval Required Prior to Work
- AP = Approval Required

(27) SUBMITTAL REVIEW STATUS: (USED IN BLOCK 16)
- A Conforms to the Contract Requirements
- B NO-No resubmit. Minor Comments. Approved with exceptions as corrected.
- B YES-Resubmit. Minor Comments. Approved to proceed; however resubmittal is required.
- C Revise and Resubmit

A-6004-757 (REV 2)

EXHIBIT 62

From: Wajeeh, Usama E
To: Smyser, Lisa A
Subject: C - Revise and Resubmit: Contract No. 36534-031, SUB 13125-02 V3, STAMPED STRUCTURAL & ARCHITECTURAL DWGS, Status: ""Out For Review""
Date: Tuesday, September 07, 2010 2:45:42 PM

Please see attached comments from Fire Protection below. Sam

I reviewed these drawings and have a few comments additionally:

1 – Rooms 102-105 show 10 ft high ceilings but there is no detail which shows a fire rating, the wall type 2 detail on sheet 2 looks like it may have been intended to meet a UL - p516 or the 2 hour version of it but this should be clarified.
2 – The 1 and 2 hour wall assembly listing UL - U465 and U412 show the walls going all the way to the roof. According to the drawing these walls surround rooms 102-105 therefore all these walls should already go to the ceiling. I'm not sure this is what I saw on the walkdown (they may not have been completed yet). This would also imply that given this and the 10' ceiling the unheated space above the ceiling issue needs to be addressed. You could potentially make the case that the walls should only go to the lower ceiling eliminated the unheated inaccessible space above the rooms but this needs to be addressed in the plan.
3 – The exterior walls are not shown as being a fire assembly. This is in conflict as the exterior doors are shown as requiring a fire rating. At a minimum the exterior structural elements require protection within the fire compartment. A case could probably be made to not require rated walls for non structural exterior elements but the easy path would be to provide rated construction.

Thanks

-Jason

PROCUREMENT / CONTRACT SUBMITTAL
APM ☐X AP ☐
A ☐ Conforms to the Contract Requirements
B ☐ Minor Comments - Approved With Exceptions as Corrected
☐Re-submittal required ☐Re-submittal not required
C ☐X Not Approved - Revise and Resubmit
Sign: STEVE DOUGLASS Date: 09/22/2010
~~per email~~

From: Omberg Carro, Susan K
Sent: Thursday, September 02, 2010 2:27 PM
To: Wajeeh, Usama E
Cc: Kemp, Jason B; Edington, Max L
Subject: RE: Interior Wall Sched

Sam,

In short, I agree. These drawings appear to provide details for the wall construction, with the UL design numbers. The suspended ceilings appear to be shown, with no UL design number provided. Penetrations are not addressed, including an item of particular concern, the structural steel penetration through the suspended ceiling.

Downloading the assembly details from the UL website shows that there are multiple important assembly details for the walls that do not appear to be addressed by these drawings. The UL design provides a maximum stud spacing, information on floor and ceiling runners, and staggering of

gypsum board for multi-layer assemblies, acceptable methods of attachment, and acceptable backing for horizontal joints that are not addressed by the details provided in the drawing. Some of this may be difficult to verify by inspection at this point in time, as both sides of the wall have been finished. That makes it even more important to receive a detailed description of the construction as performed. If necessary we can cut into the wall to verify conformance.

Thanks,

Susan

From: Wajeeh, Usama E
Sent: Thursday, September 02, 2010 8:48 AM
To: Omberg Carro, Susan K
Cc: Kemp, Jason B
Subject: Interior Wall Sched

These are the drawings we received from Grant regarding their wall details (H-1-91XXX SH1 is the only location showing a 1 hr/2 hr assembly). No details indicating recessed fixtures, wall corners or the boxing of the beams. These are insufficient and will reply back to the submittal as such. Please let me know if you have any specific comments.

Sam