

FINAL MEETING SUMMARY

HANFORD ADVISORY BOARD

RIVER AND PLATEAU

January 14, 2004

Richland, Washington

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This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and Introductions

Committee Chair Pam Brown opened the meeting and welcomed the committee and guests. Pam introduced Howard Gnann, Department of Energy-Office of River Protection (DOE-ORP). Howard is the new Deputy Designated Federal Official (DDFO) for the Hanford Advisory Board (Board).

The November committee summary was adopted as final.

Risk Based End States Document

Mike Thompson, Department of Energy – Richland Operations (DOE-RL), discussed the Risk Based End States (RBES) public meetings. There was good interchange with the stakeholders and the meetings were worth the time, money, and effort. He has received a number of written comments from stakeholders and will strive to ensure those get to Department of Energy – Headquarters (DOE-HQ).

DOE-HQ has reviewed the draft document and provided comments. Mike said the comments are not available for public dissemination. DOE-HQ has now set a milestone of February 1, 2004 for all the sites to submit a second draft of the RBES document. The site will strive to meet that deadline however, given that the second draft has not been

written this may not be possible. The public involvement for the second draft will be the same as that for the first.

DOE-HQ said Hanford's document was the best in class with the exception of the variance section. DOE-HQ believed the variance section was merely an argument for maintaining the current baseline and did not believe the site was aggressive enough in supporting this baseline through risk-based assessment. The variance report will be rewritten with more risk-based variances. Possibilities for such variances have been brainstormed and these can be shared after Keith Klein, Site Manager DOE-RL, and Roy Schepens, Site Manager Department of Energy-Office of River Protection (DOE-ORP), approve them.

The final RBES document is due at the end of March. Mike stated he is willing to take stakeholder comments through the end of January to incorporate into the final document. He could not promise that these comments would be included in the second draft of the document but again stated these will be in the final draft.

Committee Discussion

- Pam asked how involved the regulators will be in the development of the new variances. Mike replied they will have an opportunity to review and comment on what is being sent to DOE-HQ. He added that anyone who would like to may submit variances as comments and those will be looked at and possibly incorporated. Those comments may be emailed to: rbes@rl.gov

Mike added that DOE-HQ was not pleased with the variance reports of any of the sites. They believed the variance report was used to justify the existing baseline, which it was. However, the intent was to describe to DOE-HQ how the existing agreements are risk-based so these would not be subject to change. The Hanford team working on this report was not looking to what could be changed in the baseline. What DOE-HQ is looking for is signs that there is out-of-the-box thinking. One idea for the next report is to include a subset table of everything that is brainstormed so DOE-HQ can see that the site is looking outside the box for different options.

- Greg deBruler observed that DOE-HQ is looking at the life cycle cost but is not considering the additional long-term stewardship costs. He noted that including those costs would provide a better argument for maintaining the existing baselines. Mike stated he would be open to that path but is leery of operating under the assumption that this process will go away.
- Susan Leckband commented she is concerned that across the complex these reports were viewed as business as usual. She asked if there is the intent that these variances are predicated on Tri-Party Agreement (TPA) re-negotiation. Mike clarified that the DOE-HQ guidance is very clear that any changes to cleanup would be via TPA negotiation.
- Several committee members asked how the public will be involved with the new draft. Mike replied that the draft will be distributed to the Board and those people

who have made comments as well as be posted on the website. Comments will be taken such that revisions can be made to the final document.

- Ken Niles commented that there is beginning to be a push back from the regulators at closure sites. He asked if Mike believes DOE-HQ may start to focus this process on the long-term sites rather than across the board. Mike replied that would be conjecture.
- Briant Charboneau, DOE-RL, commented the DOE-HQ review team wanted to understand the decision process of how and why items were included in the first draft. The team wanted to see items that had been rejected as well as the reason for rejection. This type of information will be included in the next draft but will include a notation that it is not seen as a viable path. He encouraged committee members to provide their recommendations for variances. He noted that DOE-HQ wanted the variances to be those items that are driving the site down a path that is not risk-based. However, many of these items are part of the legal process and cannot be changed.
- Susan asked if the review team is comprised solely of DOE-HQ personnel or if there is also expert technical review. Mike replied there are technical experts from DOE, the contractors, and the Consortium for Risk Evaluation with Stakeholder Participation (CRESP) organization.
- Greg asserted that the regulations and the public values of protecting cultural and natural resources, make it clear that not cleaning-up the 300 Area to unrestricted use does not make sense. This would remove the long-term stewardship issues and responsibility. The real question is what does the public want. Mike added that the one very laudable goal in this process is the desire to expend funds from Congress on items that provide a return on investment in terms of risk reduction. It is helpful to be able to illustrate to Congress that for X dollars, you receive X amount of risk reduction.
- John Price, Washington State Department of Ecology (Ecology), stated that by DOE-HQ guidance, Hanford may have had the best vision statement. Hanford was the only site that did not receive blistering criticism of its vision statement. The underlying statement of this guidance is that no matter a site's current plan, it cannot be risk-based.
- Pam encouraged all organizations to comment on the first draft of the document to re-enforce the position of DOE-RL and DOE-ORP.
- A committee member asked if it would be appropriate or helpful to copy DOE-HQ on any comments given to Mike. Mike clarified that it is his intention to garner all the comments and put them in an appendix.
- Greg stated that Hanford site employees should stand up for groundwater issues and realize that the public supports them. Conversely, it is important that the public show their support for the work these people are doing. Mike replied the hope is that when major draws on funds are finished (e.g. K-Basins), the focus will return to groundwater. He added that recently focus on groundwater has increased. He noted that the majority of the remediation work being done is ultimately aimed at protecting the groundwater.

- Greg asserted the push for accelerated cleanup will result in the ultimate goals never being achieved. There is no technical basis for the push to acceleration and the concern is if the project is not finished in the accelerated timeframe, funding will disappear.

Regulator Perspectives

- Dennis Faulk, Environmental Protection Agency (EPA), commented the sites are between a rock and a hard place. If they do what DOE-HQ is requiring, the stakeholders and regulators will be upset. He noted that cleanup at Hanford is risk-based and grounded in public input. The EPA has the authority to determine if the risk reduction is worth the funds being spent and DOE is asking for that review. However the Records of Decision (ROD) are based on public values and those can't be changed. In order to appease DOE-HQ the site must say they are going to change the way they approach cleanup. Dennis stated he has sympathy for the site as they are in a no win situation.

Monitored Natural Attenuation

Issue managers Maynard Plahuta, Tom Stoops, and Greg deBruler suggested a half-day workshop to provide committee members a working knowledge of Monitored Natural Attenuation (MNA). This should be limited to MNA with enhanced passive remediation (EPR) being discussed at a later date. It is important to have an understanding of the basic principles of MNA before discussing EPR. The workshop will look at how MNA is being used for radionuclides as well as the process being studied for solvents at Savannah River. The workgroup has prepared a draft agenda and would like comments and suggestions back. The workgroup has also identified the people who should present at the workshop.

M-91 TRU Agreement

The committee discussed the proposed M-91 change package and the possibility of advice. Pam Brown and Gerry Pollet each developed a brief summary of what they see as potential issues with the change package.

In her piece, Pam tried to identify key issues agreed to in both M-91 and M-16 as well as some concerns. She commented that while this agreement is a step in the right direction from the perspective that it provides a legal agreement of what DOE will do and when, there are still several concerns. No commitments are established for when transuranic waste (TRU) will be shipped to the Waste Isolation Pilot Plant (WIPP) and if higher shipment levels will be maintained. Additionally, no characterization criteria for TRU have been approved. If the waste is not shipped to WIPP, it will be treated to Land Disposal Regulations (LDR). It does make sense however to treat waste based on the priority of the greatest environmental threat. Of greatest concern in this change package is still the missing piece of pre-1970 TRU.

Ecology's Perspective

Laura Cusack, Ecology, stated that the State believes this is a good package. The objective of the negotiations was to settle those issues that did not have to go through the court. All the involved parties agreed it would be best to take those issues out of the appeals process. Some of the schedule requirements have been changed but are still more aggressive than DOE would like. She clarified that there are M-16 milestones to address the operable unit that holds most of the pre-1970 TRU. A work plan for this unit is currently under development.

Laura discussed how several principles from the Board's February 2003 advice on these negotiations were addressed.

Principle #2: This change package makes no provision for the site to bar or to take off-site waste.

Principle #4: There is a schedule for retrieval of waste in the 200 Area but there still is not a schedule for shipment to WIPP. All of the off-site waste in storage at Hanford is included in the retrieval rates.

Principle #5: The change package does have a Sampling and Analysis Plan (SAP). A process has been developed to remediate the area as waste is retrieved.

Committee Discussion

- Greg asserted that the story of the pre-1970 TRU is continually changing. It appears to be based on different negotiations at any given time. Laura responded that the post-1970 TRU was all stored in a retrievable manner and has a significant amount of data attached to it. This material falls under the Resource Conservation and Recovery Act (RCRA). However material that is in the burial grounds, such as the pre-1970 TRU, falls under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Therefore the material must be addressed using the CERCLA process not RCRA. An investigation of the burial grounds to characterize the contents will occur between now and 2008. A decision on how to proceed will be made after that is complete.
- Shelley Cimon asked how that timeline dovetails into WIPP's remote handled (RH) waste capacity being filled. Laura replied that the current status is that WIPP will not be in a position to accept RH until 2007 at the earliest and most likely 2010. Therefore, exhuming the RH now does not have any benefits. She noted that before the 1970's there was no TRU waste. The definition of TRU was developed in 1970 and redefined in 1980 and it was after this time that WIPP was designed.
- Matt McCormick, DOE-RL, commented that he does not believe WIPP will run out of room. Laura recognized that there is a significant difference of opinion between the State, EPA, and DOE on this matter.
- Susan commented that she learned on her tour of WIPP that there is a time factor. In each mine, the back of the spine is designated for RH. These spines must be filled in sequential order and then contact handled (CH) waste is placed in the front of the

spine. However, if the RH waste is not ready, the designated space will be filled with CH waste. Max Power, Ecology, responded that from the State's point of view, there is leverage with the RH facilities because when WIPP is ready to take this material it has to be ready to go. It will not matter if it is pre or post-1970, all the material will go to WIPP. Therefore it is important for the facilities to be ready when the excavations begin

- Greg asserted that there is not adequate time planned for the Remedial Investigation/Feasibility Study (RI/FS) process in the 200 Area. He expressed concern that a large amount of waste will not be accepted because WIPP is not being told up front that the material is pre-1970 TRU.
- Greg asked Laura to address the comment in Gerry's draft "that the Proposed Agreement allows USDOE to unilaterally classify waste". Laura replied that Ecology is not allowing DOE to avoid RCRA compliant storage and treatment. The treatment of TRU is an issue that has been deferred to the courts. The objective of the change package is to acknowledge that there is a lot of waste and to address the CH waste first. The CH will be focused on initially because something can be done with the material right away. If RH waste was addressed first, the waste could only be stored. She added another top priority is to address those burial grounds where there are carbon tetrachloride issues. The worst burial grounds will be dealt with first and then the process will work its way from there.
- A committee member observed that Gerry's piece leans towards the legalities, which were deliberately carved out of the M-91 negotiations. The legalities can be used as a framework for the Board's advice but are the purview of the regulators not the Board.
- Todd commented this advice should be drafted on the basis of the February 2003 advice.
- Several committee members noted what the Board posed in advice last year has not changed. However, the current M-91 process is a step in the right direction.
- Several committee members noted that M-91 will cost a large amount of money and something else may have to give. Even though other projects will be ramping down during this time, those funds are already booked for other items.
- Pam asked how discussions with New Mexico are progressing. Matt replied that DOE is working to reach an agreement with the regulators, state, and stakeholders there.
- Several committee members asked why it matters when the TRU was created. Max answered that 1970 was the point at which the Atomic Energy Commission made the distinction. This provided a way to know when material was segregated. Dennis added that there is no legal requirement to remove the pre-1970 TRU. By law, the post-1970 TRU must go to WIPP.
- The advice draft will be sent out for comments and then discuss it on a committee call.

Regulator Perspectives

- Dennis commented the EPA wants a snapshot of how much material is in the burial grounds. He added the EPA might not agree with what DOE is planning. The purpose of the RI/FS is to make a remedy decision. He added that Hanford will generate some additional TRU through closure and WIPP will need to take that material.

Hanford Performance Management Plan

Jeff Frey, DOE-RL, explained to the committee how the Hanford Performance Management Plan (HPMP) is being implemented and rolled into site operations as well as contracts. He noted that there have been changes to the plan due to acceleration of activities and therefore a new integrated schedule is being developed. However the material he is providing is a good reference point. The HPMP was created to be and is a very useful target in driving cleanup activities. It provides a much needed focus to the work.

The HPMP was the result of several process including:

- Hanford Cleanup, Constraints, & Challenges Team (C3T)
- Regulatory Partnerships
- Top-to-Bottom Review
- Cleanup Reform Account
- Commitment to Accelerated Hanford Site Cleanup

This process has created an alignment of the baseline for 2035 cleanup completion, Hanford cleanup contracts, and the TPA. This alignment has put the site in a position to receive increased funding and to succeed on an accelerated path.

The implementation of the HPMP has assisted in solidifying the end state of the site. The end state in the HPMP is close to what was affirmed in the first draft of the end states document. The objective of the HPMP end state is to:

- Complete all EM cleanup activities by 2035 or sooner
- Transfer the ALE, Wahluke Slope, and Riverlands areas to the U.S Fish and Wildlife as part of the National Monument by 2005
- Complete River Corridor cleanup by 2012 to allow unrestricted surface use in most areas
- Final cleanup on the Central Plateau by 2035, will be completed including closing tank farms in accordance with an industrial use scenario
- Utilize six Strategic Initiatives to accelerate achievement of these end states and achieve real near-term risk reduction
- Improve DOE's business process

The acceleration driven by the HPMP has many benefits, first and foremost reducing the duration of cleanup by more than 35 years. This reduction in time will result in a savings of 30 – 40 billion dollars over the life of the project. By 2012 the active portion of cleanup will have shrunk from the current size of 586 square miles to less than 75 square miles. The early removal of nuclear material and wastes from the site in addition to the acceleration of tank cleanup will rapidly reduce the risks at the site.

HPMP Projectization

The HPMP is updated through the addition of new baselines, milestones, etc. Many important items currently being discussed were developed from the HPMP. These include the Risk Based End States, which evolved from the 2035 End States in the HPMP. The initiatives assist in the development of scope, performance incentives, and contracts. Of biggest note is that the HPMP is under configuration control. This means that DOE-HQ treats this document as the overarching programmatic cleanup strategy. If the work deviates from this, DOE-HQ is interested. DOE-HQ controls several elements through configuration control. These include the HPMP as previously mentioned, cleanup end states/end points, EM corporate performance metrics, annual baseline cost, life-cycle cost, project baseline summary structure, and the WIPP transportation baseline (shipping schedule).

The performance metric being used is the Gold Chart. This is essentially a scorecard of what was completed through the previous year, what the commitments were for the present year, what the commitments are for the next year. The chart also illustrates if these commitments are being met.

There are six strategic initiatives in the HPMP. Jeff reviewed each initiative and presented the changes, if any, to the strategy for each. Initiative 5, the acceleration of Central Plateau cleanup, was discussed in more detail later in the day.

Strategic Initiative 1: Accelerate Columbia River Corridor Cleanup by more than 20 years to 2012.

The scope has been expanded to reach safe, efficient, and full closure of the Hanford Site river corridor on an accelerated schedule. To date 699,700 tons of contaminated soil has been removed from waste sites in the River Corridor and disposed of. Cleanup of 35 waste sites along the river corridor has been completed. There are several challenges including the awarding of the River Corridor Contract. Several additions have been made to the scope including 10 Pacific Northwest National Laboratory (PNNL) Lab facilities, specific 400 Area buildings outside the Fast Flux Test Facility (FFTF) demolish and decommission (D&D) Project, and the 618-10 and -11 burial grounds.

Strategic Initiative 2: Accelerate Tank Waste Treatment Completion by 20 years. No changes have been made but a large amount of progress has been made. Design and construction of the Waste Treatment Plant (WTP) is well underway. Those projects constructing waste delivery systems are ahead of schedule and under budget. Over 98%

of the pumpable liquid has been retrieved from the old single-shell tanks (SST). The first full retrieval of waste from one of these tanks is nearly complete.

Strategic Initiative 3: Accelerate Stabilization and De-Inventory of Nuclear Materials.

The strategy has been changed due to a delay in the Cesium (Cs)/Strontium (Sr) capsule disposal decision (TPA M92-05, 6-30-07). There is also potential that there will be a change to K-Basin sludge disposition. The removal of sludge, debris, and water from K-Basins will be a continued challenge.

Strategic Initiative 4: Accelerate Waste Disposal.

Changes may occur as a result of new planning based on M-91 negotiations and other activities. This planning may allow for acceleration above rates discussed in the HPMP. The Central Waste Complex (CWC) mixed low-level waste (MLLW) inventory has been reduced from 7,000 cubic meters to 4,500 cubic meters. Additionally, TRU shipments to WIPP have increased from 2 shipments in fiscal year (FY) 2002 to 37 shipments in FY 2003. Several challenges will need to be addressed in the future including; retrieval of suspect TRU from burial grounds, the limited national capability and capacity to thermally treat MLLW, and implementing M-91 workscope.

Strategic Initiative 5: Accelerate Central Plateau Cleanup

While there are no changes to this strategy, significant process has been made. Demolition of the Plutonium Concentration Facility (233-S) will be complete this spring. A Feasibility Study/Proposed Plan (FS/PP) has been developed for both the Canyon Disposition Initiative (CDI) and U Plant closure area waste sites. A draft zone approach for Central Plateau cleanup has been developed. The challenge here will be to optimize the zone approach for the Central Plateau. To do this, the gaps, disconnects, and integration issues will need to be resolved and regulatory agreement must be reached on this approach.

Strategic Initiative 6: Accelerate Cleanup and Protection of Hanford Groundwater

This strategy has been enhanced through the development of Hanford's Groundwater Management Plan (March, 2003). 57 high-risk wells were decommissioned through October 2003 and 16 new monitoring wells were installed. The continuing challenges will be the D Area chromium plume which continues to increase in concentration and the 200 Area Carbon Tetrachloride Plume.

Lori Fritz, Fluor, of the waste management project, reviewed the waste process flow at Hanford for both Low-Level Waste and Mixed Waste. This flow shows where materials are dispositioned and when. These flows will change as a result of the M-91 negotiations.

Committee Discussion

- Gerry noted the Board has continued to criticize the assertion that the HPMP will result in a savings of 30 – 40 billion dollars. Jeff stated he is only trying to review what is in the HPMP.
- Richard Smith noted he had heard K-Basin sludge will not be stored in T Plant. Dale McKenney, Fluor, stated the idea is to separate the sludge in order to send those portions that meet WIPP acceptance criteria earlier and skip the interim storage step at T Plant. The material could be processed as it is retrieved.
- Pam asked if the department's software is integrated so if a change is made to one project, the software will go through and show the affects of that change on the rest of the projects. Jeff replied there is nothing available to capture all the relationships and interdependencies. He conceded that an automatic understanding of how changes to one project may impact another is not always there.
- A committee member asked what the review process is in order for a project to be removed such as with the Cs/Sr capsule project. Dale explained that the contractor would need to prepare a change request to address the impact of M-91 on that project. That request would be discussed with the contractor and within the department, and then be forwarded to DOE-HQ for approval. The hope is to have issues such as this resolved in time for the March budget submittal.
- Maynard stated it would be good to have a place to identify the priorities so the Board could comment on them sooner rather than later. Jeff stated that the priorities have shifted due to the move to an accelerated plan. This has created some wiggle room to move to projects where greater risk could be reduced. The Cs project is such an example. It was the right thing to do, the funds were available, and the work could get done. However, because of M-91 this can no longer be done.
- A committee member asked if the life cycle costs include the post closure costs? Dale responded that it does not include those costs. He added it is important to be aware of the relationship between cleanup costs and long-term stewardship costs.
- Greg asked how the full life cycle cost to the state of Washington is incorporated into the project. How are these costs evaluated and then defined to the regulators? Jeff acknowledged this is an excellent point. While it is positive to have an agency that is focused on completing the cleanup mission and focusing the needed resources and efforts, there may not always be healthy consideration of the true life cycle costs. It is valuable to look not only at the cost of Environmental Management (EM) cleanup but the true life-cycle cost including long-term stewardship costs and costs to the state.
- Gerry asserted DOE made a formal commitment to have a program for Research and Development of alternatives to incineration. He asked if that program has been abandoned. Dale stated there is some investment but the program is not what it once was. There is a mix of sites individually developing alternatives and working together.
- Gerry asked how many FY 2004 budget dollars have been spent to date. Is there public review of proposed changes to the HPMP before these are sent to DOE-HQ? Larry replied that there are limits to the funding levels that can be released to the

contractor. While the contract has not been officially changed there are impacts because funding was not received when it was expected.

- For the February Board meeting, the committee would like to begin with Jeff's presentation and then have a breakout session. During this session, stations would be set up for each of the strategic initiatives. Board members would have an opportunity to speak with the program managers about these initiatives. Questions from each station would be captured and then pulled back into the discussion when the Board comes back together.

Central Plateau Optimization Strategy and Regional Closure Strategy

Larry Romine, DOE-RL, explained that the purpose of this strategy is to drive implementation of a comprehensive plan for all activities on the site. This is necessary to fully understand how each action influences the others. The intention of the plan is to develop an integrated systematic approach to waste site remediation and closure, facility decommissioning, waste disposition, tank farm closure, and groundwater protection, which is protective and cost effective. The challenge is to accelerate the closure of 2,400 locations/sites located within the Central Plateau to 2035 with the majority being completed by 2024. This must be done while dramatically reducing costs.

An Inter-Agency Management Integration Team (IAMIT) workgroup was established to help develop the Central Plateau Strategy. A draft of the strategy was developed and included as part of the Risk-Based End State submittal. This strategy is being integrated with the tank farm closure process. A composite risk assessment is currently underway with the Central Plateau risk framework being applied.

The optimization strategy document provides the initial rationale and methodology for risk-based timing and the sequencing of decisions/actions for the cost effective closure of the Central Plateau. Twenty-four closure zones were established with relative priorities and sequence for closure. Each of the 2,400 locations/sites were designated to one of these zones. The ten highest risk sites will be closed in parallel with the closure zones.

Several gaps have been identified in the strategy.

- Interdependencies of ancillary facility decommissioning and closure
- Pipeline/sub-grade cleanup and closure
- Final disposition of key and operation facilities
- Buried TRU waste and residuals
- Final groundwater remedies
- Integration with tank farm closure

The path forward will strive to develop actions to achieve agreements and efficiencies in permitting and regulatory actions. A course of action will also be developed to address the resolution of gaps, disconnects, and integration issues. The zone scope, approach, and priorities will be refined and work will continue towards a new life cycle baseline.

As part of this process, a new cost structure will be developed to evaluate spending profiles and the optimization of work schedules.

The path for developing the baseline is an iterative process. The project execution plan prescribes the optimization process, plan, roles, and responsibilities, schedules, updating baselines, and timing of actions. The path involves a circular process of; schedule optimized issue resolution, resolving issues, updating DOE, preparing baseline change requests (BCR) to update the baseline, approval of the BCR, updating the baseline, identifying issues, categorizing group issues, and optimizing sequence and priority.

Several regulatory documents will be released in the near future.

- o Feasibility Study/Proposed Plan submitted for U-Plant Area waste sites
- o Canyon Disposition Initiative Proposed Plan submitted for regulatory comment
- o Feasibility Study/Proposed Plan for BC Crib Area is on schedule for a March submittal

There are several important items in the Strategy for the Board to consider and provide feedback on. It would be helpful for the Board to provide input on general zone approach and specific zones/priorities. The Board should also discuss and identify opportunities for consolidated decision-making and implementation documentation. Larry added that he hopes the Board will support prototype projects to build experience for subsequent optimized remediation.

Committee Discussion

- A committee member asked how the regulators feel about the zone approach. John Price, Ecology, stated that DOE-ORP involved Ecology in the development of this plan and that this type of approach makes sense. The key selling point of this approach is the economies of scale achieved however, to prove this, a prototype is needed and at this time, the U Plant Plan is floundering. Jeff added that this process will provide better remediation decisions and is a more thorough approach. Each area is being considered to visualize what it will look like in the future. It is not too early in this process to start doing this.
- Susan noted that many plans encounter issues during the implementation phase. From a workforce perspective, does this approach consider which zones would need the same skill set? Larry noted that is one of the key elements. Bruce Ford, Fluor added that the economies of scale provide a significant savings and a continuity of effort that is important in order to keep momentum moving forward. This will be an important piece of the zone approach.
- Gariann Gelston asked if the previously mentioned plans are for the closure zones. Larry clarified that the current baseline does not include these zones. For the Board to fully understand the zone concept, several documents would need to be pieced together.

- Maynard asked what criteria were used to define the zones. Tom stated the zones were based on the historical operations of the sites. Dennis noted that historically, operable units were geographically based and this approach goes back to that.

Regulator Perspectives

- Dennis Faulk, EPA, asserted the Board can play the biggest role by weighing in on what the proper remedies are for these waste sites. This input would be given by commenting on proposed plans.

U Plant Zone Prioritization

Kevin Leary, DOE-RL, discussed the U Plant Zone prioritization with the committee. The U Plant Closure area project is the prototype that will guide planning for subsequent remediation efforts on the central plateau. The technical, regulatory, and project management lessons learned captured from this project will be critical to the future success of closing the Central Plateau in a safe, compliant, and cost-effective manner.

Elements of the project include:

- o Source elimination to protect groundwater
- o Infrastructure modifications to eliminate the artificial recharge conditions
- o Source term degradation remediation
- o Post-closure groundwater monitoring to confirm successes of remedial actions

There are two separate projects as part of the U Plant Closure Area Plan. These are the Waste Sites Remediation Project and the 221-U/Canyon Disposition Initiative Project.

U Plant Closure Area Plan

A Proposed Plan, Draft B, has recommended several remedial actions for the U Plant Closure Area Waste Sites Remediation Project.

- A total of four high-risk cribs (216-U-1, -2, -8, and -12) will implement surface barriers
- Fourteen waste sites will implement remove, treat, and dispose
- Eight sites will implement maintain existing soil cover, monitored natural attenuation, and institutional controls
- Four sites require no action, dependent on results of confirmatory sampling

Two regulator reviews have been completed on the waste sites Proposed Plan/Focused Feasibility (PP/FF). There is general agreement between DOE-RL and the regulators on the proposed remedies for the U Plant waste sites. Also prepared for regulator review is

the confirmatory/remedial design sampling and analysis plan (SAP). The SAP is based on the Data Quality Objectives (DQO) workshops. Plans are being finalized to conduct confirmatory sampling and remedial design sampling during January – March 2004. As part of the remedial design process DOE-RL sponsored a surface barrier workshop. The workshop was held in November 2003 and was directed towards the regulators, Board, and tribal members. As part of the remedial design process, field work for the borrow source in Area C was completed in December 2003.

The path forward for the Waste Sites Remediation Project is as follows:

- DOE-RL will submit a redline/strikeout version of the Draft B Waste Sites Proposed Plan to regulators on February 25, 2004. This version incorporates EPA Region 10 comments received in December 2003
- Regulatory approval of the Proposed Plan is scheduled for March 2004
- There will be a 45-day public review period of the Plan in late March and April 2004
- A Record of Decision (ROD) will be approved by June 30, 2004
- Confirmatory/Remedial design sampling will occur from January to March 2004
- The remedial design phase is January 2004 – January 2005
- Remedial Action Contracts will be awarded by February 2005
- Surface barrier construction will begin for the high-risk waste sites by March 2005
- Remediation of high-risk waste sites will be completed by September 2005

221-U/Canyon Disposition Initiative Project

The second part of the U Plant Closure Area Project is the 221-U/Canyon Disposition Initiative Project. A Proposed Plan/Feasibility Study has been completed for this piece of work. A regulator review cycle has been completed on the CDI Feasibility Study (Rev. 1, Draft B) and Proposed Plan (Draft D). Comments were received back in late August 2003. The revised Feasibility Study (Rev. 1, Draft C) and Proposed Plan (Draft E) were retransmitted from DOE-RL for the next regulator review cycle in late December 2003. DOE-RL and the regulators jointly support the proposed remedy for disposition of the 221-U canyon building: in situ disposal of waste already in the building, partial demolition of the structure, followed by construction of a surface barrier.

The Tri-Party Agency management and legal council will be meeting in February 2004 to discuss and resolve technical differences regarding the application of certain landfill requirements to the proposed remediation. Also during February, regulators (including EPA Region 10) will complete their review of the CDI FS/PP. DOE-RL will revise the CDI FS/PP based on the comments received and then resubmit the document, Draft F, to the regulators in March 2004. The current schedule is to obtain regulator approval of the document in April 2004, hold a 30-day public review period June to July 2004, and to

approve the ROD in November 2004. Remedial design for placing the 221-U canyon in a “demolition ready” state will occur November 2004 to June 2005. The team will then be ready to initiate fieldwork in July 2005. These efforts will be completed by September 2006.

Board Questions on the U Plant Closure Area

The Board has asked many questions regarding the U Plant Closure Area over the past months. Kevin provided answers to many of these questions. All the questions and answers can be found in the handout of his presentation. Below are examples of the types of questions the Board has asked and the answers Kevin provided.

What is DOE hoping to learn from the U Plant Zone Model?

The prototype project is identifying the key technical and regulatory issues and gaps associated with the closure of the Central Plateau. DOE hopes to learn methods to integrate: CERCLA and RCRA; closure of waste sites in multiple operable units; and TPA milestones, as well as the applicability of standard (i.e. “plug-in” approach) waste site remediation approaches.

How can the Board influence the steps/processes/principles?

The Board can influence these by providing input and recommendations via document review, Board meetings, and interactive tours. The Board can also provide input to DOE on a variety of issues as well as to regulators through comment on proposed plans.

Committee Discussion

- A committee member observed it appears the overall assumption is that caps are the answer for preventing migration. However if the extent and depth of the geologic structures at this location are not fully understood how can these assumptions be made? John Price stated that other options will be considered. EPA and Ecology have sent principles to DOE dictating that excavation is preferable however; in some cases caps do make sense. The hope is that these can be consolidated to as few as possible.
- Maynard asked if there were any reverse wells in this zone and if there were, was a screening risk completed to determine the best approach for these. Kevin replied that many of these sites are near the CDI and treatment of these would be coordinated with the CDI surface barrier. Transport modeling can be done for these and samples are taken to verify the model. The implementation plan addresses how to approach the characterization activities. The focus here is to create a “plug-in” approach that allows for a standard remedy for like waste sites. John Price added that data was collected about 10 years ago, under TPA and EPA requirements, for the U Plant area as part of a remedial investigation. This is being proposed as a basis for the conceptual model.
- Gariann noted the keys in this process are the conceptual models because those are used to determine if the “plug-in” approach will work. She asserted this is the point at which the Board can contribute.

- Richard asked what demolition-ready means. Jane Borgehse, Fluor, answered it involves clearing the equipment and/or waste above the canyon deck, putting it into the cells, knocking down anything above the cells, concreting off the cells, and backfilling the facility.
- Pam asked when they will receive the 2004 budget allocation. Larry replied the money has been allocated but they are working to decide which activities get funded in the 2012 versus the 2035 accounts. A disconnect was identified and options are being looked at for creative ways to allocate money and fund projects. Jeff added that they are looking for contractors to give recommendations on what they can and cannot do for specific amounts of funding and how to meet priorities.
- Several committee members asked if this or a like process has been implemented at other closure sites and if so, are the lessons learned being exchanged. Larry replied this has been done to a lesser degree with isolated issues. Savannah River is looking at a similar canyon disposition initiative and so discussions are occurring with staff from that site. Additionally, the Nevada expertise with barriers is being tapped for this project.
- Todd noted the Board is being asked to support this in the budget prioritization. However, the Board has no way of knowing how much money the project needs or will get nor can it comment on priorities at this level. The Board does not know what would be given up in exchange for this work.
- For the February Board meeting, both presentations will be used with a little less detail on the U Plant closure piece. This is very useful in showing how regional closure works. The committee requested that Kevin bring the old map of the operable units with a layover of the new regional closure zones. It is important that the Board is taken through the assumptions and analysis used in planning this process. The committee also requested detail of what issues the Board needs to consider in relation to the Central Plateau Optimization Strategy.

Regulator Perspectives

- Mike Goldstein, EPA, commented that the funding of this regional closure is important because it will help to break ground for other areas. A ROD will be issued by the next fiscal year and within fifteen months of that, significant remediation on the building will have started so it is imperative that funding for remedial design is in place. If funding is not going to be available, it makes no sense to develop a ROD. It would be disappointing if this work could not proceed.

Groundwater Remediation Update (K and D area)

John Price, Ecology, commented the 100 D Area is a good news story. Last year, samples from the aquifer tubes in the river indicated rising chromium levels. Ecology was concerned about these levels and asked DOE to make addressing this issue a priority. Ecology asked DOE to do three things to remedy this problem and DOE has agreed to do this. These items cross the boundaries between DOE contractors.

Vern Johnson, Fluor, presented an update on what was presented to the committee in November and the progress on each of the items John mentioned.

Status of Chromium Plume Actions

DOE has committed to the following actions in order to address the rising chromium levels.

Eliminate the driving force

- o Small water line leaks have been identified and corrected
- o An agreement was reached to cut and cap ~80% of lines now and the remainder after final D&D
- o Surface water ponding locations have been identified

Identify/Remove the Source (Fluor Hanford, Bechtel Hanford)

- o Waste site records and remediation/excavation activities have been reviewed
- o It is not likely that dust suppression during excavations is the contributor
- o A source investigation to concur with the investigation was recommended by Ecology and the Tri-Parties

Remediate Groundwater Contamination

- o 4 aquifer tubes were installed
- o 3 new wells were completed and continuous water level/data loggers were also installed
- o Remedial action options were reviewed and an agreement was reached between DOE- RL, Ecology, and EPA to extend the in situ redox manipulation (ISRM) barrier by 2,000 feet (1/3 now and the remainder in FY 2005).

100 K Area

The EPA has expressed significant concern regarding the downstream movement of the Chromium Plume. The end of the plume will be characterized and then a decision will be made whether or not to convert the wells in the pump and treat system to extraction wells. A new well, K-130, which is located to the west of the end of the plume recently had chromium levels spike to 80 parts per billion. These levels have begun to decrease. New aquifer tubes will be added starting this week and a new monitoring/extraction well will also be put in place. While this is an issue of concern, the problem is small in relation to some of the issues in D area. However, it is important enough that an attempt will be made to characterize the extent of the plume. Due to artifacts and housing remnants located in this area, a cultural resource survey will be completed. Some of this work has already begun.

Bob Peterson, PNNL, discussed evolving Tritium issues in the 100-K Area groundwater.

Tritium Near the Northwest Corner of KE Reactor

Increasing Tritium concentrations started in early 2003 at wells 199-K-27 and 199-K-109A. No co-contaminants were detected that would implicate shielding water. Additionally, there was no facility evidence for possible loss of shielding water to the ground. Therefore, the suspected cause is the remobilization of vadose zone tritium associated with past-practices waste disposal, and possibly past KE Basin leakage.

Tritium at the East side of KW Reactor

Concentrations began increasing in 2001 at well 199-K-106A and abruptly increased again in early 2003. Nitrate concentrations and the groundwater temperature show a similar trend. No co-contaminants suggestive of shielding water were found nor was any facility evidence of shielding water loss to the ground. The suspected origin of the tritium is a nearby past-practices condensate crib. Excavation of this crib began in early December 2003.

Tritium Near the 100-K Burial Ground

A rapid groundwater increase began in late 2000 at well 199-K-111A. The area is not in the downgradient flow path from known sources near the KE Reactor. The suspected cause of the increase is a lateral shift of the groundwater plume located to the east of the well. The shift is driven by the buildup of a water table mound beneath the pump-and-treat system injection wells.

Source of Tritium Near 100-K Burial Ground

Soil gas surveys conducted near the burial ground indicate an excess of helium-3 in the soil gas, which suggests a nearby presence of tritium. The source may be located in the vadose zone and/or an underlying groundwater plume. The anecdotal evidence suggests the possibility of lithium target material in the burial ground.

Committee Discussion

- Pam asked if the location of the source has been validated. John replied that they are still exploring. This is the reason for the pit excavation along the railroad tracks. Previous solo borings have indicated some higher levels of chromium but the largest concentrations have not yet been found.
- Tom asked when the drilling will be completed. Vern replied a positive result will begin to be seen in the summer of 2005.
- Harold Heacock asked if the barrier will shift the flow of groundwater. Vern stated this is a permeable barrier that changes the chemical form of the contaminants to a less hazardous form.
- A committee member asked how deep the aquifer tubes are. John replied these are at three different levels ranging from 8-20 feet below the riverbed. These are placed to sample the groundwater upwelling into the riverbed.

- Dennis stated that to reach the rest of the inventory the excavations may have to be very deep. Bob added that he had heard at K East and K West, the excavation of the plume would have to be done by boring.
- Maynard asked if the work with the K level fuel elements have affected the levels. Bob stated none of this work would cause a large infiltration of water. This possibility has been investigated but no sources have been identified.
- Pam asked if additional sampling in the river has been done in light of these spikes and how the contamination is moving. Bob stated the groundwater flow is between the two reactor areas and the river. The flow rates are such that the contamination would reach the river in about 10 years. The monitoring along the river is looking for the plumes and includes monitoring of the riverbank springs when these can be found.
- Several committee members asked if chromium levels in the river are being monitored. Bob stated this is being done for all reactor areas. The water services and environmental personnel carefully monitor for mobile constituents.
- Greg asked if duckweed is monitored. He was told it was a good indicator because its cycle is fourteen days. Bob stated they are always looking for better ways to find the sources of contaminated water.

Regulator Perspectives

- Dennis stated the EPA is happy DOE is doing this work. This will be a learning experience and will be valuable in addressing 618-10 and -11. The results from the excavations will be ready in a couple of months and another round of groundwater sampling will be conducted to see if these trends continue. He added that the committee should receive an update on this work in a couple of months. He would also like to discuss the IAMIT groundwater logic with the committee in March.

Committee Business

The committee decided that a February committee meeting will be necessary. Half of this meeting will be devoted to the Monitored Natural Attenuation Workshop suggested by Maynard, Tom, and Greg.

At the March meeting, Dennis would like to discuss the IAMIT groundwater logic. He added that groundwater sampling results from the excavations should be ready in March and that the committee should plan on receiving an update.

A committee call was scheduled for January 22, 2004.

Handouts

- River and Plateau Committee Meeting Agenda, January 14, 2004
- Implementation of the Hanford Site Performance Management Plan, Jeff Frey (DOE-

RL), January 14, 2004

- Central Plateau Strategy, Larry Romine (DOE-RL), January 14, 2004
- U Plant Closure Area, Kevin Leary (DOE-RL), January 14, 2004
- Tritium in 100-K Area Groundwater, Bob Peterson (PNNL), January 14, 2004
- Status of Chromium Plume Actions, John Price (Ecology), January 14, 2004
- Attachment 2: Proposed Locations for New Monitoring Well and Aquifer Tubes, DOE-RL, January 14, 2004
- Preliminary Zone Priorities, DOE-RL, January 14, 2004
- Synopsis of Monitored Natural Attenuation, RAP Issue Managers, January 2004
- Monitored Natural Attenuation Draft Agenda, RAP Issue Managers, January 2004
- Proposed Change Package M-91 and M-16, Pam Brown, January 14, 2004
- Draft Advice for Proposed New M-91 Milestones, Gerry Pollet, January 14, 2004

Attendees

HAB Members and Alternates

Shelley Cimon	Susan Leckband	Gerry Pollet
Greg deBruler	Todd Martin	Richard Smith
Gariann Gelston	Ken Niles	John Stanfill
Harold Heacock	Maynard Plahuta	Tom Stoops

Others

Briant Charboneau, DOE-RL	Rick Bond, Ecology	Liana Herron, EnviroIssues
Jeff Frey, DOE-RL	Laura Cusack, Ecology	Lynn Lefkoff, EnviroIssues
Kevin Leary, DOE-RL	Dib Goswami, Ecology	Jane Borgehse, FH
Matt McCormick, DOE-RL	Fred Jamison, Ecology	E.J. Murphy Fitch, FH
John Morse, DOE-RL	Max Power, Ecology	Bruce Ford, FH
Larry Romine, DOE-RL	John Price, Ecology	Lori Fritz, FH
Yvonne Sherman, DOE-RL	Dennis Faulk, EPA	Vern Johnson, FH
Michael Thompson, DOE-RL	Mike Goldstein, EPA	Mike Lackey, FH
	Dick Jaquish, WDOH	Dale McKenney, FH
		Rob Piippo, FH
		Bill Ritter, FH
		Barb Wise, FH
		Kristie Baptise, NPT ERWM
		Gabriel Bhonee, NPT ERWM
		Anthony Smith, NPT ERWM
		John Fruchter, PNNL
		Bob Peterson, PNNL
		Mark Triplett, PNNL
		Doug Sherwood, Rivers Edge Environmental
		Annette Cary, TC-Herald