AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE 1 OF PAGES 2

2. AMENDMENT/MODIFICATION NO.
0664

3. EFFECTIVE DATE
See Block 16C

4. REQUISITION/PURCHASE REQ. NO.

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE 00601

Richland Operations Office
U.S. Department of Energy
Richland Operations Office
P.O. Box 550, MSIN A7-80
Richland WA 99352

7. ADMINISTERED BY *(If other than Item 6)* CODE 00601

Richland Operations Office
U.S. Department of Energy
Richland Operations Office
P.O. Box 550, MSIN A7-80
Richland WA 99352

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CH2M HILL PLATEAU REMEDIATION COMPANY
Attn: ANNIE BAULER
Attn: Bill Badger
825 Jadwin Avenue
Richland WA 99354

CODE 805603128 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

x 10A. MODIFICATION OF CONTRACT/ORDER NO.
DE-AC06-08RL14788

10B. DATED *(SEE ITEM 13)*
06/19/2008

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER *(Specify type of modification and authority)* Clause I.140, DEAR 970.5204-2 Laws, Requlations and DOE Directives

E. IMPORTANT: Contractor ☐ is not. ☒ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 805603128
The purpose of this modification is to update Section C, Table C.5, Summary of Contract Deliverables, by mutual agreement of the parties for no change to the contract cost and contract fee. This revision establishes the date for a deliverable required by the Contractor Requirements Document of DOE Order 413.3 stipulated in J.2.

Contract revisions are detailed in Redline Strikeout Continuation page, a replacement Conformed Section C is provided with this Modification. There are no other changes to the Terms and Conditions of this contract.
Payment:
Period of Performance: 06/19/2008 to 09/30/2018

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Jenise C. Connerly

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA
Signature on File
(Signature of Contracting Officer)

16C. DATE SIGNED
07/16/2018

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE 1 OF PAGES 2

2. AMENDMENT/MODIFICATION NO. 0664

3. EFFECTIVE DATE See Block 16C

4. REQUISITION/PURCHASE REQ. NO.

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE 00601

Richland Operations Office
U.S. Department of Energy
Richland Operations Office
P.O. Box 550, MSIN A7-80
Richland WA 99352

7. ADMINISTERED BY *(If other than Item 6)* CODE 00601

Richland Operations Office
U.S. Department of Energy
Richland Operations Office
P.O. Box 550, MSIN A7-80
Richland WA 99352

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CH2M HILL PLATEAU REMEDIATION COMPANY
Attn: ANNIE BAULER
Attn: Bill Badger
825 Jadwin Avenue
Richland WA 99354

CODE 805603128 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

X 10A. MODIFICATION OF CONTRACT/ORDER NO. DE-AC06-08RL14788

10B. DATED *(SEE ITEM 13)* 06/19/2008

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
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	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER *(Specify type of modification and authority)* Clause I.140, DEAR 970.5204-2 Laws, Regulations and DOE Directives

E. IMPORTANT: Contractor ☐ is not. ☒ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 805603128

The purpose of this modification is to update Section C, Table C.5, Summary of Contract Deliverables, by mutual agreement of the parties for no change to the contract cost and contract fee. This revision establishes the date for a deliverable required by the Contractor Requirements Document of DOE Order 413.3 stipulated in J.2.

Contract revisions are detailed in Redline Strikeout Continuation page, a replacement Conformed Section C is provided with this Modification. There are no other changes to the Terms and Conditions of this contract.

Payment:

Period of Performance: 06/19/2008 to 09/30/2018

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*
L.Ty Blackford, President and CEO

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED 7/12/18

16B. UNITED STATES OF AMERICA
(Signature of Contracting Officer)

16C. DATE SIGNED

Table C.5, Summary of Contract Deliverables

Deliverable Number	Deliverable	DOE		Deliverable Due Date[1]
		Action	Response Time[2]	
C.2.1-1	Transition Plan	Approve	5 working days	No later than August 1, 2008[3]
C.2.1-2	Statement of Material Differences[4]	Approve	30 days	30 days after contract Notice to Proceed
C.2.1-3	Transition Agreement(s)	Approve	15 days	45 days after contract Notice to Proceed
C.2.1-4	Weekly Written Transition Status Reports	Information	N/A	Weekly during Transition
C.2.2.4.1-1	Lessons Learned Report for PFP Facilities	Review	N/A	60 Days after completion of CD-4~~TBD~~
C.2.3.1-1	Strategic Plan for integration of the waste treatment/disposal functions	Approve	30 days	180 days after completion of Transition
C.2.3.12-1	Update IDF Performance Assessment	Approve	180 days	At DOE Direction
C.2.3.12-2	Update IDF Waste Acceptance Criteria	Approve	60 days	At DOE Direction
C.2.4.1.1-1	Evaluation/Report with recommendations for changes in Groundwater Project activity	Information	N/A	180 days after completion of Transition
C.2.4.1.1-2	Plan for gaining community and stakeholder understanding of groundwater objectives and approaches	Review	30 days	180 days after completion of Transition
C.2.4.1.1-3	Prioritized list of recommended service water line upgrades or storm water runoff control projects	Information	N/A	180 days after completion of Transition and biennially thereafter

[1] All days refer to calendar days. When a scheduled date within this table falls on a Friday, weekend, or federal holiday, the deliverable or DOE response is due the next business day.
[2] Number of calendar days for DOE to execute its GFS/I responsibilities to provide review, approval, and/or certification action on the deliverable following Contractor submission of an acceptable product; or DOE comments on the deliverable following Contractor submission of an unacceptable product that will require revision and re-submission for DOE review, approval, and/or certification action. Documentation of DOE approval will be provided by copying the contractor on the transmittal memorandum to the regulatory agency.
[3] Deliverables that specify days from "contract Notice to Proceed" shall be calculated from August 1, 2008.
[4] Updates to the Statement of Material Differences may be made through day 45 after contract Notice to Proceed.

Note: The phrase "or current version" refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

PART I – THE SCHEDULE

SECTION C – STATEMENT OF WORK

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C.1 PLATEAU REMEDIATION CONTRACT (PRC) OVERVIEW AND GENERAL REQUIREMENTS

C.1.1 Background

The 586-square-mile Hanford Site is located along the Columbia River in southeastern Washington State (illustrated in Figure C.1-1). A plutonium production complex with nine nuclear reactors and associated processing facilities, Hanford played a pivotal role in the nation's defense for more than 40 years, beginning in the 1940s with the Manhattan Project. Today, under the direction of the U.S. Department of Energy (DOE), Hanford is engaged in the world's largest environmental cleanup project, with a number of overlapping technical, political, regulatory, financial and cultural issues.

Challenges at the Hanford Site include approximately 53 million gallons of radioactive and chemically hazardous waste in 177 underground storage tanks (seven of which have been emptied), ~2,300 tons (~2,100 metric tons) of spent nuclear fuel, ~11.5 tons (~10.5 metric tons) of plutonium in various forms, ~25 million cubic feet (750,000 cubic meters) of buried or stored solid waste, and groundwater contaminated above drinking water standards, spread out over about 80 square miles (208 square kilometers), approximately 1,600 waste sites of which 1,180 remain to be remediated and approximately 1,450 facilities of which about 400 are contaminated (as of September 2005).

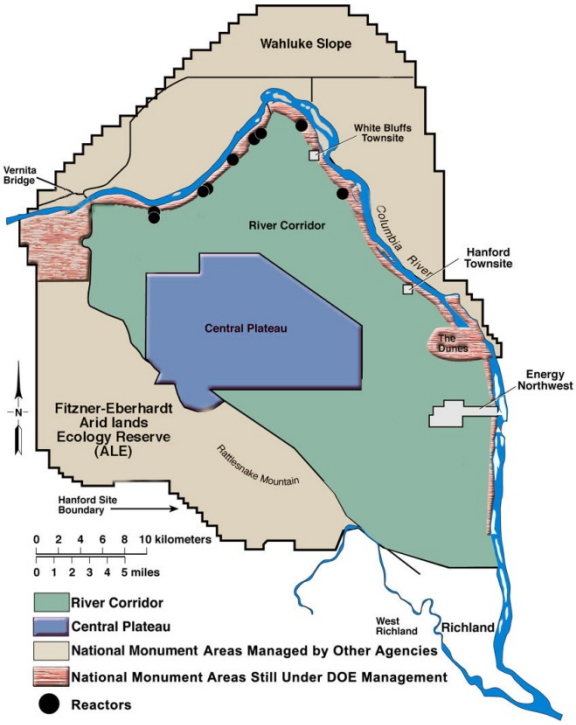

Figure C.1-1
Hanford Site

In May 1989, DOE, the U.S. Environmental Protection Agency, and the State of Washington Department of Ecology signed the landmark Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement (TPA). The TPA outlines legally enforceable milestones for Hanford cleanup over the next several decades.

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

DOE has two Federal offices at Hanford, whose mission is environmental cleanup -- the DOE Richland Operations Office (DOE-RL), which is responsible for nuclear waste and facility cleanup, and overall management of the Hanford Site; DOE-RL's mission is to restore the Columbia River corridor and transition the Hanford Central Plateau. The DOE Office of River Protection (DOE-ORP), which is responsible for cleanup of Hanford Site tank waste; DOE-ORP's mission is to retrieve and treat Hanford's tank waste and close the tank farms to protect the Columbia River. Each Office oversees separate contracts held by private companies. For purposes of this Contract, the land, facilities, property, projects and work performed and overseen by DOE-RL and DOE-ORP constitute the "Hanford Site." The following is a description of the DOE prime contracts at the Hanford Site and their workscope:

Contracts Managed by DOE-ORP

- Hanford Analytical Services Contract provides analysis of highly radioactive samples in support of Hanford Site projects. These services are performed in the 222-S Laboratory Complex located in the 200 Area of the Hanford Site.

- Tank Operations Contract (TOC), when awarded, will include operations and construction activities necessary to store, retrieve and treat Hanford tank waste, store and dispose of treated waste, and begin to close the tank farm waste management areas to protect the Columbia River.

- Tank Farm Management Contract (TFC) includes operations and construction activities necessary to store, retrieve and treat Hanford tank waste and store and dispose of treated waste. This scope will be included in the TOC when it is awarded.

- Waste Treatment and Immobilization Plant (WTP) Contract includes design, construction and commissioning of a vitrification facility that will convert radioactive tank wastes into glass logs for long-term storage. The WTP is being constructed on the Hanford Site Central Plateau.

Contracts Managed by DOE-RL

- Energy Savings Performance Contract (ESPC) includes steam service to support heating and other operations at 200 Area facilities. The contract may include energy conservation measures, such as upgrading lighting systems, pumping systems, automation systems, heating, ventilation, and air conditioning system; and adding utility monitoring and control systems.

- Hanford Site Occupational Medical Services Contract provides occupational health services to personnel at Hanford including medical monitoring and qualification examinations, human reliability testing, and records management.

- Plateau Remediation Contract (PRC), when awarded, will include completion of the Plutonium Finishing Plant (PFP) project; non-tank farm waste disposal activities: groundwater monitoring and remediation; facility and waste site characterization, surveillance and maintenance, regulatory document preparation, and remediation. The contract also includes options to remediate facilities and waste sites.

Note: The phrase "or current version" refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

- Mission Support Contract (MSC), when awarded, will provide DOE-RL, DOE-ORP, and their contractors with the infrastructure and site services necessary to accomplish the Site mission.

- Project Hanford Management Contract (PHMC) includes cleanup and support activities, with the exception of DOE-ORP scope, at the Hanford Site. This scope will be included in the MSC and the PRC, when the contracts are awarded.

- River Corridor Closure Contract (RCCC) includes closing the Hanford Site River Corridor through deactivation, decontamination, decommissioning, and demolishing excess facilities; placing former production reactors in an interim safe and stable condition; remediating waste sites and burial grounds; and transitioning the River Corridor to long-term stewardship.

Another DOE Office -- the Pacific Northwest Site Office (PNSO), a component of the DOE Office of Science -- oversees the science and technology mission operated by the contractor-operated Pacific Northwest National Laboratory (PNNL). PNNL is an Office of Science multi-program laboratory that conducts research and development activities, including technology programs related to the Hanford cleanup mission.

In addition to the cleanup mission, DOE leases Hanford land to non-DOE entities, such as the Laser Interferometer Gravitational Wave Observatory (LIGO), and the State of Washington, which in turn leases the land to US Ecology, Inc., a private firm that operates the Hanford Site burial grounds for commercial low-level waste. DOE also leases land to Energy Northwest (a consortium of public utility companies) that oversees the Northwest's only operating commercial nuclear power reactor, the *Columbia Generating Station*. None of these operations is associated with the Federal cleanup work at Hanford.

C.1.2 Contract Purpose and Overview

The purpose of this Contract is to continue the environmental cleanup of select portions of the Hanford Site. The Contractor has the responsibility for determining the specific methods and approaches for accomplishing the identified work. This Contract applies performance-based contracting approaches and expects the Contractor to implement techniques that emphasize safe, efficient, and measurable results.

C.1.3 Scope Summary

The workscope for this Contract includes:

- *Plutonium Finishing Plant (PFP) Closure.* Provide safe and compliant storage of special nuclear material (SNM) at PFP until it has been removed from the PFP complex; operate and maintain the PFP facilities and associated waste sites, structures, operating systems and equipment, and monitoring systems in a safe, compliant, and energy-efficient manner within the authorization envelope; maintain radiological control and access control to ensure personnel safety; remove SNM from PFP and transport to an assigned location; demolish PFP complex facilities to slab-on-grade condition; and prepare, package, and disposition waste streams, as required.

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

- *Waste Treatment and Disposal.* Perform activities necessary for safe and secure underwater storage of cesium and strontium capsules, and storage of spent nuclear fuels (SNF); liquid waste storage and treatment; waste storage and disposal; low-level waste (LLW) and mixed low-level waste (MLLW) treatment; transuranic (TRU) waste certification support; waste retrieval; TPA Milestone M-91 upgrades to T Plant; and overall facility operations.
- *Groundwater/Vadose Zone Project.* Perform groundwater and ecological sampling and monitoring, well installation, well maintenance, borehole logging, on-going/new remedy operations, and well decommissioning.
- *Facility and Waste Site Minimum-Safe/Surveillance and Maintenance (S&M).* Perform activities necessary for Hanford Site structures and waste sites identified in the Section J Attachment entitled, *Supplemental Work Description Tables*.
- *Fast Flux Test Facility.* Maintain FFTF in a safe and compliant manner and perform near-term shutdown activities.
- *Geographical Zone Remediation.* Remediate and close U Plant and Non-Radioactive Dangerous Waste Landfill (NRDWL)/BC Control geographical zones.
- *Groundwater, Soil, and Facility Regulatory Decision/Other Documents.* Characterize assigned waste sites and facilities, complete analysis of remediation options, and prepare required regulatory and other decision documents necessary to implement remedial actions.
- *100 K Area*. Maintain 100K Area in a safe and compliant manner; dewater K East Basin; demolish K East Basin and superstructure; complete procurement, construction, and acceptance testing of the K Basin Sludge Treatment System; treat the balance of K Basin sludge; dewater K West basin, demolish K West basin and superstructure; place K East and K West reactors in an Interim Safe Storage (ISS) configuration; and remediate and close the remainder of the 100K Area.
- *618-10 and 618-11 Burial Grounds*. Initiate and complete field remediation and other waste disposition activities for the 618-10 and 618-11 burial grounds.

In addition to the above activities, the PRC may also perform (on a funding available basis):

- Remediation and closure of other specified geographical zones;
- Transfer of cesium and strontium capsules from Waste Encapsulation and Storage Facility (WESF) to dry storage;
- Operation of the Environmental Restoration Disposal Facility (ERDF).
- Design of the Fuel Preparation Facility; and
- Design and construction of alternate TRUPACT loadout capability;

C.1.4 Organization of the *Statement of Work*

This *Statement of Work* (SOW) is divided into five sections, with Section C.1 containing the background, contract purpose and overview, scope and organization of the *Statement of Work;* Section C.2, *Description of Project Performance Requirements*; Section C.3, *Description of Project Support Performance Requirements*; Section C.4, *Government-Furnished Services and Information*; and Section C.5, *Summary of Contract Deliverables.*

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

Additional scope reference information that supports this Section C, *Statement of Work*, is found in Section H Clauses and in the Section J, Attachments entitled, *Hanford Site Services and Interface Requirements Matrix* and *Supplemental Work Description Tables*.

C.2 DESCRIPTION OF PROJECT PERFORMANCE REQUIREMENTS

The Contractor shall provide all personnel, facilities, equipment, materials, services, and supplies to complete the Contract workscope, except for the services and information identified as Government-Furnished Services and Information (GFS/I) and as stipulated in the matrix included in Section J Attachment entitled, *Hanford Site Services and Interface Requirements Matrix*.

The Contractor shall plan and perform the work under this Contract in accordance with the Section H Clause entitled, *Environmental Responsibility*, which requires compliance with current and future TPA milestones. In performance of this Contract, the Contractor shall comply with all applicable laws and regulations, DOE directives as identified in the Section J Attachment entitled, *Requirements Sources and Implementing Documents*.

C.2.1 Transition

General Scope:

The Contractor shall transition all on-going workscope; transition any subcontract work that the Contractor elects (or is directed by DOE) to continue under an existing subcontract with an incumbent performer; complete workforce transition in accordance with the requirements of Section H, *Special Contract Requirements;* and deliver a completed *Transition Plan* and *Transition Agreements*.

Detailed Scope and Requirements:

The Contractor shall submit a *Transition Plan* for DOE approval (Deliverable C.2.1-1) that provides a description of all necessary transition activities, involved organizations, and transition schedule. The objectives of the *Transition Plan* are to prepare for implementation of the Contract and minimize the impacts on continuity of operations. The Contractor is responsible for performing due diligence to ensure that all transition activities are identified and completed during the Transition Period. The Contractor shall coordinate directly with the PHMC, RCCC, TFC, DOE, and others to finalize *Transition Agreements* and complete transition of all on-going work.

The Contractor shall develop the inter-contractor ordering and financial agreements that are necessary to support transition and Contract performance, and is responsible for the costs incurred or to be recovered under these agreements.

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

During the Transition Period, the Contractor shall identify any material differences in the systems, facilities, waste sites, property and services described in this *Statement of Work*, the tables in the Section J Attachment entitled, *Supplemental Work Description Tables*, and actual conditions at the end of the transition period. The Contractor shall prepare and submit a *Statement of Material Differences* (Deliverable C.2.1-2).

The Contractor shall conduct a joint reconciliation of the government property inventory with the predecessor contractor. This information shall be used to provide a baseline for the succeeding contract, as well as, information for closeout of the predecessor contract.

During the Transition Period and prior to assuming control and responsibility for Safeguards and Security (SAS) responsibilities, the Contractor shall be subject to a DOE SAS initial survey conducted in accordance with U.S. Department of Energy (DOE) Manual (M) 470.4-1, *Safeguards and Security Program Planning and Management*. The results of the survey shall be documented and form the basis for DOE authorization for the PRC to assume SAS responsibilities, in particular, responsibility for SNM. Following the survey, the Contractor shall assume responsibility for all applicable SAS resources, materials, facilities, documents, and equipment.

The Contractor shall:

- Coordinate directly with the other Hanford Site contractors to finalize the *Transition Agreement(s)* and complete transition of all on-going work;
- Develop the inter-contractor ordering and financial agreements that are necessary to support transition and Contract performance, and be responsible for the costs incurred under these agreements; and
- Submit final *Transition Agreement(s)* (Deliverable C.2.1-3) that includes the signatures of all Contractor transition parties.

The Contractor shall support DOE in-process verification of Contract transition, provide weekly written transition status reports (Deliverable C.2.1-4) to the DOE for information, and be accountable for all work performed under this Contract at the end of the Transition Period.

Prior to the completion of the Transition Period, DOE will provide workscope direction that will be in effect from initiation of the *Base Period* until DOE approval of the Contractor's initial *Performance Measurement Baseline* submittal.

C.2.2 Plutonium Finishing Plant Closure Project

<u>Background:</u>

From 1949 through early 1989, the Plutonium Finishing Plant (PFP) Complex was used to process plutonium nitrate solution into plutonium metal or oxide powder to support the nation's weapons production facilities or fabrication of mixed-oxide reactor fuel. DOE committed to demolish the PFP facility to 'slab-on-grade' by the end of fiscal year (FY) 2016.

Note: The phrase "or current version" refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

The inventory of SNM at PFP has been converted to configurations suitable for shipment and/or storage. The plutonium materials packaged in compliance with DOE-STD-3013-2004 (3013), *Stabilization, Packaging, and Storage of Plutonium-Bearing Materials* are currently stored in vaults at PFP awaiting the DOE decision to ship to a DOE-approved facility for long-term storage and disposition. A decision is expected to be announced and shipping initiated prior to completion of Contract transition.

At the time of Contract transition, the predecessor contractor will have initiated de-inventory of the DOE-STD-3013-2004-compliant containers containing SNM to an off-site DOE-approved storage facility. Approximately 800 of these containers will remain to be de-inventoried.

Un-irradiated and slightly irradiated reactor fuel is also stored within the PFP Protected Area. This material is planned to be shipped to other DOE facilities by the end of fiscal year (FY) 2010 to allow a reduction in PFP security requirements and costs. Fuel inventory at the time of Contract transition includes 13 casks of un-irradiated fuel, 6 casks of slightly irradiated fuel, and miscellaneous sources and standards used for material shipments and decontamination and decommissioning (D&D). When plutonium and reactor fuel de-inventory is complete, there will be no need to maintain a Protected Area.

C.2.2.1 Maintain Safe and Secure Special Nuclear Material

General Scope:

The Contractor shall provide safe and compliant storage of the SNM inventory at PFP, including fuels, oxide, and metal packaged into DOE-STD-3013-2004-compliant containers; SNM sources and standards; and hold-up material within processing equipment and structures.

The Contractor shall maintain an SAS-approved boundary for the 2736-Z/ZB Vault Complex and comply with International Atomic Energy Agency (IAEA) safeguards requirements.

Detailed Scope and Requirements:

The Contractor shall:

- Manage Material Control and Accountability (MC&A), consistent with Section C.3.3.1, *Safeguards and Security* of this *Statement of Work,* including SNM custodial services, oversight, internal audits, tamper indicating device program, SNM vault management, and regularly scheduled or special inventories (e.g., bi-monthly, semi-annual, annual, etc.) for all remaining material balance areas (MBA);
- Provide facility access and information to MSC in support of the MC&A program;
- Perform DOE-STD-3013-2004-compliant container radiography surveillances (up to 50 per year or as otherwise directed by the DOE-STD-3013-2004 Integrated Surveillance Program), semi-annual sealed-source inspection dose rate measurements (number varies), and monthly container inspection for fuels;
- Provide facility access to MSC personnel to maintain all facility and plant essential SAS equipment, systems and/or instrumentation within the PFP complex;
- Comply with applicable documented safety analysis and authorization basis requirements;

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

- Perform surveillance of the PFP vault/storage complex, including nuclear process, radiation control, ventilation, and power related surveillances;
- Perform preventative maintenance to maintain equipment in accordance with designed operating conditions and to extend equipment life within the vault and associated rooms located in 2736-Z and 2736-ZB facilities;
- Perform maintenance and repair of stabilization and packaging equipment, as necessary to support D&D and any DOE-STD-3013-2004-compliant container repackaging; and
- Comply with IAEA requirements and agreements.

C.2.2.2 Maintain Safe and Compliant PFP

General Scope:

The Contractor shall maintain worker/public health and safety in accordance with applicable regulations during all stages of the closure project.

Detailed Scope and Requirements:

The Contractor shall maintain the PFP Complex facilities in a safe, compliant, and energy-efficient condition while deactivation and demolition activities are being performed.

The Contractor shall upgrade systems and equipment in order to maintain a safe and compliant facility. The Contractor shall complete projects for building occupancy, as necessary. Major upgrades currently planned include:

- Switchgear, Breaker, Electrical Upgrades;
- Sanitary Water Upgrades;
- Instrument Air Compressor Upgrades;
- Fire Protection System Upgrades, and
- Exhaust Fan #4 Upgrades.

C.2.2.3 Disposition Special Nuclear Material

General Scope:

The Contractor shall complete the disposition of SNM and nuclear fuel inventory stored at the PFP Complex in a manner compliant with the Design Basis Threat protection strategy.

C.2.2.3.1 3013 Container De-Inventory

General Scope:

The Contractor shall de-inventory the approximately 800 remaining DOE-STD-3013-2004-compliant containers containing SNM to an off-site DOE-approved storage facility. The Contractor shall maintain packaging and loading capabilities to support de-inventory activities, and maintain the DOE-STD-3013-2004-compliant container database and other necessary documentation.

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

Detailed Scope and Requirements:

The Contractor shall:

- Prepare and present shipper/receiver agreement documents, and transportation documents for packaging, transportation, and receipt by the designated off-site receiving facility;
- Maintain packaging and loading capability to support sustained de-inventory operations and support activities; maintain compliant, dedicated quality assurance; and maintain security;
- Maintain chain-of-custody protocols throughout de-inventory and maintain continuity throughout inactive shipping intervals;
- Comply with documented safety analysis and authorization basis requirements throughout de-inventory;
- Prepare DOE-STD-3013-2004-compliant containers for packaging, and package the containers in 9975 Type B fissile material shipping packages meeting all applicable requirements for shipment to the designated off-site receiving facility;
- Maintain configuration control of a secure, dedicated database for the pedigree of each packaged DOE-STD-3013-2004 container in its correspondent, dedicated 9975 Type B fissile material shipping package;
- Maintain pre-load and post-load shipping package leak testing capability throughout de-inventory campaign;
- Complete calorimetric measurements on all DOE-STD 3013-2004-compliant containers in their pre-loaded and final packaging configuration for shipment;
- Complete SNM de-inventory to the designated off-site receiving facility; and
- Complete de-inventory, shipping, and receiving closeout documentation upon completion of SNM de-inventory.

C.2.2.3.2 Store/De-inventory Un-irradiated Fuel

General Scope:

The Contractor shall maintain safe and secure storage capability through final de-inventory activities. The Contractor shall plan for and de-inventory 13 core component containers (CCCs) containing un-irradiated fuel assemblies, using the Hanford Un-irradiated Fuel Package (HUFP), for shipment to an off-site DOE-approved storage facility.

Detailed Scope and Requirements:

The Contractor shall:

- Maintain safe, secure, and compliant storage capability through final de-inventory actions;
- Establish and maintain packaging and loading capability to support de-inventory operations and support activities;
- Prepare and present programmatic documentation, shipper/receiver agreement documents, and transportation documents for packaging, transportation, and receipt by

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the designated off-site receiving facility;

- Establish and maintain compliant, dedicated, quality assurance, security, and chain-of-custody protocols throughout de-inventory and maintain continuity throughout inactive shipping intervals;
- Comply with documented safety analysis and authorization basis requirements throughout de-inventory;
- Prepare HUFP for packaging, and package the CCCs in HUFP's for shipment to the designated off-site receiving facility;
- Establish procurement procedures, quality controls, acceptance criteria, and storage and handling controls for the procurement and receipt of approximately 13 HUFP shipping packages for de-inventory;
- Maintain configuration control of a secure, dedicated database for the pedigree of each packaged CCC in its correspondent, dedicated HUFP shipping package;
- Establish pre-load and post-load shipping package leak testing capability and maintain throughout de-inventory campaign;
- Complete un-irradiated fuel de-inventory to the designated off-site receiving facility; and
- Complete de-inventory, shipping, and receiving closeout documentation upon completion of un-irradiated fuel de-inventory.

C.2.2.3.3 Store/De-Inventory Slightly Irradiated Spent Fuel

General Scope:

The Contractor shall maintain safe and secure storage capability through final de-inventory activities. The Contractor shall plan for and de-inventory 6 casks of slightly irradiated fuel, for shipment to the Canister Storage Building (CSB). The scope includes establishing and maintaining packaging and loading capabilities to support these de-inventory activities, as well as developing and maintaining the necessary documentation.

Detailed Scope and Requirements:

The Contractor shall:

- Provide for safe, secure, and compliant storage of slightly irradiated spent fuel through final de-inventory activities;
- Prepare and present programmatic documentation, shipper/receiver agreement documents, and transportation documents for packaging, transportation, and receipt by the designated receiving facility;
- Establish and maintain compliant, dedicated quality assurance, security, and chain-of-custody protocols throughout de-inventory and maintain continuity throughout inactive shipping intervals;
- Complete transfer of slightly irradiated spent fuel to the Canister Storage Building; and
- Complete de-inventory, shipping, and receiving closeout documentation upon completion of de-inventory.

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

C.2.2.3.4 Misc. Fuels/Materials De-inventory

General Scope:

PFP utilizes approximately 160 sources and standards to perform required non-destructive assays of the stored SNM inventory, including mixed-oxide fuel, oxide and metal packaged into DOE-STD-3013-2004-compliant containers, and hold-up material within plant processing equipment and structures. The sources and standards are comprised of SNM that require phased disposition following de-inventory of DOE-STD-3013-2004-compliant containers, and during plant decommissioning. The Contractor shall package and disposition sources and standards. The standards (National) may be returned to the Offsite Source Recovery Project at the Los Alamos National Laboratory (LANL) using approved packaging. Other excess standards and sources shall be discarded as waste when no longer required.

Detailed Scope and Requirements:

Following shipment of plutonium-bearing material packaged in DOE-STD-3013-2004-compliant containers and stored fuel, the Contractor shall package sources and standards not needed for D&D of the facility. The Contractor shall either ship sources and standards to an authorized off-site location, or dispose of the sources as waste.

Upon completion of facility D&D, the Contractor shall package and transfer all remaining sources and standards to an authorized off-site location, or dispose of the sources as waste.

C.2.2.4 Remediation Activities

In the course of remediation, the Contractor shall develop and implement a graded approach to maintain compliance with 10 CFR 830, *Nuclear Safety Rule*. The Contractor shall maintain safety basis document(s) until the hazards are reduced to a level that the safety basis document(s) can be proposed for elimination (i.e., less than Hazard Category 3).

C.2.2.4.1 Facility Demolition

General Scope:

The Contractor shall demolish PFP facilities to slab-on-grade and stabilize the site for S&M.

Detailed Scope and Requirements:

The Contractor shall:

- Prepare and submit Removal Action Work Plans containing specific requirements for each facility, consistent with the PFP Above-Grade Structures Engineering Evaluation/Cost Analysis (EE/CA) for DOE approval;
- Demolish PFP buildings to slab-on-grade in compliance with the TPA;
- Remove the 236-Z piping in the pipe trench, seal all exterior penetrations, and install a 4-inch concrete cover cap on the slab;
- Isolate manholes 5 and 6 for subsequent disposition under PFP Geographical Zone remediation (SOW Section C.2.5.4, *Remediation – Closure*);

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- Backfill below-grade portions of facilities or stabilize as coordinated with final remediation activities;
- Remove/demolish yard area structures and equipment;
- Remove contaminated pavement or seal with a concrete over-slab or similar cover;
- Grade, stabilize and apply weed control to the entire PFP area;
- Prepare and submit the DOE TPA Milestone Completion Verification Packages; and
- Prepare a D&D Lessons Learned report that provides detailed cost data and an analysis of D&D methods and operations used for the disposition/demolition of the PFP facilities listed in Table C.2.2.4.1, *PFP Building/Facilities Requiring Disposal/Demolition* (Deliverable C.2.2.4.1-1).

Structures identified in Table C.2.2.4.2, *PFP Building/Facilities Not Requiring Removal/Demolition for Slab-on-Grade End Points*, and below-grade structures, such as, buried utilities (tanks, pipes, conduit, etc.) are beyond the scope of this task and will be dispositioned as part of Section C.2.4.6, *OU Decision Document Activities*; Section C.2.5.3, *Remediation Optimization*; and Section C.2.5.4, *Remediation – Closure*. Final remediation planning will be coordinated with Section C.2.5.4, *Remediation –Closure*.

Table C.2.2.4.1, *PFP Building/Facilities Requiring Disposal/Demolition* comprises the list of PFP buildings/facilities requiring disposition/demolition. Demolition scope includes additional yard structures and equipment.

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Table C.2.2.4.1, PFP Building/Facilities Requiring Disposition/Demolition

Building No.	Title
225WC	PFP Wastewater Sampling Facility
234-5Z	PFP Plutonium (Pu) Processing and Storage
234-5ZA	PFP Change Room Addition
236Z	Plutonium Reclamation Building
242Z	Waste Treatment and Americium Extraction Facility
242ZA	Monitoring Building
243Z	Low-Level Waste Treatment Facility
243ZA	Low-level Waste Storage Facility
243ZB	Cooling Towers and Concrete Pad
2503Z	13.8KV Electrical Switch Yard Building
252Z1	Electrical Substation
267Z	Fire Riser #9 Valve House (North side of 234-5Z, near foyer)
268-Z	Mobile TRU Waste NDA Facility (SuperHENC)
2701ZA	Patrol Central Alarm Monitoring Station/Z-Plant
2701ZC	Vehicle Inspection, Covered Shelter
2701ZD	PFP Badge House
2701-ZE	Vehicle Inspection, Structure
2704Z	Office Administration Building
2705Z	PFP Operations Control Facility
270Z	PFP Operations Support Bldg
2712Z	Stack Sampling and Monitoring Station (on 291Z001)
2721Z	Emergency Generator Service Building
TK-701-12B	Underground Diesel Storage Tank (for 2721Z generators)
2727Z	Supply Storage Building
2729Z	Storage Building
2731ZA	Container Storage Building; Liquid Nitrogen Storage Tank and N2 Generator
2734ZA	Gas Cylinder Storage Building
2734ZB	Gas Storage
2734ZC	Gas Storage
2734ZD	Process Gas Storage
2734ZJ	Liquid Nitrogen Storage Pad and Tank
2734ZK	Gas Cylinder Storage
2734ZL	Hydrogen Fluoride Facility
2735Z	Chemical Storage Tanks and Catch Basin
2736Z	Plutonium Storage Building
2736ZA	Plutonium Storage Ventilation Structure
2736ZB	Plutonium Storage Support Facility
2736ZC	Cargo Restraint Transport Dock
2736ZD	LAMPRE Fuel Storage Cask
2736ZE	Interim Fuel Storage Vault
2736ZF	Interim Fuel Storage Vault
2736ZG	Interim Fuel Storage Vault
2736ZH	Interim Fuel Storage Vault
2736ZI	Interim Fuel Storage Vault
2736ZM	Interim Fuel Storage Vault

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Building No.	Title
2736ZN	Interim Fuel Storage Vault
2736ZO	Interim Fuel Storage Vault
2736ZP	Interim Fuel Storage Vault
2736ZQ	Interim Fuel Storage Vault
2736ZR	Interim Fuel Storage Vault
2736ZS	Interim Fuel Storage Vault
2736ZT	Interim Fuel Storage Vault
2736ZU	Interim Fuel Storage Vault
2778-Z	Hardened Guard Station (southern buffer zone)
291Z	Ventilation Exhaust Fan House
291Z001	Main Exhaust Air Stack (234-5Z, 236Z, 242Z)
296Z005	Stack, 273ZB Shipping/Receiving Bldg Exhaust
296Z006	Stack, 2736ZA Bldg/Plutonium Storage Ventilation System Exhaust
296Z007	Stack, adjacent to 2736ZB, East Side
296Z015	Stack, 243-Z
637-A	ADRIS transformer attached to 2736-ZB
HS-45	Hazardous Waste Storage (East of 234-5Z)
HS-46	Chemical Storage (West of 234-5Z)
HS-47	Hazardous Waste Storage (West of 234-5Z)
MO-014	Mobile Office inside PFP
MO-428	Mobile Office inside PFP
MO-429	Mobile Office inside PFP
MO-432	Mobile Office inside PFP
MO-671	Decontamination Trailer (East of 234-5Z)
MO-970	Mobile Office inside PFP
MO-971	Mobile Office inside PFP
2711-B1	Breathing Air Compressor Trailer – North
2711-B2	Breathing Air Compressor Trailer – South
Yard Area	Inner PFP fence, perimeter fence lighting, razor ribbon barriers, hardened fighting positions, perimeter alarm systems, CCTV towers, steam lines, power poles/lines, Conex and other cargo containers, all other structures within the Protected Area installed by PRC

Table C.2.2.4.2, PFP Building/Facilities Not Requiring Removal/Demolition For Slab-on-Grade End Points

Building No.	Title
216-Z-9	Crib, Underground
216-Z-9A	Contaminated Soil Removal Building
216-Z-9B	Mining Facility Operator's Control Room
216-Z-9C	Weather Enclosure
216ZP1	Main Process Facility, 200-ZP-1
216ZP1A	Injection Manifold Building
216ZP1B	Extraction Manifold Building
216ZP1C	Extraction Manifold Building
216Z13	Dry Well
216Z14	Dry Well
216Z15	Dry Well

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Building No.	Title
231-Z	Pu Metallurgy Laboratory
234-5Z-BA	PFP Boiler Annex
234-5Z-BE	PFP Boiler House Electric Annex
241-Z-361	Waste Settling Tank, Underground
2607-WA	Septic tank, drain field
2607-Z	Septic tank, drain field
2607-Z1	Sewage lift station
2607-Z1	Abandoned drain field (West of 2721-Z)
2702Z	Microwave Tower and Support Building
289W	Reduced Pressure Backflow Assembly No 1 (on incoming sanitary water
2901-Z	Export Water Line Valve House
Miscellaneous Yard	Outer Protected Area Fence, High Mast Lighting
Outside PFP	Mobile Offices, Restroom/Shower Trailers, parking lots, steam lines, power poles and lines, 212Z lag storage area and structures
Sub-Grade	Cribs, Ditches, Pipelines, Process Sewers, French Drains, Other Waste Sites

C.2.2.4.2 Maintain 216-Z-9

General Scope:

The Contractor shall maintain the 216-Z-9 facility.

Detailed Scope and Requirements:

The Contractor shall provide minimum-safe surveillance and maintenance for the 216-Z-9 facility until it is dispositioned as part of Plutonium Finishing Plant geographical zone closure.

C.2.2.4.3 Manage and Dispose of PFP Solid Waste

General Scope:

The Contractor shall handle, treat, package, label, store, and ship solid waste (e.g., low-level, low-level mixed, TRU/TRU mixed wastes) from the facility in compliance with applicable state and Federal regulations for disposal at an approved facility.

Detailed Scope and Requirements:

The Contractor shall:

- Procure all required waste containers to support D&D of PFP. Typical containers include 55/85 gallon drums, standard waste boxes, and IP-1 and IP-2 shipping containers;
- Develop and update waste volume projections for organizations that receive PFP waste. The PFP Sampling and Analysis Plans and Removal Action Work Plans identify the disposition paths for the waste/debris generated at PFP; and
- Assume costs associated with management, treatment, and disposal of the PFP waste.

C.2.3 Solid and Liquid Waste Treatment and Disposal

Background:

Solid and liquid waste stabilization and disposition activities are performed in the following facilities:

- T Plant Complex;
- Central Waste Complex (CWC);
- Waste Receiving and Processing Facility (WRAP);
- Low Level Burial Grounds (LLBGs);
- Environmental Restoration and Disposal Facility (ERDF);
- Integrated Disposal Facility (IDF);
- Waste Encapsulation and Storage Facility (WESF);
- Canister Storage Building (CSB)/200 Area Interim Storage Area (ISA);
- 200 Area Liquid Waste Processing Facilities – Effluent Treatment Facility (ETF), Liquid Effluent Retention Facility (LERF), 200 Area Treated Effluent Disposal Facility (TEDF), State Approved Land Disposal Site (SALDS); and

Waste Treatment and Disposal

At the commencement of the Transition Period, there will be approximately 1500 cubic meters (m^3) of contact handled (CH) mixed low-level waste (MLLW) in packages smaller than 10 m^3 in permitted storage requiring treatment under this Contract. There will be an approximate total of 1300 m^3 of remote handled (RH) MLLW in packages of all sizes and CH-MLLW in packages larger than 10 m^3 in permitted storage requiring treatment under this Contract. During the period of FY 2009 through FY 2018, approximately 1300 m^3 of RH and large-size (greater than 10 m^3) MLLW packages requiring treatment will be newly-generated or retrieved (during retrieval of suspect TRU from the LLBGs) and approximately 1800 m^3 in packages less than 10 m^3 of CH-MLLW requiring treatment will be newly generated or retrieved.

Life-cycle information about the radioactive solid waste expected to be managed at Hanford from onsite and offsite generators is available in the *Solid Waste Integrated Forecast Technical* (SWIFT) database. A summary of storage and forecast information for MLLW at the Hanford Site is provided in the *Calendar Year 2005 Hanford Site Mixed Waste Land Disposal Restrictions (LDR) Summary Report*.
The approximate volume of TRU waste in storage and remaining to be certified on October 1, 2008, will be as follows:

- 2200 m^3 of CH TRU/TRUM in drums and Standard Waste Boxes (SWBs);
- 3600 m^3 of CH TRU/TRUM in larger containers; and
- 400 m^3 of RH TRU/TRUM.

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The TPA Milestone M-91 Series requires retrieval and disposition of retrievably-stored suspect TRU waste that was placed in the LLBGs after May 6, 1970. Both CH and RH suspect TRU waste is to be retrieved from Burial Grounds 218-W-4C, 218-E-12B, 218-W-3A, and 218-W-4B. As of October 1, 2008, approximately 5950 m^3 of retrievably-stored CH waste and 130 m^3 of retrievably-stored RH waste will remain to be retrieved.

The generator of the waste shall assume the costs for storage and disposal of LLW, MLLW, and immobilized low-activity waste. In addition, the generator shall assume the costs for treating or processing spent nuclear fuel, LLW, and MLLW to meet safety requirements, environmental requirements, and facility acceptance criteria. The generator of TRU waste shall assume the costs for packaging, storage, certification support, and loading for transport off-site. The DOE Carlsbad Field Office will assume the costs for TRU waste certification and off-site transportation and disposal.

C.2.3.1 Strategic Planning and Integration

General Scope:

The Contractor shall optimize the approach to treat and dispose of wastes covered by this Contract and coordinate with regulators, stakeholders, and off-site commercial or government facilities as needed, to obtain needed capabilities and build agreement for an optimized approach. DOE will lead all discussions with regulators and will make all commitments regarding the approaches used to treat and dispose of waste covered in this Contract scope of work.

Detailed Scope and Requirements:

The Contractor shall:

- Develop, submit for DOE approval, implement, and maintain a *Strategic Plan* (Deliverable C.2.3.1-1) that reflects integration and optimization of the waste treatment/disposal functions and supporting facilities/infrastructure, and identifies significant baseline cost improvement opportunities;
- Annually update and maintain TPA Milestone M-91-03, *Project Management Plan;*
- Operate a waste forecast system to collect and maintain the life-cycle forecast for waste to be managed under this Contract. The forecast shall include all types of radioactive solid waste (e.g., TRU waste, TRU Mixed [TRUM] waste, LLW, MLLW), including *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) waste;
- Coordinate with other Hanford Site contractors and organizations to assure that waste management needs are met, and adequate waste treatment and disposal capabilities are planned and obtained;
- Prepare, conduct, and maintain Performance Assessments (PAs) for PRC waste management facilities in accordance with DOE O 435.1, *Radioactive Waste Management;*
- Provide input and waste management facility access to the MSC for preparation of the *Hanford Site Mixed Waste LDR Report* in accordance with the requirements of the TPA Milestone M-26-01 and related *Resource Conservation and Recovery Act of 1976* (RCRA) land disposal restrictions; and

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- Provide support to DOE in executing its owner role with regulators and stakeholders in the preparation, submission, approval, and defense of decision, regulatory, and supporting documentation associated with PRC waste management facilities.

C.2.3.2 Waste Support Services

General Scope:

The Contractor shall provide waste support services functions.

Detailed Scope and Requirements:

The Contractor shall:

- Assess each generating unit to ensure compliance with the applicable waste acceptance criteria;
- Provide audit capability, including providing auditors, to support the DOE Consolidated Audit Program for audits of external commercial RCRA Treatment, Storage and Disposal (TSD) facilities and laboratories to support the annual request for use of off-site TSDs, as needed;
- Maintain the waste acceptance criteria for PRC waste management facilities;
- Operate a tracking system for waste managed under this Contract; and
- Maintain capability to coordinate receipt of off-site waste and waste from other Hanford Site contractors.

C.2.3.3 Low Level Waste/Mixed Low Level Waste (LLW/MLLW) Treatment

General Scope:

The Contractor shall treat, package, and deliver LLW and MLLW to meet LDR requirements and other applicable disposal requirements.

Detailed Scope and Requirements:

The Contractor is responsible for treatment of CH and RH LLW/MLLW that is either in storage at identified facilities or that is newly-generated by activities under this Contract.

The Contractor shall treat, package, and deliver CH and RH LLW/MLLW in accordance with applicable regulations, DOE directives, and the TPA, to meet disposal facility requirements and acceptance criteria.

The Contractor shall:

- Receive, re-package, store, and dispose of additional wastes from other waste generators.
- Receive waste for treatment from other generators only with prior DOE approval.
- Coordinate with other waste generators, and develop/update a service provider approach (including regulatory, technical, contractual, and other required features).
- Recover costs from other waste generators for providing these services.

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

The proposed waste volume projections and service provider approach shall be subject to periodic DOE review and approval.

C.2.3.4 Solid Low Level Waste (LLW) and Mixed Low Level Waste (MLLW) Disposal

General Scope:

The Contractor shall dispose of LLW and MLLW meeting LDR and other applicable requirements.

Detailed Scope and Requirements:

The Contractor shall dispose of CH and RH LLW/MLLW that meets waste acceptance criteria in accordance with applicable regulations, DOE directives, and the TPA.

The Contractor shall:

- Receive additional wastes that meet waste acceptance criteria from other on-site and off-site waste generators for storage.
- Receive waste for disposal from other generators only with prior DOE approval.
- Coordinate with other waste generators, and develop/update a service provider approach (including regulatory, technical, contractual, and other required features).
- Recover costs from other waste generators for providing these services.

The proposed waste volume projections and service provider approach shall be subject to periodic DOE review and approval.

C.2.3.5 Liquid Waste Treatment and Disposal

General Scope:

The Contractor shall receive, treat and dispose of liquid wastes in accordance with applicable waste acceptance and discharge permit requirements.

Detailed Scope and Requirements:

The Contractor shall maintain the 200 Area liquid waste processing facilities as described in the auditable safety analysis in a ready-to-serve status, which provides the capability to receive, treat, and dispose of liquid effluents consistent with the waste acceptance criteria and the discharge criteria. If directed by the Contracting Officer, the Contractor shall transition the 200 Area liquid waste processing facilities to the Tank Operations Contractor.

The Contractor shall receive liquid waste that meets applicable waste acceptance criteria.

The Contractor shall treat and dispose of liquid waste in accordance with applicable regulations, DOE directives, and discharge permits.

The Contractor shall:

Note: The phrase “or current version” refers to the current version of the applicable DOE Order or directive which is listed in Section J, Attachment J.2

- Receive additional liquid wastes that meet waste acceptance criteria from other waste generators for treatment.
- Receive waste for disposal from other generators only with prior DOE approval.
- Coordinate with other waste generators, and develop/update a service provider approach (including regulatory, technical, contractual, and other required features).

The proposed waste volume projections and service provider approach shall be subject to periodic DOE review and approval.

C.2.3.6 Transuranic (TRU) Waste

C.2.3.6.1 Transuranic Waste Certification

General Scope:

The Contractor shall perform CH-TRU characterization, certification, repackaging, and shipping activities in accordance with approved TRU waste certification program. The Contractor shall provide the services to maintain and close out the Hanford TRU waste certification program.

After the Hanford TRU waste certification program closes, the Waste Isolation Pilot Plant (WIPP) Central Characterization Project (CCP) support the CH-TRU characterization and certification activities at Hanford.

Detailed Scope and Requirements:

The Contractor shall:

- Perform all waste characterization, certification, repackaging, and shipping activities in accordance with approved TRU waste certification program and DOE-EM TRU Waste Shipping Goals;
- Provide resources to receive additional CH-TRU waste from other waste generators for processing that is packaged by the generator(s);
- Provide the facility and capability to load and ship TRU waste;
- Make CH-TRU waste ready for shipment in approved containers eligible for compaction off-site and store in an approved, compliant location;
- Support the Hanford TRU waste certification program by:
    - Providing Real Time Radiography (RTR) equipment, drum assay equipment, and Head Space Gas Sampling (HSGS) if needed; and
    - Participating in a close-out audit of the Hanford certification program;
- Support CCP TRU waste certification program by:
    - Providing CCP with CH-TRU waste that meets the waste characterization and classification requirements established by the DOE Carlsbad Field Office;
    - Providing facility records, packaging records, and other documents necessary for CCP to prepare waste certification packages;
    - Providing the facility and infrastructure to support the installation and operation of the large box Nondestructive Examination (NDE)/Nondestructive Assay (NDA)

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equipment, if needed;

- Providing the necessary public release clearances for CCP generated documents; and
- Providing the infrastructure to support installation, operation, and maintenance of the CCP-provided Real Time Radiography (RTR) equipment, drum assay equipment, Head Space Gas Sampling (HSGS), and mobile loading equipment.

C.2.3.6.2 RH Waste Shipments

General Scope:

The WIPP CCP will perform RH TRU characterization and certification activities at Hanford. The Contractor shall provide support to the CCP for the performance of RH TRU characterization, certification, and shipping activities.

Detailed Scope and Requirements:

The Contractor shall:

- Perform all waste repackaging activities;
- Provide resources to receive additional RH TRU waste from other waste generators for processing. Waste will be packaged by the generator(s) to meet the requirements of the Hanford Site Solid Waste Acceptance Criteria (HSSWAC);
- Provide CCP with RH TRU waste that meets the waste characterization and classification requirements established by the DOE Carlsbad Field Office;
- Provide the infrastructure to support installation and operation of the CCP-provided RTR equipment, drum assay equipment, and mobile loading equipment;
- Provide facility records, packaging records, and other documents necessary for CCP to prepare waste certification packages; and
- Provide the necessary public release clearances for CCP generated documents.

C.2.3.7 Waste Retrieval

General Scope:

The Contractor shall retrieve CH and RH waste in accordance with the requirements established in regulatory, authorization basis, and other supporting requirements documentation and schedule identified in the TPA M-91 milestone series. All retrievably-stored suspect TRU waste shall be removed from the burial grounds and transferred to a TSD facility for disposition.

The Contractor shall ship plutonium-238 material retrieved from the burial grounds to the DOE Savannah River Site, when directed by the Contracting Officer.

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Detailed Scope and Requirements:

The Contractor shall retrieve:

- All suspect CH-TRU waste from Burial Grounds 218-W-4C, 218-E-12B, 218-W-3A, and 218-W-4B.
- All RH-TRU waste from Burial Grounds 218-W-4C, 218-E-12B, 218-W-3A, and 218-W-4B (including waste in Alpha caissons).

The Contractor shall transfer segregated retrieved waste to a treatment, storage, and disposal facility for disposition. Retrieved waste shall be segregated in accordance with the Master Documented Safety Analysis (MDSA) at the burial ground(s) into TRU and low-level waste streams.

The Contractor shall coordinate efforts with the DOE Idaho and the Savannah River Sites to transport 12 drums of plutonium-238 to the DOE Savannah River Site.

The Contractor shall:

- Resolve questions and concerns necessary to acquire approval of revision(s) to the Radioisotope Thermoelectric Generator (RTG) Transportation System Safety Analysis Report for Packaging (SARP).
- Provide support for the loading of 12 drums of Pu-238 into RTGs casks in a suitable facility.
- Develop and execute security plans for the relocation, transportation, and loading of 12 Pu-238 drums as needed.
- Prepare shipper/receiver agreement and reach concurrence with SRS.

C.2.3.8 Waste Management Support Projects

C.2.3.8.1 T Plant Modifications for Sludge Storage

General Scope:

The Contractor shall modify T Plant to receive and store treated sludge from K Basins, pending sludge shipment to WIPP. This sludge will be RH-TRU waste.

Detailed Scope and Requirements:

The Contractor shall:

- Perform modifications at T Plant to prepare for receipt and storage of treated sludge from K Basins, pending sludge shipment to WIPP.
- Provide the capability at T Plant to receive and store the treated sludge;
- Procure High Integrity Containers to store the treated sludge; and
- Perform and support readiness reviews for receipt and storage of the treated sludge.

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C.2.3.8.2 Provide Alternate TRUPACT Loadout Capability

General Scope:

At the direction of the Contracting Officer, the Contractor shall design, procure, construct, and acceptance test the necessary equipment to provide alternate TRUPACT loadout capability.

Detailed Scope and Requirements:

At the direction of the Contracting Officer, the Contractor shall design, procure, construct, and acceptance test the necessary equipment to provide alternate TRUPACT loadout capability. This equipment shall be capable of loading TRU drums into TRUPACT II containers for over the road shipment to WIPP or another DOE site. This capability is being provided as a back-up to the capabilities that currently exist within the WRAP facility.

C.2.3.9 Cesium/Strontium Capsule Transfer to Dry Storage

General Scope:

At the direction of the Contracting Officer, the Contractor shall transfer cesium and strontium capsules from wet storage in Waste Encapsulation Storage Facility (WESF) to dry storage.

Detailed Scope and Requirements:

At the direction of the Contracting Officer, the Contractor shall:

- Design, procure, and construct the systems and components needed to transfer WESF cesium and strontium capsules into dry storage; and
- Transfer cesium and strontium capsules from wet storage in WESF to dry storage.

The Contractor shall support DOE in document preparation and approval processes associated with Project Management requirements identified in DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version).

C.2.3.10 TPA Milestone M-91 Upgrades to T Plant

General Scope:

The Contractor shall provide facility operational capabilities to meet TPA Milestones M-91-01 and M-91-15.

Detailed Scope and Requirements:

The Contractor shall design and construct/upgrade waste management facilities and equipment to receive, repackage, treat, vent, sample, assay, and perform other activities as required to process RH-MLLW, RH-TRU waste, large-package MLLW, and large-package TRU waste consistent with TPA Milestones M-91-01 and M-91-15.

The Contractor shall support DOE in document preparation and approval processes associated

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with Project Management requirements identified in DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version).

C.2.3.11 Fuel Preparation Facility Design

General Scope:

At the direction of the Contracting Officer, the Contractor shall prepare design documents for a hot cell facility to repackage SNF, and the WESF Cesium and Strontium capsules into DOE-standardized canisters.

Detailed Scope and Requirements:

At the direction of the Contracting Officer, the Contractor shall complete activities necessary for approval of Critical Decisions in accordance with DOE O 413.3A. *Program and Project Management for the Acquisition of Capital Assets* (or current version) for a hot cell facility for repackaging SNF and the WESF cesium and strontium capsules into DOE standardized canisters in order to support a FY 2020, *Start of Construction*.

C.2.3.12 Integrated Disposal Facility Authorization to Operate

General Scope:

The Contractor shall perform activities necessary to make Integrated Disposal Facility (IDF) a fully operational facility.

Detailed Scope and Requirements:

The Contractor shall:

- Complete facility startup activities to support receipt and disposal of immobilized low activity glass waste and bulk vitrification test waste;
- Update *Performance Assessment* (Deliverable C.2.3.12-1) and *Waste Acceptance Criteria* (Deliverable C.2.3.12-2) for immobilized low activity glass waste, bulk vitrification test waste, LLW, and MLLW to achieve disposal authorization;
- Modify existing and develop new permits required to receive LLW/MLLW waste for disposal;
- Complete facility startup reviews to support receipt and disposal of LLW/MLLW wastes; and

C.2.3.13 Canister Storage Building/200 ISA Security Upgrades

General Scope:

Slightly irradiated spent fuel (Category I SNM) from PFP will be relocated to the Canister Storage Building (CSB) for safe and secure storage (SOW Section C.2.2.3.3, *Store/De-Inventory Slightly Irradiated Spent Fuel*). Storage of this Category I material at the CSB will require appropriate security upgrades. At the time of Contract transition, the CSB security upgrade designs will be complete.

The Contractor shall install security upgrades within the CSB. Security upgrades outside of the

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CSB will be installed by MSC.

Detailed Scope and Requirements:

The Contractor shall perform facility upgrades within the CSB to support the safe and secure storage of slightly irradiated spent fuel (Category I SNM) from PFP. Security upgrades outside of the CSB will be installed by MSC. The Contractor shall coordinate the installation of these security upgrades with MSC.

C.2.3.14 Facility Management

General Scope:

The Contractor shall maintain facilities on a ready-to-serve basis to:

- Receive and store spent nuclear fuel from on-site generators;
- Store cesium and strontium capsules; and
- Receive, store, treat, and/or dispose LLW, MLLW, TRU waste and other wastes from on-site and off-site generators.

The Contractor shall operate the following facilities in a safe, compliant, energy-efficient, and cost effective manner:

- T Plant Complex;
- Central Waste Complex (CWC);
- Waste Receiving and Processing Facility (WRAP);
- Low Level Burial Grounds (LLBGs);
- Integrated Disposal Facility (IDF);
- Waste Encapsulation and Storage Facility (WESF);
- Canister Storage Building (CSB)/200 Area Interim Storage Area (ISA);
- 200 Area Liquid Waste Processing Facilities – Effluent Treatment Facility (ETF), Liquid Effluent Retention Facility (LERF), 200 Area Treated Effluent Disposal Facility (TEDF), State Approved Land Disposal Site (SALDS); and

At the direction of the Contracting Officer, the Contractor shall receive ERDF from the RCCC and operate ERDF in a safe, compliant, energy-efficient, and cost effective manner.

Detailed Scope and Requirements:

The Contractor shall operate waste management facilities in accordance with DOE requirements, authorization basis documents, state and Federal regulations, TPA, permit conditions and acceptance criteria for LLW, MLLW, TRU waste, other wastes and spent nuclear fuel. The scope includes programs for safe and compliant facility operations, such as:

- Assessments and surveillances;
- Emergency preparedness;
- Engineering;

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- Environmental sampling, monitoring, and reporting;
- Fire protection;
- Maintenance;
- Material control;
- Nuclear safety;
- Occupational safety/Industrial hygiene;
- Permitting;
- Procedure development;
- Grounds maintenance;
- Quality assurance/quality control;
- Radiological control;
- Training; and
- Waste management.

The Contractor shall evaluate facility conditions against current and projected facility use and execute those improvements and system/equipment upgrades necessary to maintain safe, compliant, energy-efficient, and cost-effective operations.

T Plant Complex

The Contractor shall maintain the T Plant Complex within applicable safety basis documents.

The Contractor shall maintain the facility in a ready-to-serve status, which provides the following capabilities:

- Receive and store LLW, MLLW, and TRU waste from on-site and off-site generators consistent with the waste acceptance criteria;
- Repackage, treat, vent, sample, verify, and perform other activities as required to process LLW and MLLW in support of final disposal on-site;
- Repackage, treat, vent, sample, verify, and perform other activities as required to process transuranic waste in support of final disposal at WIPP; and
- Receive and store treated K Basin sludge.

Central Waste Complex (CWC)

The Contractor shall maintain:

- CWC within the applicable safety basis documents; and
- 2727-W Building for the storage of Hallam sodium.

The Contractor shall maintain the facility in a ready-to-serve status, which provides the following capabilities:

- Receive and store LLW, MLLW, TRU waste, and other waste from on-site and off-site generators consistent with waste acceptance criteria; and

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- Store existing Hallam sodium product inventories in the 2727-W.

Waste Receiving and Processing Facility (WRAP)

The Contractor shall maintain WRAP within the applicable safety basis documents.

The Contractor shall maintain the facility in a ready-to-serve status, which provides the following capabilities:

- Receive and store LLW, MLLW, and TRU waste from on-site and off-site generators consistent with the waste acceptance criteria;
- Repackage, treat, vent, sample, verify, assay, examine and perform other activities as required to process TRU waste in support of final disposal at WIPP;
- Repackage, treat, vent, sample, verify, and perform other activities as required to process LLW and MLLW in support of final disposal on-site; and
- Assemble payloads of TRU waste and provide to CCP for shipment to WIPP in accordance with Section C.2.3.6, *Transuranic (TRU) Waste*.

Low Level Burial Grounds (LLBGs)

The Contractor shall maintain the LLBGs within the applicable safety basis documents to execute the work scope in Section C.2.3.3, *LLW/MLLW Treatment* and C.2.3.4, *Solid LLW/MLLW Disposal*.

The Contractor shall maintain the facility in a ready-to-serve status, which provides the following capabilities:

- Receive and dispose of LLW and MLLW from on-site and off-site generators consistent with the waste acceptance criteria in Burial Ground 218-W-5, Trenches 31 and 34;
- Support disposal of naval reactor compartments pursuant to Section I Clause entitled, *DEAR 970.5217-1, Work for Others Program,* consistent with waste acceptance criteria and the *Memorandum of Understanding between the Department of the Navy and the Department of Energy,* in Burial Ground 218-E-12B, Trench 94; and
- Receive and store RH non-mixed waste in Burial Ground 218-W-3AE.

Environmental Restoration and Disposal Facility (ERDF)

At the direction of the Contracting Officer, the Contractor shall accept ERDF from the RCCC.

Following acceptance, the Contractor shall:

- Maintain ERDF within the authorization basis.
- Maintain the facility in a ready-to-serve status to execute the work scope in Section C.2.3.3, *LLW/MLLW Treatment* and C.2.3.4, *Solid LLW/MLLW Disposal;* and to receive/treat/dispose waste in support Hanford remediation activities consistent with the waste acceptance criteria.
- Expand ERDF, as necessary, to accommodate future waste volumes.

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The waste generator shall be responsible for waste disposal costs.

Integrated Disposal Facility (IDF)

The Contractor shall maintain the facility in a ready-to-serve status to execute the work scope in Section C.2.3.3, *LLW/MLLW Treatment* and C.2.3.4, *Solid LLW/MLLW Disposal;* and to receive/treat/dispose waste in support Hanford remediation activities consistent with the waste acceptance criteria.

Until DOE authorizes the Contractor to accept waste, the Contractor shall:

- Maintain IDF within the permit conditions; and
- Maintain the facility in a ready-to-serve status for disposal of immobilized low activity glass waste and bulk vitrification test waste, and waste from future generators to be dispositioned at IDF, in accordance with the permit.

After authorization is received to accept waste, the Contractor shall:

- Maintain the facility in a ready-to-serve status to receive, treat, and dispose of LLW and MLLW from on-site generators consistent with the waste acceptance criteria; and
- Expand IDF, as necessary, to accommodate future waste volumes.

The waste generator shall be responsible for waste disposal costs.

Waste Encapsulation and Storage Facility (WESF)

The Contractor shall maintain WESF within the applicable safety basis documents.

The Contractor shall maintain the facility in a ready-to-serve status, which provides the capability to store the cesium and strontium capsules.

Canister Storage Building (CSB)/200 Area Interim Storage Area (ISA)

The Contractor shall maintain CSB and the 200 Area ISA within the applicable safety basis documents.

The Contractor shall maintain the facility in a ready-to-serve status, which provides the capability to receive and store spent nuclear fuel.

The Tank Operations Contractor is responsible for obtaining the capabilities for receipt of vitrified high-level waste at CSB.

In addition, the Contractor shall:

- Interface with OCRWM and the National Spent Nuclear Fuel Program to review repository documentation and perform analyses to enable final disposition and acceptance of spent nuclear fuel and WESF Capsules at the Yucca Mountain Repository; manage related technical interfaces, and integrate Hanford Site planning associated with Yucca Mountain Repository activities;

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- Provide the necessary equipment to receive, store, and package SNF/HLW inventories;
- Develop compliance information to demonstrate that each spent fuel/high-level waste package conforms to repository requirements;
- Perform activities to support the inclusion of the WESF cesium and strontium capsules in the Yucca Mountain Repository license; and
- Receive, store, and manage SNF/HLW inventories.

C.2.4 Groundwater Vadose Zone Project and Soil Remediation Decision Documents

Background:

Past operations in the Central Plateau have resulted in facilities, waste sites and groundwater contaminated with hazardous and radioactive materials. DOE recognizes that coordination of Hanford Site groundwater and vadose zone cleanup activities is critical to providing adequate protection of the Columbia River. To meet this challenge, DOE consolidated all groundwater and vadose zone work under a single project activity; is actively integrating groundwater, vadose zone, and source-area cleanup decisions; and is actively integrating Hanford Site modeling and risk assessment activities.

The Contractor is responsible for managing the integrated Hanford Site groundwater project.

This Section of the *Statement of Work* addresses:

- Groundwater Monitoring, Sampling and Analysis;
- Groundwater and Vadose Zone modeling and risk assessments;
- Groundwater Protection and Remediation;
- Groundwater and Waste Site Operable Unit Characterization;
- Groundwater and Waste Site Operable Unit Regulatory Decisions; and
- Hanford Site Environmental Information System Management.

Wells are used at the Hanford Site to monitor groundwater quality at the Hanford Site, delineate existing groundwater plumes, and meet regulatory requirements associated with CERCLA, RCRA, and DOE directives. Groundwater monitoring wells require maintenance in order to provide accurate and reliable water level measurements and sampling. Wells that are no longer needed are decommissioned. The *Hanford Site Well Decommissioning Plan* provides details on the number of wells and types of activities that comprise this work.

Interim remedial actions have been initiated for selected groundwater Operable Units (OUs). Systems necessary to implement the remedial actions identified in final Records of Decision will be installed by 2018.

Waste sites are grouped into process-based OUs, identified in Appendix C of the TPA for remedial investigation and remedial action decision making purposes, and identified for groundwater geographically. Characterization activities and preparation of remedial action decision documents are in progress.

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Human Health and Ecological Risk assessments are being conducted under the CERCLA remediation process at the Hanford Site. An integrated approach has been established for conducting ecological risk assessments. Currently, an integrated ecological risk assessment is being conducted for the Columbia River Corridor at the edge of the Hanford Site, and an integrated ecological risk assessment is being conducted for the Central Plateau.

Hanford Site environmental databases and information systems are used to record and provide access to monitoring data, waste site data, monitoring well information, sample analysis status and geographic information. Project specific databases and information systems are used to record and provide access to information unique to the specific project. The EnviroDataAccess system and Virtual Library system provide access to the most frequently used Hanford Site environmental information through Hanford intranet web sites.

C.2.4.1 Project Integration

C.2.4.1.1 Groundwater and Vadose Zone Remediation Integration

General Scope:

The Contractor shall support DOE in executing the integration functions associated with coordinating all cross-cutting activities related to monitoring, protection and remediation of groundwater.

Detailed Scope and Requirements:

The Contractor shall:

- Lead strategic integration of groundwater, vadose zone, and waste sites remediation efforts across the Hanford Site.
- Support Groundwater and Vadose Zone Remediation Integrated Project Team (IPT) activities.
- Create, update and maintain integrated Groundwater and Vadose Zone project schedules for the Hanford Site.
- Support Interagency Management Integration Team (IAMIT) meetings, Unit Manager Meetings, Hanford Advisory Board (HAB), and TPA negotiations, which include Groundwater and Vadose Zone topics.
- Review and evaluate integrated baseline project schedules for all remediation activities across the Hanford Site, including activities leading to disposition/remedial action decisions, to determine whether the schedule supports and aligns with the DOE strategy for groundwater protection and remediation. Prepare and submit a report to DOE presenting the results of this evaluation that includes the evaluation basis and recommendations for changes in project activity schedules that would result in better alignment with the strategy for groundwater protection and remediation (Deliverable C.2.4.1.1-1). Perform this review and evaluation following baseline revisions resulting from budget decisions.
- Develop and submit to DOE a plan that presents a strategy for gaining community and stakeholder understanding and building consensus on integrated groundwater remediation objectives and approaches (Deliverable C.2.4.1.1-2).

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- Prepare and submit a prioritized list of recommended service water line upgrades or storm water run off control projects on an biennial basis (Deliverable C.2.4.1.1-3).
  - The prioritization shall be established through an evaluation of the significance for potential to impact groundwater based on known or potential service water line leakage locations with respect to waste sites/subsurface contamination.
  - The Contractor shall include the evaluation basis in the submittal.
- Provide support to DOE in executing its lead agency role with regulators and stakeholders in the preparation, submission, approval, and defense of decision, regulatory, and supporting documentation.
- Develop and implement innovative technical and regulatory approaches that will optimize the cost and time required to operate existing remediation systems.
- Provide periodic revisions to the *Groundwater and Vadose Zone Management Plan*. The Contractor shall work with the regulators, Tribal Nations, and stakeholders to solicit and incorporate comments.

C.2.4.1.2 Risk Assessment Activity Integration

General Scope:

The Contractor shall support DOE in executing the agency's integration function associated with coordinating the performance of risk assessments conducted to meet regulatory and DOE directive requirements, or to provide a technical basis in making project decisions.

Detailed Scope and Requirements:

The Contractor shall:

- Maintain a document under configuration control for DOE that contains key physical, chemical, and other parameters/assumptions associated with modeling the fate and transport of environmental contaminants from structures and waste sites for risk assessment purposes.
- Submit any proposed changes to the content of this document to DOE for approval prior to revising the document (Deliverable C.2.4.1.2-1).
- Prepare and submit for DOE approval the site specification to establish consistency among risk assessments at the Hanford Site. The site specification shall include the basis of evaluation and provide recommendations that would result in improved consistency among risk assessments (Deliverable C.2.4.1.2-2).
- Provide support to DOE in executing its owner role with regulators and stakeholders in the preparation, submission, approval, and defense of risk assessment and supporting documentation.
- Prepare a process to manage risk assessment activities across the Hanford Site (Deliverable C.2.4.1.2-3).
- Maintain an integrated schedule for risk assessments at the Hanford Site that assures prerequisite activities supporting initiation of risk assessment are appropriately scheduled.

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C.2.4.2 Hanford Environmental Data Integration

General Scope:

The Contractor shall serve as the data manager for assigned Hanford environmental databases.

Detailed Scope and Requirements:

The Contractor shall serve as the data manager for the following environmental databases, associated information systems, and web-based information access systems/portals:

- Hanford Environmental Information System (HEIS);
- Sample Data Tracking (SDT) System;
- Electronic Data Deliverable Processor (EDDPro);
- Hanford Well Information System (HWIS);
- Well Maintenance Application (WMA);
- Waste Information Data System (WIDS);
- WIDS Application;
- Hanford Intranet and Hanford Internet HEIS web sites; and
- EnviroDataAccess web based information access system.

The Contractor shall maintain and upgrade the following project-specific environmental databases:

- Sample and Data Management (SDM);
- Pump-and-Treat Project Specific Databases for the 100-HR-3, 100-KR-4, 100-NR-2 and 200-ZP-1 pump and treat projects; and
- In-Situ Redox Manipulation Project Specific Database.

As data manager for the environmental databases and information systems listed above, the Contractor shall:

- Identify hardware performance requirements (including Quality Assurance) and maintain performance specification documents;
- Obtain and install hardware upgrades, as needed, through the MSC;
- Identify software performance requirements (including Quality Assurance) and maintain software performance specification documents;
- Obtain and install software upgrades, as needed;
- Identify web site (Hanford intranet and Hanford internet) performance requirements and maintain performance specification documents;
- Update and upgrade web sites (Hanford intranet and Hanford internet), as needed;
- Identify automatic environmental database and information system query functions from other systems that use the data and information elements for completing data fields, generating reports, and other database operating activities;

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- Maintain access for automatic queries while maintaining the integrity of the environmental databases and information systems;
- Identify access needs for Hanford Site contractors, DOE, and other parties (regulators, stakeholder organizations and the public). Establish access to environmental databases and information systems for data entry, data and information review, and report generation using environmental data and other associated information;
- Maintain appropriate restrictions on access to comply with all security requirements and to maintain system integrity;
- Maintain documentation on environmental databases and information systems that provide a description of the system, system capability, access control, content, data and information quality control processes, and other appropriate attributes or characteristics of each database and information system;
- Maintain procedures for access, data entry/validation, information update/validation, report generation, and other applicable operations associated with each environmental database and information system;
- Identify and evaluate opportunities for increasing effectiveness of use and decreasing operational costs through environmental database and information system improvements such as integration, consolidation, new database/information system development, and system software/hardware changes; and
- Coordinate hardware, software, access, automatic data/information query functions, data/information entry and reporting functions, and operational procedure changes with DOE and other users prior to initiating changes to ensure all regulatory/requirement compliance, security, and project execution/management needs continue to be met.

C.2.4.3 Modeling and Risk Assessment

General Scope:

The Contractor shall maintain the Hanford Site Composite Analysis.

The Contractor shall conduct and maintain risk assessments to facilitate regulatory and other project decisions, as required.

The Contractor shall maintain the Hanford Site groundwater model developed by the Tank Closure and Waste Management (TC&WM) Environmental Impact Statement (EIS) team. At the direction of the Contracting Officer, the Contractor shall continue development of the Hanford Site groundwater model.

Detailed Scope and Requirements:

The Contractor shall:

- Maintain, update, and revise the Hanford Site Composite Analysis in accordance with DOE O 435.1, *Radioactive Waste Management* and other applicable requirements using a systems approach to model inventory, waste releases, air, vadose zone, groundwater and river transport with an evaluation of human and ecological impacts from a dose and risk assessment standpoint.
- Develop, maintain and upgrade the modeling and analytical tools as needed to support

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risk assessment for regulatory and other environmental protection/remediation decision making processes. The computer model for the Hanford Site Groundwater uses the MODFLOW computer code and the vadose zone model uses the STOMP computer code. No other models are allowed to be used unless approved by DOE.

- Conduct, maintain, update and revise risk assessments as required to facilitate regulatory and other project decisions, in accordance with all applicable requirements.
- Maintain, update, and revise the Hanford Site Groundwater Model to support CERCLA, NEPA, RCRA, and AEA, as required.

C.2.4.4 Hanford Site Common Field Activities

C.2.4.4.1 Groundwater Monitoring Wells

General Scope:

The Contractor shall install groundwater monitoring wells in accordance with applicable regulatory and DOE requirements to support both Hanford Site-wide characterization activities and OU characterization activities. The Contractor shall maintain the groundwater monitoring well network on the Hanford Site and shall decommission wells that are no longer needed.

Detailed Scope and Requirements:

The Contractor shall:

- Install required wells in the Central Plateau region of the Hanford Site, approximately 350 feet in depth, sampled and logged, and completed with typically 30 feet of well screen.
- Install required wells along the Columbia River Corridor, approximately 120 feet deep with typically 30 feet of well screen.
- Maintain and execute a program for conducting routine preventative maintenance and maintaining security for the groundwater monitoring well network on the Hanford Site.
- Conduct activities, such as, repairing and resurveying well heads and locks, clearing wells, pulling pumps and otherwise servicing wells, as needed.
- Decommission wells that are no longer needed at the Hanford Site in accordance with the *Hanford Site Well Decommissioning Plan* and the requirements of Washington State regulations associated with well decommissioning.

C.2.4.4.2 Soil Boring and Sampling

General Scope:

The Contractor shall drill and sample soil to provide characterization data of the vadose zone in both the Central Plateau and along the Columbia River Corridor to support Hanford Site-wide characterization activities.

Detailed Scope and Requirements:

During the period of FY 2009 through FY 2012, the Contractor shall drill and sample both deep (300 feet) and shallow (100 feet) soil each fiscal year for vadose zone characterization.

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C.2.4.4.3 Borehole and Surface Geophysical Logging

General Scope:

The Contractor shall conduct borehole and surface geophysical logging to support well and boring installation activities and to characterize contamination sources in the subsurface.

Detailed Scope and Requirements:

The Contractor shall:

- Conduct detailed borehole geophysical logging for deep borings, about 300 feet each, and shallow borings, about 100 feet each.
- Conduct neutron logging and spectral gamma in boreholes.
- Conduct surface geophysical surveys at a rate of two (2) surveys (approximately 10 line kilometers each) per year during the period of FY 2009 through FY 2011 and one other fiscal year as specified by DOE-RL.
- Establish and implement all quality assurance/quality control requirements for this activity.
- Process all data resulting from this activity and enter the data into associated Hanford Site geophysical logging databases.
- Prepare and submit required reports.

C.2.4.4.4 Treatability Tests

General Scope:

The Contractor shall conduct treatability tests.

Detailed Scope and Requirements:

The Contractor shall:

- Perform treatability tests as specified in the *Deep Vadose Zone Treatability Test Plan;* and
- Conduct investigative activities associated with application of new methods for characterizing, remediating, and monitoring groundwater, vadose zone, and waste sites.

C.2.4.4.5 Ecological Sampling

General Scope:

The Contractor shall conduct ecological sampling to support on-going CERCLA remedial action decision processes.

Ecological Sampling work shall be coordinated with and approved by the regulators (U.S. Environmental Protection Agency and State of Washington Department of Ecology) and openly discussed and vetted with the stakeholder community, Tribal Nations, and the Natural Resource Trustee Council for the Hanford Site.

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Detailed Scope and Requirements:

The Contractor shall:

- Conduct ecological sampling on the Hanford Site and at reference sites to support the *Central Plateau Remedial Investigation/Feasibility Study* and Proposed Plan CERCLA processes. The Contractor shall perform this activity in accordance with the sampling protocol established for the *Central Plateau Ecological Risk Assessment.*
- Conduct ecological sampling, as required, to augment sampling conducted by other Hanford Site contractors along the Columbia River Corridor.

C.2.4.5 Groundwater Monitoring, Assessment and Reporting

General Scope:

The Contractor shall monitor Hanford Site groundwater conditions, as required, to meet regulatory and DOE requirements. The Contractor shall perform or arrange for on-site and off-site analysis for groundwater, soil vapor, surface water, and other related samples. The Contractor shall perform data assessment/reporting to meet regulatory and DOE requirements for groundwater monitoring and remediation and to allow continued operation of Hanford waste management facilities.

Detailed Scope and Requirements:

The Contractor shall:

- Schedule and collect samples from approximately 2000 well trips per year;
- Schedule and collect samples from approximately 150 aquifer tubes per year;
- Schedule and perform approximately 1750 water level measurements from the monitoring well network per year;
- Conduct single well hydraulic tests as new wells are drilled;
- Conduct detailed multi-well hydrologic tests at two (2) locations per year for large scale aquifer properties;
- Conduct covariance analysis of sampling performance between wells. Use the results of this analysis to determine the continued effectiveness of individual wells for monitoring. Make recommendations to DOE for discontinuing the use of individual wells for monitoring when this analysis indicates it is no longer effective;
- Review, validate/verify, evaluate, and interpret hydrogeologic and groundwater chemistry data at the Hanford Site and report outliers and unusual conditions to DOE as discovered;
- Prepare and submit the *Annual Groundwater Monitoring Report* (Deliverable C.2.4.5-1) consistent with the established content and format, and provide input to the MSC for preparation of the annual *Site Environmental Report*;
- Prepare and submit required regulatory reports;
- Coordinate groundwater analysis requirements and data reporting with other Hanford Site contractors, including the RCCC and TOC; and

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- Collect, interpret, and map water-level data for aquifers beneath the Hanford Site.

For analysis of approximately 13,000 analytical requests per year, the Contractor shall:

- Arrange for analysis of groundwater, soil vapor, surface water, and other related samples in accordance with applicable regulations and DOE directives;
- Provide sample shipping;
- Review and process sample results; and
- Enter sample analysis results into the Hanford Environmental Information System (HEIS) database.

C.2.4.6 OU Decision Document Activities

General Scope:

The Contractor shall obtain decision documents and prepare draft remedial design/remedial action work plans for all Hanford Site groundwater and Central Plateau waste site TPA-identified OUs.

Detailed Scope and Requirements:

The Contractor shall:

- Drill and sample soil borings and conduct other sampling activities to support OU characterization activities.
- Prepare, submit, and receive DOE and regulatory approvals for all documentation required to obtain decision documents for all Hanford Site groundwater and Central Plateau waste site TPA-identified operable units (Deliverable C.2.4.6-1).
- Prepare a *Draft Remedial Design/Remedial Action Work Plan* (RD/RAWP) for soil OUs within 180 days after the Record of Decision or other decision document is issued. The Contractor shall incorporate regulator comments in the draft, as appropriate. The Contractor shall integrate the remediation planning and design work with remediation work that is the responsibility of other Hanford contractors.
- Prepare a RD/RAWP for new groundwater remediation systems within 180 days after the Record of Decision or other decision document is issued for groundwater OUs.
- Provide support to DOE in the disposition and resolution of comments from regulators and stakeholders on decision, regulatory, and supporting documentation, including RD/RAWPs for soil and groundwater operable units. Prepare and submit revisions to these documents to reflect changes resulting from disposition and resolution of comments, as needed.
- Provide support to DOE in executing its owner role with regulators and stakeholders in the preparation, submission, approval, and defense of decision, regulatory, and supporting documentation.
- As requested by the Contracting Officer, review decision documents prepared by other Hanford contractors.

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C.2.4.7 Remediation – Groundwater and Deep Vadose Zone

General Scope:

The Contractor shall operate the existing groundwater and deep vadose zone remediation systems.

The Contractor shall install new systems as appropriate to implement final remedial actions for groundwater operable units and soil operable units associated with deep vadose zone.

Detailed Scope and Requirements:

The Contractor shall:

- Operate the following groundwater and deep vadose zone remediation systems in accordance with the RD/RAWP and as directed by the Contracting Officer:
  - ZP-1 Carbon Tetrachloride Pump and Treat System;
  - ZP-2 Carbon Tetrachloride Soil Vapor Extraction System;
  - UP-1 Uranium/Technetium Pump and Treat System (currently in standby);
  - K Area Chromium Pump and Treat Systems;
  - D Area Chromium Pump and Treat Systems;
  - D Area In Situ Redox Manipulation System;
  - H Area Chromium Pump and Treat System;
  - N Area Strontium Pump and Treat System (currently in cold standby);
  - N Area Apatite and Phyto-Remediation for Sr-90;
  - 300 Area Polyphosphate In Situ Immobilization of Uranium;
  - T Tank Farm Area Extraction of Technetium-99 with treatment at ETF; and
  - Bioremediation of D Area Chromium.
  -
- Identify and perform any up-grades to existing pump and treat, in-situ redox manipulation, and soil vapor extraction system(s) required to meet the remedial action objectives.

After completion of the remedial action decision process for groundwater operable units or as directed by the Contracting Officer, the Contractor shall:

- Install any additional groundwater and deep vadose zone remediation systems specified under Interim Action or Record of Decision documents; and
- Operate these systems as specified under the appropriate RD/RAWP.

With DOE concurrence, the Contractor shall decommission groundwater and vadose zone remediation systems which have achieved final remedial action objectives.

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C.2.5 Soil and Facility Remediation/Disposition

Background:

The Central Plateau facilities/buildings include structures that are or have been used to support Hanford Site activities. These include the five canyon buildings (B, T, and U Plant Canyons, Plutonium Uranium Extraction [PUREX] Plant, and Reduction Oxidation [REDOX] Canyon); large material processing, storage, or handling facilities and the liquid tank waste evaporators; industrial buildings and general purpose buildings such as offices, shops, trailers, and water tanks. Structures may be above ground or below ground or both, and consist of facilities and/or buildings, stacks, and diversion boxes that are not in a facility or building. A significant number of these structures are not generally contaminated with radioactive materials, but may have some incidental contamination from proximity to other facilities, and rodent, bird, or insect migration. These structures also may contain some hazardous substances such as asbestos. The remaining structures contain residual radioactive material and hazardous chemicals from processing, storage, and handling activities. These facilities are either operational or being maintained under a S&M program.

The Central Plateau contains waste sites that were contaminated with radioactive and other hazardous materials as a result of past Hanford Site operations. These waste sites were grouped into process-based OUs and identified in Appendix C of the TPA for remedial investigation and remedial action decision-making purposes. The Section J Attachment entitled, *Hanford Waste Site Assignment List*, provides a list of waste sites identified by OU.

For remediation purposes, site structures and waste sites were grouped into geographical zones as indicated in the list of structures and waste sites included in the Section J Attachments entitled, *Hanford Site Structures List* and *Hanford Waste Site Assignment List*, respectively.-

Pipelines and related ancillary equipment that were used to route waste between facilities, underground tanks, and waste sites are being identified and mapped to the appropriate disposition decision pathway and geographical zone.

C.2.5.1 Facility and Waste Site Minimum-Safe Operations

General Scope:

The Contractor shall perform surveillance and system, structural and other maintenance on:

- Assigned Hanford Site structures and waste sites identified in the Section J Attachments entitled, *Hanford Site Structures List* and *Hanford Waste Site Assignment List*, respectively,
- Inactive Central Plateau steam lines, and their associated underground injection control wells (UIC)s, not within the boundaries of structures identified in the Section J Attachment entitled, *Hanford Site Structures List*, or operational areas (e.g., high level waste tank farm).

Detailed Scope and Requirements:

The Contractor shall:

- Maintain a graded S&M program consistent with the condition of the individual facilities,

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buildings and/or waste sites; the hazards identified through Integrated Safety Management and other appropriate analyses; and the plans for closure.

- Perform S&M activities as required to maintain minimum safe and other conditions (e.g., requirements to support personnel occupancy in those buildings that are occupied or otherwise being used) in accordance with applicable laws, regulations, and documented safety analyses.
- Make appropriate decisions on maintenance and upgrade of facility/building support equipment and systems, including decisions to run-to-failure, based on the need for use of the facility/building to perform work under this Contract and maintain required regulatory monitoring systems.

C.2.5.2 Facility OU Decision Document Activities

General Scope:

The Contractor shall obtain decision documents necessary to establish disposition decisions for assigned facilities/buildings.

Detailed Scope and Requirements:

The Contractor shall:

- Prepare, submit, and receive approvals for all regulatory and other supporting documentation required to establish disposition decisions for assigned Hanford Site structures identified in the Section J Attachment entitled, *Hanford Site Structures List*. Facility/building disposition decisions shall be integrated and compatible with groundwater and waste site disposition decisions.
- Provide support to DOE in the disposition and resolution of comments from regulators and stakeholders on decision, regulatory, and supporting documentation for facility/building disposition. Prepare and submit revisions to these documents as needed to reflect changes resulting from disposition and resolution of comments.
- Provide support to DOE in executing its owner role with regulators and stakeholders in the preparation, submission, and approval of regulatory and supporting documentation.

C.2.5.3 Remediation Optimization

General Scope:

The Contractor shall prepare and submit a plan for sequencing and structuring the content of Records of Decision and other disposition decision documents for facility/building and waste site elements contained in geographical zones.

The Contractor shall prepare, submit, and maintain a plan for sequencing all geographical zone remediation activities.

The Contractor shall prepare a *Conceptual Design Report* (as defined in DOE O 413.3A [or current version] and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* [or current version], Chapter 5, for an environmental remediation project) for each geographical zone. The *Conceptual Design Report* shall support closure or other disposition of each

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facility/building and waste site element contained within the geographical zone.

Detailed Scope and Requirements:

The Contractor shall:

- Prepare and submit a plan for sequencing and structuring the content of Records of Decision and other disposition decision documents for facility/building and waste site elements contained in geographical zones (Deliverable C.2.5.3-1). The plan shall identify the grouping and sequence of Records of Decision and other disposition decision documents for facility/building and waste site elements contained within OUs that optimizes establishing disposition decision documents for facility/building and waste site elements contained within geographical zones against planning, design and initiation of field remediation and other disposition activities leading to zone closure.
- Prepare and submit a plan for sequencing geographical zone remediation activities that results in the most effective use of resources when considering equipment procurement and staging, workforce mobilization/demobilization, workforce leveling, workforce skill-mix, and other remediation/disposition project execution parameters (Deliverable C.2.5.3-2). Revise and submit the plan as disposition decision documents are received if they impact the conclusions presented in the geographical zone remediation sequence plan.
- Support DOE in discussions with regulators to sequence decisions and remediation activities consistent with a geographical zone remediation approach.
- Identify appropriate sections of OU Records of Decision, OU Draft A Remedial Design/Remedial Action Work Plan packages, and other disposition decision documents associated with and applicable to the individual facility/building and waste site elements contained in geographical zones.
- Use the identified disposition decision documents to prepare and submit for DOE approval, a Conceptual Design Report (as defined in DOE O 413.3A [or current version] and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* [or current version], Chapter 5, for an environmental remediation project) for each Central Plateau geographical zone, except for zone 21, *Integrated Disposal Facility*; zone 23, *100 Area*; and zone 25, *300 Area*. (Deliverable C.2.5.3-3). The Conceptual Design Report shall address closure or other disposition of each facility/building and waste site element contained within the geographical zone. The Conceptual Design Report shall be prepared to support initiation of zone closure sub-projects.

C.2.5.4 Remediation – Closure

General Scope:

As authorized by the Contracting Officer, the Contractor shall complete field remediation and other disposition activities for zone closure sub-projects or other identified facilities, buildings, and/or waste site elements contained within geographical zones.

The Contractor shall prepare and submit all regulatory and other documentation required to document the completion of geographical zone closure. The Contractor shall complete all Critical Decision-4 (CD-4), *Project Closure* actions (as defined in DOE O 413.3A [or current version] and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* [or current version]) required to transition a geographical zone from the DOE Office of

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Environmental Management to the DOE Office of Legacy Management.

Detailed Scope and Requirements:

As authorized by the Contracting Officer, the Contractor shall complete field remediation and other disposition activities identified for facility/building and waste site elements for the following geographical zones:

- U Plant Zone;
- NRDWL/BC Control Zone;
- PFP Zone;
- Semi-Works Zone;
- 200W Ponds Zone; and
- PUREX Zone.

The Hanford Site structures and waste sites included in each zone are identified in the Section J Attachments entitled, *Hanford Site Structures List,* and *Waste Site Assignment List, respectively.*

For each zone authorized, the Contractor shall:

- Prepare, if necessary, revised *Remedial Design/Remedial Action Work Plans* and any other required regulatory documentation, and submit to DOE for approval.
- Complete remediation and other disposition activities in accordance with all actions and requirements contained in regulatory and supporting documentation applicable to each zone. All final remedial actions and other disposition actions shall be completed as required to close and transition the geographical zone from EM to LM.
- Prepare documentation and otherwise support DOE in obtaining a Certificate of Completion of associated disposition actions in accordance with the TPA.
- Submit a Critical Decision-4 package meeting the requirements of DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version) and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* (or current version) for DOE approval.
- Conduct a separate closure review with independent experts for each geographical zone to determine implemented remedies meet the required action objectives and goals in Records of Decision and other disposition decision documents.
- Submit a document package for the geographical zone that meets the content requirements for a *Hanford Site Transition Plan* (as defined in an EM/LM Joint Memorandum, *Development of Site Transition Plan, Use of the Site Transition Framework, and Terms and Conditions for Site Transition*, dated February 15, 2005) and any other applicable requirements for DOE approval.
- Transition the zone to Post-Remediation Activities (SOW Section C.2.5.5).

As directed by the Contracting Officer, the Contractor shall remediate specific waste sites or disposition specific facilities within any geographical zone as required to support reducing risk to human health or the environment, or to reduce facility/waste site oversight costs.

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The Contractor shall make provisions for safe transport of borrow pit material needed to construct barriers in support of geographical zone remediation.

C.2.5.5 Post Remediation Activities

General Scope:

The Contractor shall perform post remedial actions for waste sites, structures, or geographical zones.

Detailed Scope and Requirements:

The Contractor shall:

- Maintain institutional controls and perform operations, maintenance and monitoring activities for all completed Central Plateau remedial actions in accordance with regulator approved Operation and Maintenance (O&M) Plans and Records of Decision.
- Perform other required monitoring, operations, and maintenance activities identified in other disposition decision related documents.
- Evaluate the continuing protectiveness of completed remedial actions and identify potential actions to address completed remedial actions that are determined to be not protective of human health and the environment. Document the results of this evaluation and any recommended actions for inclusion in a CERCLA 5-Year Review Report and submit the information to DOE.
- Support DOE in obtaining regulatory approval for corrective actions required to establish conditions that are protective of human health and the environment.
- Complete corrective actions identified that fall within planned maintenance activities presented in approved O&M Plans.
- Implement corrective actions that fall outside planned maintenance activities presented in approved O&M Plans after authorization from the Contracting Officer.

C.2.6 Fast Flux Test Facility

Background:

The Fast Flux Test Facility (FFTF) was a 400-MWt sodium-cooled reactor plant designed for testing nuclear reactor fuels and materials.

C.2.6.1 Maintain Safe and Compliant FFTF Complex

General Scope:

The Contractor shall maintain worker/public health and safety in accordance with all applicable safety and regulatory requirements.

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Detailed Scope and Requirements:

The Contractor shall maintain the FFTF Project facilities with all applicable safety and regulatory requirements and consistent with the work direction established by Section C.3.1.2.2. Following approval of the FFTF Surveillance and Maintenance Plan, the Contractor shall perform S&M in accordance with the Plan and all applicable safety and regulatory requirements.

The Section J Attachment entitled, *Hanford Site Structures List*, identifies the FFTF Project facilities that the Contractor is responsible for maintaining in a safe and compliant condition.

C.2.6.2 FFTF Shutdown Activities

General Scope:

The Contractor shall deactivate appropriate FFTF plant systems and components and remove potential hazards to place the facility in a minimum-safe surveillance and maintenance mode.

Detailed Scope and Requirements:

The Contractor shall systematically shutdown appropriate systems, components and facilities to achieve deactivation of FFTF and support facilities consistent with the work direction established by Section C.3.1.2.2. The Contractor shall de-energize systems and drain all system fluids to the maximum extent practicable.

The Contractor shall remove remaining polychlorinated biphenyl (PCB) transformers.

C.2.7 100 K Area

Background:

The 100K Area consists of the area on the Hanford Area where the K East and K West reactor buildings and their support facilities are located. While the reactors were deactivated in the 1970-1971 timeframe, their fuel storage basins continued to operate and, since early 1975, were used to store irradiated fuel elements from the N-Reactor. Removal of fuel from the basins was completed in October 2004.

C.2.7.1 Maintain Safe and Compliant K Basin Facilities

General Scope:

The Contractor shall operate and maintain assigned K Basin facilities in a safe, compliant, energy-efficient, and cost effective manner, in accordance with the approved authorization basis.

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Detailed Scope and Requirements:

The Contractor shall:

- Conduct operations, surveillance, and maintenance for assigned 100 K Area structures, waste sites, and equipment, in accordance with the approved authorization basis;
- Prepare and package waste streams for disposition, as required, and dispose, as appropriate;
- Maintain radiological and access controls to ensure personnel safety; and
- Provide safe and compliant storage of SNF at K Basins until it has been removed.

C.2.7.2 KE Basin Demolition

General Scope:

The Contractor shall complete demolition and disposal activities of the K East basin.

Detailed Scope and Requirements:

The Contractor shall:

- Demolish the K East basin and transport to ERDF for disposal; and
- Stabilize soil beneath the basin for subsequent remediation.

C.2.7.3 K Basins Sludge Treatment System

General Scope:

The Contractor shall design, procure, construct, and perform acceptance testing of the K Basins Sludge Treatment System.

Detailed Scope and Requirements:

The Contractor shall:

- Conduct alternatives analysis for the sludge disposition;
- Complete sludge treatment and approved storage design;
- Complete sludge treatment system and post-packaging components procurements;
- Complete construction of the Sludge Treatment System and associated facilities; and
- Obtain Critical Decisions as defined in DOE O 413.3A (or current version).

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C.2.7.4 K Basins Sludge Treatment

General Scope:

The Contractor shall operate the Sludge Treatment System to treat and package the sludge material (approximately 29 m^3) into a waste form that is suitable for approved disposal. Treated sludge shall be transported to an approved on-site storage location.

Detailed Scope and Requirements:

The Contractor shall treat K Basins sludge in accordance with the documented safety analysis, Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2000-1 Implementation Plan, *An Implementation Plan for Stabilization and Storage of Nuclear Material,* Washington State-approved permits, the TPA, and related-CERCLA documents.

The Contractor shall treat and package the knock-out pot sludge waste stream separately from the remaining sludge waste streams.

The Contractor shall transport the treated sludge to an approved storage location.

C.2.7.5 KW Basin Demolition

General Scope:

The Contractor shall complete demolition and disposal of the K West basin.

Detailed Scope and Requirements:

The Contractor shall:

- Deactivate K West basin systems and isolate from 105 K West reactor;
- Remove/drain K West basin water and transport to 200 ETF for treatment;
- Remove and dispose of above-grade facility superstructure;
- Demolish the K West basin and transport to ERDF for disposal; and
- Stabilize soil beneath the basin for subsequent remediation.

C.2.7.6 Place K Reactors in Interim Safe Storage (ISS)

General Scope:

The Contractor shall place both K East and K West reactor buildings into an ISS configuration in accordance with all actions and requirements contained in the regulatory and supporting documentation.

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Detailed Scope and Requirements:

The Contractor shall:

- Place and maintain the K East and K West production reactors in ISS status in accordance with the actions and all regulatory requirements established in the regulatory and supporting documentation;
- Complete deactivation, decontamination, decommissioning, and demolition (D4) activities up to the reactor shield wall/block, and remove associated above ground and underground structures and other systems outside of the reactor shield wall/block; and
- Complete required characterization and analysis.

The reactors will remain in ISS status after the period of performance of this Contract, and the Contractor shall transition the reactors to a successor contractor at the end of the Contract.

C.2.7.7 100 K Area Structures and Waste Sites

General Scope:

The Contractor shall complete field remediation and other disposition activities for assigned structures and waste sites contained within the 100 K Area.

The Contractor shall prepare and submit all remaining regulatory and other documentation required to document the completion of 100 K Area closure. The Contractor shall complete all Critical Decision-4 (CD-4), *Project Closure*, actions (as defined in DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* [or current version]) required to transition the 100 K Area from the DOE Office of Environmental Management to the DOE Office of Legacy Management.

Detailed Scope and Requirements:

The assigned structures and waste sites included in the 100 K Area are identified in the Section J Attachments entitled, *Hanford Site Structures List*, and *Waste Site Assignment List*. In addition to the K East and K West reactor buildings addressed above, the Contractor shall complete field remediation and other disposition activities identified for the remaining 100 K Area structures and waste sites.

The Contractor shall:

- Prepare a final *Remedial Design/Remedial Action Work Plan* and any other required regulatory documentation, and submit to DOE for approval.
- Complete remediation and other disposition activities in accordance with all actions and requirements contained in regulatory and supporting documentation. All final remedial actions and other disposition actions shall be completed as required to close and transition the 100 K area from the DOE Office of Environmental Management to the DOE Office of Legacy Management.
- Prepare documentation and otherwise support DOE in obtaining a Certificate of Completion of associated disposition actions in accordance with the TPA.

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- Submit a Critical Decision-4 package meeting the requirements of DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version) and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets f*or DOE approval (or current version).
- Conduct a separate closure review with independent experts to determine implemented remedies meet the required action objectives and goals in Records of Decision and other disposition decision documents.
- Submit a document package for the 100 K Area that meets the content requirements for a *Hanford Site Transition Plan* (as defined in an DOE Office of Environmental Management/DOE Office of Legacy Management Joint Memorandum, *Development of Site Transition Plan, Use of the Site Transition Framework, and Terms and Conditions for Site Transition*, dated February 15, 2005) and any other applicable requirements for DOE approval.
- Transition the 100 K Area to Post-Remediation Activities (SOW Section C.2.5.5).

C.2.8 618-10 & 618-11 Burial Ground Remediation

General Scope:

As authorized by the Contracting Officer, the Contractor shall initiate and complete field remediation and other waste disposition activities for the 618-10 and 618-11 burial grounds, in the event that these activities are not completed under the RCCC.

Detailed Scope and Requirements:

At the direction of the Contracting Officer, the Contractor shall accept the 618-10 and 618-11 burial grounds from the RCCC.

The Contracting Officer will separately and specifically authorize the major activities identified below for remediation of the 618-10 and 618-11 burial grounds.

Following acceptance, when authorized the Contractor shall:

- Complete any required characterization or confirmatory sampling and analysis activities.
- Prepare and submit a Remedial Design package for DOE approval. Disposition of the 618-10 and 618-11 burial grounds was addressed under the 300-FF-2 Record of Decision. The Remedial Design will fulfill all requirements and comply with any constraints identified in this and other applicable regulatory documents. The Remedial Design package shall include:
    - Analysis of all characterization and confirmatory sampling, other field investigation activities, previous remedial design development work, and other applicable historical information.
    - Identification and analysis of potential retrieval and packaging technologies that could be applied to remediation of the burial grounds.
    - Identification of the technology selected for retrieval and packaging of waste materials with a supporting engineering analysis and design for application of the technology to burial ground remediation.
    - Identification of proposed waste disposal pathways for material retrieved during remediation of the burial grounds and an analysis that determines the material as

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treated and/or packaged will comply with all applicable transportation and waste acceptance criteria.

- Identification of any required Government-Furnished Services and Information needed to support remediation of the burial grounds.
- Estimate of cost and a proposed schedule for remediation of the burial grounds.
- Other information needed to meet the requirements of DOE M 413.3-1, Project M*anagement for the Acquisition of Capital Assets* (or current version).

- Complete any required Engineering Evaluation/Cost Analysis (EE/CA), Removal Action Work Plans (RAWP), and any other required regulatory documentation.
- Complete field remediation activities in accordance with all actions and requirements established in applicable regulatory and supporting documentation.
- Prepare documentation and otherwise support DOE in obtaining a Certificate of Completion of associated disposition actions in accordance with the TPA. Provide support to DOE in executing its owner role with regulators and stakeholders in the preparation, submission, and approval of regulatory and supporting documentation.

C.3 DESCRIPTION OF PROJECT SUPPORT PERFORMANCE REQUIREMENTS

The Section includes project support activities not identified in other Sections of the Contract. One of the purposes of this Section is to assist in describing the specific responsibilities of the PRC within Hanford cross-cutting programs.

C.3.1 Project Management

The Contractor shall provide all management and technical information to:

- Meet the requirements of DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version) and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* (or current version);
- Support the budget formulation activities including, but not limited to emerging work items list; budget formulation input (including Integrated Priority List), fall limited budget update submission, budget scenario development, and, budget presentations (such as public and regulatory briefings, etc.);
- Meet the data requirements of the DOE Integrated Planning, Accountability and Budgeting System;
- The Contractor shall maintain a standard set of activity codes in the baseline schedules. The standard set of activity codes shall be developed by the Contractor and approved by DOE.
- Support audits, evaluations, and external technical reviews; and
- Support other DOE project performance assessments and information needs.

All project management information developed under this Contract shall be accessible electronically by DOE.

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C.3.1.1 Project Integration and Control and Earned Value Management

The Contractor shall prepare and submit for DOE approval (Deliverable C.3.1.1-1), a *Project Execution Plan* (PEP), consistent with the requirements in DOE O 413.3A (or current version), and DOE M 413.3-1 (or current version). The PEP shall describe the approach for managing and controlling all activities necessary to execute this Contract and shall focus on Contractor policies, methods, and approach to provide integration and control of scope, schedule and cost information.

The Contractor shall provide as an attachment to the PEP, a *Project Control System Description* that complies with the requirements of DOE O 413.3A (or current version), DOE M 413.3-1 (or current version), and American National Standards Institute *(ANSI)/*Electronic Industries Alliance *(EIA)-748-B Earned Value Management Systems (EVMS) (or current version)*.

The *Project Control System Description* shall describe the management processes and controls that shall be used to implement an EVMS, manage and control work, and complete Contract requirements. The *Project Control System Description* shall include:

- The baseline development process and the hierarchy of documents that shall be used to describe and maintain the PRC Performance Measurement Baseline (PMB) (See Section C.3.1.2.1, *Performance Measurement Baseline*);
- The process the Contractor intends to use for earned value management, change control, configuration control, interface control, and document control;
- The organizational breakdown structure, including roles and responsibilities of each major organization and identification of key management personnel; and
- A list of project software the Contractor proposes to use for project control.

The Contractor shall comply with the requirements of the Section I Clause entitled, *FAR 52.234-4, Earned Value Management System,* and have the EVMS evaluated against the ANSI standard by a qualified, independent third party selected by the DOE Office of Engineering and Construction Management (DOE-OECM). Upon completion of the evaluation and closure of all corrective actions, DOE-OECM will certify the Contractor's EVMS as compliant with the ANSI standard. Subsequent to the initial evaluation and certification, DOE-OECM may at any time require the Contractor to repeat the evaluation and certification process. The Contractor shall provide all necessary support to conduct the initial and any subsequent evaluations and closure of all corrective actions.

The Contractor shall flow down EVMS requirements in accordance with the Section I Clause entitled, *FAR 52.234-4, Earned Value Management System*.

Upon DOE approval of the PEP, the Contractor shall fully implement the *Project Control System Description*. The Contractor shall obtain Contracting Officer approval prior to implementing materially significant changes to the PEP. The Contractor shall provide DOE with access to all pertinent records, data, and plans for purposes of initial approval, approval of proposed changes, and the ongoing operation of the project control system.

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C.3.1.2 Project Scope, Schedule, and Cost Baseline

C.3.1.2.1 Performance Measurement Baseline

The Contractor shall develop and maintain a PRC Project Performance Measurement Baseline (PMB). The PMB is an integrated and traceable technical scope, schedule, and cost life-cycle baseline that encompasses all activities to execute the requirements of this Contract and complete Central Plateau remediation and closure.

The PMB shall include the following:

- Technical Scope. The following baseline documents shall be viewed collectively as the technical scope for the cost/schedule control system:
  - Contract *Statement of Work* and other Sections that define work scope and requirements;
  - Waste Site and Facility Lists;
  - Approved interface control documents;
  - WBS Dictionary Sheets required to a WBS level to be determined by DOE. (The WBS submittal shall include a data column which cross references the WBS elements at the lowest level to the appropriate CLIN);
  - Schedule at a WBS level to be determined by DOE; and
  - Time-phased, life-cycle cost estimate at a WBS level to be determined by DOE.

The PMB shall comply with the following requirements:

- The scope, cost, and schedule shall be linked through utilization of the WBS provided by DOE or as otherwise approved by DOE. The WBS shall provide the structure for all project control system components, including estimating, scheduling, budgeting, and project performance reporting, as required under this contract. Control accounts within the WBS shall be identified.
- The baseline and management thereof shall comply with *ANSI/EIA-748-B Earned Value Management Systems (EVMS) (or current version)*, DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version) and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* (or current version).
- The schedule shall:
  - Include all significant external interfaces, all TPA milestones, other regulatory and DNFSB commitments, and GFS/I dependencies.
  - Be an integrated, logical network-based plan that correlates to the WBS and is vertically traceable to the EVMS control accounts. The schedule shall be capable of summarizing from control accounts to higher WBS levels.
- Any additional working level schedules deemed necessary by the Contractor shall be integrated with the PMB and able to provide earned value reporting in compliance with *ANSI/EIA-748-B Earned Value Management Systems (EVMS) (or current version).*
- The cost estimate shall include project resource plans, detailed resource estimates, basis of estimates, budgetary requirements, and identification of direct costs, indirect costs, management reserve, and fee.
- The method used to determine earned value shall be identified for each control account.

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- The baseline shall be accessible to DOE at any time through access to electronic files.
- The Contractor shall update the PRC Enterprise Project Structure Node of the DOE Primavera Schedule Database with the Primavera XER files for the baseline and current performance schedules.
- The PMB shall integrate with
  - Financial system(s) for consistency and accurate reporting of information with traceability to budget and report codes;
  - DOE, Congressional, and external commitments; and
  - Performance milestones including contract performance incentives and other performance measures established by DOE.

C.3.1.2.2 Performance Measurement Baseline Submittals

Prior to the completion of the Transition Period, DOE will provide work scope direction that will be in effect from initiation of the *Base Period* until DOE approval of the Contractor's initial *Performance Measurement Baseline* submittal.

The Contractor shall develop and submit an initial PMB (Deliverable C.3.1.2.2-1) with subsequent annual updates (Deliverable C.3.1.2.2-2) for DOE approval through the baseline change control process. The initial PMB and subsequent updates shall include:

- A working-level of detail for the current period through up to three fiscal years as directed by DOE to support submittal of the next budget, including sufficient detail to govern execution of the contract work scope for that period.
- A planning level of detail which starts with the next fiscal year and addresses contract work scope and the remaining Central Plateau life-cycle, including sufficient detail to support budget submittals and out-year planning.
- Sufficient detail through the upcoming five year period to support DOE External Independent Review.

The PMB submittal shall include both hard copies and electronic files for the:

- WBS and WBS Dictionary Sheets at the level in which the costs are collected. The WBS submittal shall include a cross-reference of the WBS elements to the assigned CLIN consistent with the *Contract Line Item Number Assignment Against Contract Structure* table in the Section J Attachment J-11, entitled *Supplemental Work Description Tables*.
- Time-phased cost estimate at a WBS level to be determined post-award by DOE.
- Basis of estimate at a WBS level to be determined post-award by DOE.
- Time-phased resource-loaded schedule at a WBS level to be determined post-award by DOE.

The Contractor shall provide the WBS, WBS dictionary data, and basis of estimate data in either Microsoft Word© or Microsoft Access© format. Cost data shall be provided in Microsoft Access© or Excel© format and the schedule shall be provided utilizing the current version of Primavera Systems, Inc., Enterprise for Construction© software unless agreed to otherwise by DOE.

Approval of the initial baseline, annual updates, or approved baseline changes shall constitute

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DOE authorization for specific work scope in CLIN 3 and any work to be authorized in CLIN 4.

The Contractor shall provide additional data that may be required by the MSC for development of the Hanford Site-wide life-cycle baseline.

The Contractor shall support DOE External Independent Review and Energy Systems Acquisition Advisory Board (ESAAB) review of the initial submittal of the PMB and follow-on reviews of annual updates.

C.3.1.2.3 Performance Measurement Baseline Change Control Process

The PMB change process shall be sufficiently rigorous and disciplined to ensure that the PMB is accurate, up-to-date and capable of providing meaningful data and information.

The Contractor shall:

- Develop and submit for DOE approval, a *PRC Performance Measurement Baseline Change Control Process* document *(*Deliverable C.3.1.2.3-1) with change authorities consistent with the approved *Project Execution Plan* and DOE O 413.3A *Program and Project Management for the Acquisition of Capital Assets* (or current version).
- Implement the *Project Baseline Change Control Process* with the PMB used as the reference for all baseline changes.

The Contractor baseline change control process shall be consistent with the DOE change control process and shall reflect levels of approval for actions with DOE thresholds and any constraints on moving funds from one PBS to another.

C.3.1.3 Project Performance Reporting

The Contractor shall provide DOE with the necessary project performance information to support budget planning, execution, and reporting; project planning and execution; audit and evaluation; and other DOE performance assessment and information needs.

Contractors must submit monthly project performance data no later than CD-2 for projects having a total project cost greater than or equal to $20M. The required project performance data include: ANSI/EIA-748 earned value; earned value time-phased incremental cost and quantity; management reserve; schedule; variance analysis; and risk management data. For firm fixed-price contracts, the required project performance data include: schedule activity and relationship; and cost and quantity data (budget, actual, Estimate to Complete [ETC] and Estimate at Completion [EAC]) by Work Breakdown Structure (WBS) and Organizational Breakdown Structure (OBS). Data must be submitted electronically via the Project Assessment and Reporting System II (PARS-II) in accordance with the current version of the “Contractor Project Performance Upload Requirements” document maintained by OECM. Unless OECM has granted a temporary exemption, all requested data must be submitted. Data must be loaded into PARS-II no later than 11 business days before the end of each month, or as otherwise stipulated by OECM, and must be current as of the previous month's accounting period closed. Reporting by the contractor may be required earlier than CD-2 as specified by the Contracting Officer.

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C.3.1.3.1 Monthly Performance Report

The Contractor shall submit and transmit to DOE a Monthly Performance Report representing the prior month's performance by the last Tuesday of each month (Deliverable C.3.1.3.1-1) with a copy submitted to HQ EM.

The Monthly Performance Report shall include a summary of overall contract performance and a separate report for each of the major projects at the PBS level.

The summary of overall Contract performance shall include:

- Key accomplishments;
- Analysis of funds expenditure, with projections for the Project by Fiscal Year and life of the Contract.
- A change control section that summarizes the scope, technical, cost, and/or schedule impacts resulting from any implemented actions; and that discusses any known or pending baseline changes and utilization of management reserve.
- Business structure information to demonstrate ongoing compliance with the requirements of the Section H clause entitled, Self Performed Work.
- EVMS information using the following OMB Contract Performance Report formats (DID-MGMT-81466):
  - Format 1, DD Form 2734/1, Mar 05, Work Breakdown Structure;
  - Format 2, DD Form 2734/2, Mar 05, Organizational Categories;
  - Format 3, DD Form 2734/3, Mar 05, Baseline;
  - Format 4, DD Form 2734/4, Mar 05, Staffing; and
  - Format 5, DD Form 2734/5, Mar 05, Explanations and Problem Analysis.

Each of the major project reports shall include:

- Project manager's narrative assessment including:
  - Significant accomplishments and progress towards completion of project goals and objectives; and
  - Key risks and challenges.
- Evaluation of safety performance (including Integrated Safety Management Systems [ISMS] metrics and all recordable injuries, lost-time injuries, and near-misses).
- Major issues including actions required by the Contractor and DOE
- Project Baseline Performance including:
  - Baseline schedule status, which reflects progress against the baseline and includes critical path analysis, performance trends, variance discussion(s), and potential issues related to TPA or DNFSB milestones.
  - Contract estimates-to-complete.
- Project Risk Assessment, including identification of critical risks, actions planned, and actions taken to address those risks, potential problems, impacts, and alternative courses of action, including quality issues, staffing issues, assessment of the effectiveness of actions taken previously for significant issues, or the monitoring results of recovery plan implementation.
- Actions required by DOE, including GFS/I and DOE decisions.

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C.3.1.3.2 Project Review Meetings

The Contractor shall participate in a monthly contract/project review and be prepared to address any of the information in the monthly report and other information as requested by DOE. A weekly contract or project status meeting shall be conducted at DOE request to provide interim updates and address issues.

C.3.1.4 Risk Management

Risk and decision management activities shall be coordinated on a continuing basis with the DOE (as lead) and the other Hanford Site contractors. Contractor risk analysis information pertaining to "cross-cutting" decisions shall be communicated to DOE and other Hanford Site contractors, including agreement as to who should be the lead for managing each risk.

The Contractor shall implement a risk management process in compliance with the *Project Execution Plan,* DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version); and, DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* (or current version).

The Contractor shall provide a *Risk Management Plan* (Deliverable C.3.1.4-1) to DOE for approval. The plan shall identify the engineering and technology needs that are required to reduce the risk and uncertainty associated with the program or project, address scenario development, risk strategy, risk communication, risk analysis, and the recommended management reserve required to adequately address Contractor-controlled risk. The Plan shall include metrics to determine effectiveness.

C.3.1.5 Design, Procurement, Construction, and Acceptance Testing

This Section applies to all capital asset construction activities performed as part of executing this Contract. In the context of this Section, the terms "acceptance testing" and "acceptance" refer to the Contractor's testing and acceptance of PRC-related systems and equipment. The Contractor shall provide the necessary documents to support the critical decision process in DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version).

C.3.1.5.1 Project Design

- Design Authority: The Contractor shall act as the design authority unless otherwise determined in accordance with DOE O 413.3A (or current version), with duties to include developing design solutions, preparing all design media and documentation, maintaining the design basis, and performing design reviews.
- Design Standards: The Contractor shall submit for DOE approval a list of the standards to be used in the design of facilities and equipment (Deliverable C.3.1.5.1-1). The Contractor shall ensure that the project's design meets all applicable standards, and that the list of applicable standards is maintained under configuration control. The Contractor shall integrate safety into the design process.
- Design Reviews: The Contractor shall conduct periodic design, constructability, and operability reviews. When directed by DOE, the Contractor shall facilitate independent DOE design reviews in support of the requirements of DOE O 413.3A (or current version), to demonstrate that the project will perform its intended functions and meets

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requirements. The Contractor shall provide the design at the end of the three (3) design stages (conceptual, preliminary and final), or as otherwise directed by DOE, for DOE review. The Contractor shall resolve any comments resulting from these reviews with DOE.

- Release for Construction: Upon receipt of Critical Decision 3, *Approve Start of Construction*, and resolution of DOE comments, DOE will authorize the Contractor to release the design for construction.

C.3.1.5.2 Procurement, Construction, and Acceptance

The Contractor shall prepare and submit a *Procurement, Construction, and Acceptance Testing Plan* for DOE approval, and update the Plan as required after initial submission (Deliverable C.3.1.5.2-1). The Plan shall include:

- Description of procurements, construction bids, and work packages;
- Construction management;
- Construction site management;
- Acceptance testing; and
- Descriptive linkage to the *Project Execution Plan* and the *Integrated Safety Management System Description*.

The Contractor shall procure all required material and equipment through the preparation of bid packages and solicitations; evaluating, awarding, and managing subcontracts; accepting subcontractor materials and equipment; and verifying subcontractor acceptance tests.

The Contractor shall submit a *Purchasing System* for DOE approval in accordance with the Section I Clause entitled, *Subcontracts* (Deliverable C.3.1.5.2-2).

The Contractor shall certify to DOE that construction has been initiated.

The Contractor shall maintain a construction inspection system and acceptance testing system, and perform such inspections and testing, as well as ensure that the work performed under the Contract conforms to Contract requirements. The Contractor shall maintain complete inspection and testing records and make them available to DOE. DOE shall be allowed to participate in acceptance testing and system turnover or may elect to use independent inspectors to participate in acceptance testing and system turnover. The Contractor shall develop and submit for DOE approval an integrated *Construction and Acceptance Testing Program* (Deliverable C.3.1.5.2-3) that includes the following elements:

- Verification and approval of all vendor drawings to assure conformity with the approved design and working drawings and specifications;
- Acceptance test plans and procedures for on-site Contractor/subcontractor inspection of construction workmanship, compliance with design drawings and specifications, management of the design construction changes, and criteria for acceptance of fabricated and constructed items; and
- Integrated construction acceptance test plans and inspection of construction to assure adherence to approved working drawings and specifications.

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The Contractor shall prepare for DOE review and approval an *As-built Program Description* (Deliverable C.3.1.5.2-4). The as-built process and associated procedures shall identify:

- Description of the as-built process, including the role of DOE and the operations contractor. The operations contractor shall participate in acceptance of the as-built design, following construction, and commissioning;
- Drawing series to be as-built;
- Document control process for maintaining as-built; and
- Procedures for modification of the as-built.

During the construction and acceptance phase, the Contractor shall remain current on the process and facility as-built program. The Contractor shall report the status of the as-built program in accordance with the process defined in the *Procurement, Construction, and Acceptance Testing Plan*.

The Contractor shall provide all necessary labor, equipment, materials, test equipment, spare parts sufficient to maintain all structure, systems, and components in an operable condition, and other related resources for the acceptance testing program.

DOE, and other Hanford Site contractor personnel identified by DOE, shall be invited to participate in all construction project overview activities. Construction overview activities include any meeting that discusses significant issues associated with the establishment, development, and/or progress of the construction activities.

The Contractor shall certify to DOE that facility acceptance has been completed. Completion of facility acceptance is defined when all components and systems associated with the facility have been installed, functionally tested and the facility design as-built documents are complete in accordance with the *Procurement, Construction, and Acceptance Testing Plan*. Facility acceptance shall require acceptance of components and systems, including as-built design drawings.

The Contractor shall provide CD-4 documentation in accordance with DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (or current version) and DOE Office of Environmental Management guidance.

C.3.2 Integrated Safety Management System

The Contractor shall establish and maintain an Integrated Safety Management System (ISMS) in accordance with the requirements of the Section I Clause entitled, *Integration of Environmental, Safety and Health into Work Planning and Execution*, Section I Clause entitled, *Laws, Regulations, and DOE Directives;* and the Section B Clause entitled, C*onditional Payment of Fee, Profit and Other Incentives*.

The ISMS Description shall describe how ESH&Q is integrated into the Contractor's work planning and execution process; clearly communicate the roles, responsibilities, and authorities of line managers; hold line managers accountable for the performance of work in a manner ensuring protection of workers, the public, and the environment; and ensure quality work and products.

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The Contractor shall formally adopt an existing ISMS Description prior to commencing work. This adopted Description shall be submitted to DOE for information (Deliverable C.3.2-1). The Contractor shall develop and submit for DOE approval its own ISMS Description, for ISM Phase I and Phase II verification at a later date (Deliverable C.3.2-2). The Contractor shall update the ISMS Description and obtain DOE approval annually or as required to reflect changing conditions and contractor responsibilities (Deliverable C.3.2-3). The ISMS shall include an integrated Environmental Management System (EMS) developed pursuant to the DOE O 450.1A, *Environmental Protection Program* (or current version).

The Contractor shall flow the applicable ISMS/ESH&Q requirements down to all levels of self-performed work and all tiers of subcontracted work performance, and promptly identify and correct areas of non-compliance and performance concerns on self-performed and subcontracted levels of work performance.

The Contractor shall pursue continuous improvement through the establishment, tracking, and annual updating of *ISMS/ESH&Q Performance Objectives, Measures, and Commitments* (Deliverable C.3.2-5).

C.3.2.1 Environmental Regulatory Management

The Contractor shall establish an environmental program which is compliant with applicable laws, regulations, DOE directives (including DOE O 450.1, *Environmental Protection Program* [or current version]), and the Section H Clause entitled, *Environmental Responsibility*.

The Contractor shall provide MSC with the necessary support for MSC to:

- Develop an inclusive Site-wide Environmental Management System (EMS) Program Management Plan that complies with DOE O 450.1 (or current version);
- Perform Site-wide environmental permits/licenses responsibilities, including maintenance, application and reporting;
- Track, trend, and evaluate all Site-wide enforcement actions, compliance issues, and regulatory inspections conducted and planned at the Hanford Site;
- Provide Site-wide TPA technical support to DOE;
- Establish, manage, and maintain integrated Hanford Site Administrative Records and Public Information Repository.

The Contractor shall submit for DOE approval, an *Environmental Protection and Compliance Plan* (Deliverable C.3.2.1-1), which describes the current environmental protection and compliance framework, proposed changes to this framework, and the proposed approach to maintain compliance with the TPA and other regulatory permits and requirements throughout the duration of the Contract. The Contractor shall update the *Environmental Protection and Compliance Plan* and obtain DOE approval, annually or as required to reflect changing conditions and contractor responsibilities

The Contractor shall manage its facilities, waste management units, and operable units to assure compliance with environmental requirements and agreements. The Contractor shall integrate their environmental permitting and regulatory compliance activities with the Hanford site-wide permitting and compliance framework, including, but not limited to, the *Hanford Air Operating Permit and the Hanford Facility RCRA Permit* (WA7890008967).

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The Contractor shall work with the MSC and other designated Hanford Site contractors in providing legally and regulatory required information associated with air and liquid effluent and other environmental permitting actions. The Contractor shall prepare, submit, and receive DOE and regulatory approvals for all additional regulatory and supporting documentation required to complete the work under this Contract.

The Contractor shall interface with the MSC and other designated contractors in providing legally and regulatory required air and liquid effluent and near facility environmental monitoring data. The Contractor shall collect, compile, and/or integrate air and liquid effluent monitoring data from operations and activities under their control. The Contractor shall compare the monitoring data with regulatory and/or permit standards applicable to their activities and/or operations and provide the data and analyses to the MSC or other designated contractors for use in preparing the mandatory state and Federal environmental reports for the Hanford Site, including the Hanford Site Environmental Report.

The Contractor shall provide all necessary support to DOE in executing its owner role with regulators and stakeholders in the preparation, submission, and approval of regulatory and supporting documentation. As part of this responsibility, the Contractor is encouraged to propose beneficial changes to the regulatory approach.

C.3.2.2 Nuclear Safety

DOE will execute its nuclear safety responsibilities in accordance with DOE O 410.1 (or current version). The Contractor shall adopt existing DOE-RL approved safety basis documentation for PRC Hazard Category 1, 2 and 3 nuclear facilities. These safety basis documents shall be revised/updated within 12 months of award of the Contract and submitted to DOE-RL for approval.

The Contractor shall maintain, implement, and annually update (Deliverable C.3.2.2-1) the nuclear safety basis documents and analyses for its Hazard Category 1, 2, and 3 facilities in accordance with 10 CFR 830, Subpart B, *Nuclear Safety Management.*

For new Hazard Category 1, 2, and 3 nuclear facilities or major modifications to nuclear facilities, the Contractor shall develop new safety basis documents, including a preliminary documented safety analysis, documented safety analysis, and technical safety requirements that incorporate the expectations identified in DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830 (or current version)*, and DOE G 423.1-1, *Implementation Guide for Use in Developing Technical Safety Requirements (or current version)*. The contractor shall integrate nuclear safety into the design process.

As required by 10 CFR 830.203, *Unreviewed Safety Question Process*, the Contractor shall formally adopt an existing USQ process prior to commencing work. This adopted process shall be submitted to DOE for approval (Deliverable C.3.2.2-2). The Contractor shall develop and submit for DOE approval its own USQ process at a later date (Deliverable C.3.2.2-3) that incorporates the expectations identified in DOE G 424.1-1A, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements (or current version)*.

The Contractor shall maintain the nuclear safety basis documents under a configuration management program. The Contractor shall review new work scope against the documents prior to implementation using the DOE-approved USQ process, and obtain DOE approval on

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necessary nuclear safety basis document changes prior to implementation.

The Contractor shall ensure that the safety related structures, systems, and components relied upon to meet the requirements of the nuclear safety basis documents are identified and maintained appropriate to their classification with sufficient reliability to enable timely performance of mission work.

C.3.2.3 Worker Safety and Health

The Contractor shall implement a worker safety and health program that reduces or prevents occupational injuries, illnesses, and accidental losses by providing workers with a safe and healthful workplace. This program shall implement a structured, standards-based approach to planning and control of work including identification and implementation of worker safety and health standards and requirements that are appropriate for the work to be performed and for identifying and controlling related hazards, while facilitating the effective and efficient delivery of work. The program shall meet the requirements of 10 CFR 851, *Worker Safety and Health Program*.

The Contractor shall formally adopt an existing 10 CFR 851-compliant Worker Safety and Health Program prior to commencing work. This adopted Program shall be submitted to DOE for approval (Deliverable C.3.2.3-1). The Contractor shall develop and submit for DOE approval its own 10 CFR 851-complidant Worker Safety and Health Program at a later date (Deliverable C.3.2.3-2). The Contractor shall update the Worker Safety and Health Program and obtain DOE approval as required to reflect changing conditions and contractor responsibilities.

The Contractor shall promote a “Safety Conscious Work Environment” and “Human Performance Improvement” environment in which safety issues are promptly identified and effectively resolved, and in which employees are free to raise safety issues free of recrimination, harassment, intimidation, or other actions that induce peer pressure to not raise safety issues or otherwise create an environment where safety issues are not identified and resolved.

The Contractor shall document and implement a Radiation Protection Program as required by 10 CFR Part 835.101, *Radiation Protection Programs*. The Contractor shall formally adopt an existing Radiation Protection Program prior to commencing work. This adopted Radiation Protection Program shall be submitted to DOE for approval (Deliverable C.3.2.3-3). The Contractor shall develop and submit for DOE approval its own Radiation Protection Program at a later date (Deliverable C.3.2.3-4). The Contractor shall obtain DOE approval for updates to the Program, as required.

The Contractor shall formally adopt an existing Chronic Beryllium Disease Prevention (CBDP) Program prior to commencing work. This adopted Program shall be submitted to DOE for approval (Deliverable C.3.2.3-5). The Contractor shall support MSC development of a Site-wide CBDP Program in accordance with 10 CFR Part 850, *Chronic Beryllium Disease Prevention Program*. Upon DOE approval of the CBDP Program, the Contractor shall implement the Site-wide program.

Many of the Hanford Projects have achieved DOE Voluntary Protection Program (VPP) recognition at the Merit and STAR levels. The Contractor shall support and facilitate transition and maintenance of this achievement by the workforce until such time as the Contractor can apply for recognition as a new entity.

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C.3.2.4 Quality

Quality Assurance programs apply to all contract requirements and are not limited to environment, safety, and health functions. The Contractor shall develop documented Quality Assurance (QA) Program(s) that implement the following requirements:

- DOE O 414.1C, *Quality Assurance;*
- Code of Federal Regulation, Title 10, Part 830, *Nuclear Safety Management*, Subpart A, *Quality Assurance Requirements* (or current version);
- DOE/CBFO-94-1012, DOE Carlsbad Field Office, *Quality Assurance Program Description*, Revision 8, for WIPP-related activities (or current version); and
- DOE/RW-0333P, DOE Office of Civilian Radioactive Waste Management, *Quality Assurance Requirements and Description*, Revision 18 (or current version), for activities related to disposal at Yucca Mountain, including submission of Quality Assurance Status Report on Spent Nuclear Fuel Activities (Deliverable 3.2.4-5).

The Contractor shall formally adopt an existing:

- QA Program(s) prior to commencing work. This adopted Program(s) shall be submitted to DOE for *approval* (Deliverable C.3.2.4-1). The Contractor shall develop and submit for DOE approval its own QA Program(s) at a later date (Deliverable C.3.2.4-2). The Contractor shall obtain DOE approval for QA Program updates, as required.
- Assurance System Description prior to commencing work. This adopted Description shall be submitted to DOE for information (Deliverable C.3.2.4-3). The Contractor shall develop and submit for DOE approval its own Assurance System Description at a later date (Deliverable C.3.2.4-4).

C.3.2.5 Event Reporting and Investigation

The Contractor shall report all environmental, safety, and health events and information as required in CRD M 231.1-1A, *Environment, Safety, and Health Reporting*; DOE O 450.1, *Environmental Protection Program*; and DOE O 5400.5, *Radiation Protection of the Public and the Environment*. The Contractor shall flow down the applicable reporting requirements to all levels of self-performed work and all tiers of subcontracted work performance. The Contractor shall consolidate all information and serve as a single point of reporting to DOE for all environmental, safety, and health events and information associated with the Contractor's work scope.

The Contractor shall support Type A and conduct Type B accident investigations for accidents occurring on all self-performed and subcontracted work activities, as required in CRD O 225.1A, *Accident Investigations*. The Contractor shall establish and maintain readiness to respond to an accident; respond to all accidents; mitigate potential accident consequences; assist in preserving, collecting, and processing information and evidence from the scene of the accident; and provide all necessary support required to investigate the accident and support an accident investigation board.

The Contractor shall develop and maintain an effective Lessons Learned Program to capture lessons learned from both internally and externally identified deficiencies and good practices. The Lessons Learned Program shall be rigorous and comprehensive such that the Contractor can demonstrate actions taken to address significant occurrences from both inside and outside

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of the DOE complex. Lessons learned information should be targeted and made available to the personnel in the Contractor's organization actually conducting the type of work involved and most able to benefit from the information.

C.3.3 Security and Emergency Services

C.3.3.1 Safeguards and Security Management

C.3.3.1.1 Safeguards and Security Program Management

The Contractor shall coordinate and interface with the MSC and its subcontractors who provide SAS services (e.g., Hanford Site access control, security police officers, vulnerability analysis, etc.).

The Contractor shall perform the following SAS program management functions:

SAS Program Planning, Oversight, and Administration

The Contractor shall identify and coordinate their SAS operational planning activities with MSC operational planning activities on a Hanford Site-wide basis.

The Contractor shall provide SAS technical, cost, and schedule performance information to the MSC.

Security Conditions (SECON)

The Contractor shall conform to and comply with the DOE SECON system.

The Contractor shall comply with any protective measure requirements that may be implemented in the event of a crisis or emergency, and/or in response to a malevolent or terrorist threat to any or all DOE facilities, assets, and personnel.

Site Safeguards and Security Plan and Other SAS Plans

The Contractor shall provide information to the MSC in support of maintaining the Hanford *Site Safeguards and Security Plan* and other SAS plans.

Vulnerability Assessments

The Contractor shall provide the necessary operational and technical expertise in support of the preparation of vulnerability assessments, security analyses, and special SAS studies and evaluations as identified by the MSC for the Hanford Site.

Design Basis Threat (DBT)

The Contractor shall implement SAS actions, procedures, and/or processes as assigned by DOE that are necessary to comply with DOE DBT requirements. Overall DBT implementation actions and/or plans shall be consolidated and prepared by the MSC and approved by the DOE.

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Performance Assurance

The Contractor shall provide information to the MSC to support preparation of the Hanford Site-wide Performance Assurance Program Plan as part of the *Site Safeguards and Security Plan.*

Surveys, Reviews, and Assessments

The Contractor shall provide operational and technical expertise, when requested, to support SAS surveys, reviews, assessments and/or SAS performance tests (e.g., force-on-force exercises) that are conducted by the MSC and/or DOE for SAS program elements.

The Contractor shall identify, implement, and close corrective actions for PRC deficiencies in accordance with the SAS corrective action management programs.

Facility Clearance and Registration

The Contractor shall submit all required information to the MSC for facility clearance and registration actions.

SAS Training

The Contractor shall identify SAS training needs for PRC staff and shall arrange, fund, and schedule training in accordance with applicable requirements.

SAS Awareness

The Contractor shall comply with the requirements of the Hanford Security Awareness Program.

The Contractor shall maintain awareness of Hanford Site-wide security issues/topics and incorporate them into the Contractor's internal practices and procedures, as appropriate.

The Contractor shall implement supplementary SAS awareness activities and/or briefings (e.g., at staff and safety meetings across the Hanford Site) in coordination with Site-wide policies.

Classified Visits

The Contractor shall submit required information to the MSC for Classified visits. The Contractor's Classified Visits Program or process shall ensure that only persons with the appropriate access authorizations and need-to-know receive access to classified information or matter in connection with visits involving the release or exchange of classified information or matter.

Deviations

The Contractor shall identify, evaluate, and submit deviations to SAS requirements to DOE.

The Contractor shall coordinate with the MSC prior to submitting deviations to DOE. Deviation requests shall be applicable and unique to the project/program scopes of work, and submitted only when other means to meet requirements would not meet DOE SAS program objectives.

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Incidents of Security Concern

The Contractor shall develop and implement procedures and processes consistent with DOE requirements for addressing incidents of security concern.

The Contractor shall provide information and facility access to the MSC for investigation of security incidents. The Contractor shall develop and implement corrective actions. The Contractor shall provide information to the MSC to support administration of the Hanford Site Security Infraction Program.

C.3.3.1.2 Physical Security

The Contractor shall comply with the MSC security plans and DOE security plans/requirements.

The Contractor shall support the MSC in development or updating facility asset protection agreements for PRC facilities and shall conduct operations consistent with the agreements.

The Contractor shall submit through MSC for DOE review and approval any SAS arrangements or changes prior to operations commencing, or changing operations, or configurations that might alter the performance of existing SAS systems (e.g., limited/protected area boundaries, physical security configurations and associated hardware [sensors/cameras], patrol coverage and responses, safeguards methods or boundaries, entry/access control systems/procedures).

C.3.3.1.3 Protective Forces

The Protective Forces Function is comprised of select security elements (armed personnel, specialized equipment, tactical procedures, etc.) associated with physically protecting people and property on the Hanford Site. The MSC is responsible for the protective forces activities; however, there are many areas of facility operations management that interweave. The MSC Protective Forces function serves DOE, all Hanford Site contractors, and in particular facilities possessing critical safeguards and security interests (e.g., special nuclear material).

The Contractor shall support and integrate operational/business activities in conjunction with MSC Protective Forces in use at Hanford for the physical protection of SNM, classified materials, industrial assets, and mitigation and deterrence of radiological and toxicological sabotage events.

The Contractor shall manage their activities consistent with DOE-RL approved risk and vulnerability assessments, the SSSP, and other security plans and facility asset protection requirements coordinated by the MSC that involve the use of Protective Forces.

C.3.3.1.4 Information Security

The Information Security program encompasses the identification and protection of sensitive and classified information and matter. The scope shall include, but is not limited to: Classification, Classified Matter Protection and Control, Sensitive Information Management (e.g., OUO), and Operations Security (OPSEC)

The Contractor shall perform the following information security functions:

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Operations Security

The Contractor shall:

- Participate in and support Hanford Site-wide OPSEC Working and Awareness groups and perform the necessary management and support functions required for an effective OPSEC program.
- Provide support to the MSC OPSEC assessments of all Hanford Site facilities having Category I SNM and OPSEC reviews of all Hanford Site facilities that have the potential to process or store classified or sensitive information.
- Support the annual Site OPSEC threat assessment and preparation of the annual OPSEC plan.

Classified Matter Protection and Control

The Contractor shall:

- Develop and maintain a system of procedures, facilities, and equipment to identify, protect, and control classified matter that is being generated, received, transmitted, used, stored, reproduced, or destroyed in accordance with DOE directives.
- Be responsible for asset protection reviews for facilities that contain classified matter and, in conjunction with the MSC, maintain an updated list of security containers, locations, and custodians.
- Continuously reduce unneeded classified matter; and report and support investigation of any and all potential or actual compromise of classified information.

Classification and Unclassified Controlled Nuclear Information (UCNI) Program

The Contractor shall:

- Nominate a sufficient number of Derivative Classifiers and Reviewing Officials to be trained and approved by the MSC.
- Have appropriate classification and/or UCNI topical guidance available to organizations that are potential generators of classified and/or UCNI information.
- Provide for receipt and storage of classified documents from the MSC Classified Document Control Center.

Interface with the MSC and other on-site contractor management, as necessary, to inform employees of subject areas of a sensitive and/or potentially classified nature.

Official Use Only (OUO)

The Contractor shall manage and implement an OUO information program consistent with the common Hanford Site-wide OUO information program policies including the following:

- Provide OUO education and awareness for all staff, and
- Review PRC documents released to the public or assigned a formal document number for OUO content.

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Critical Infrastructure

The Contractor shall maintain PRC information systems that are critical to the Hanford Site mission and shall protect these systems from internal and external threats in conjunction with the MSC SAS program.

C.3.3.1.5 Personnel Security

The Personnel Security function for Hanford involves processing thousands of uncleared and cleared badged employees, hundreds of Human Reliability Program (HRP) enrolled personnel, and numerous foreign nationals for visits and assignments. The MSC manages and conducts a centralized Personnel Security program for the Hanford Site on behalf of DOE.

The Contractor shall perform the following personnel security functions:

Access Authorization (Clearance) Processing

The Contractor shall:

- Request and obtain personnel security clearances and badges, including "Special Access" (e.g., SIGMA) from the MSC. The Contractor shall support the MSC in downgrading and terminating clearances as required.
- Support the MSC's processes for obtaining security badges, keys, proximity cards, etc., from terminating employees and support the MSC in removing such individuals from automated access control systems.
- Provide pre-employment/pre-clearance suitability investigations information to the MSC for PRC prospective and current employees.

Human Reliability Program (HRP)

The Contractor shall:

- Identify HRP positions necessary for the conduct of work consistent with 10 CFR 712, *Human Reliability Program.*
- Submit a request to the MSC for enrollment in the Hanford Site HRP program for personnel occupying those positions.
- Support and/or provide personnel information, training, and administration needs of the MSC in the management of the HRP program for the Contractor's enrolled HRP personnel.
- Take personnel actions, as necessary, based on HRP test results provided by MSC.

Workplace Substance Abuse Programs

The Contractor shall comply with requirements outlined in 10 CFR 707, *Workplace Substance Abuse Programs (WSAP) at DOE Sites.*

Unclassified Foreign National Visits and Assignment (FNVA)

The Contractor shall:

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- Notify the MSC of potential foreign visitors or employees, prepare and submit security plans to the MSC for foreign national visitors to the Hanford Site before approval of the visit/assignment.
- Require FNVA training for Contractor personnel who host FNVAs.
- Conduct the FNVA in compliance with approved security plans.

Foreign Travel

The Contractor shall administer Official Foreign Travel in accordance with CRD O 551.1C, *Official Foreign Travel,* including submittal of projections of potential foreign travel, and all official foreign travel requests packages to DOE for review and subsequent submittal to DOE-HQ for approval in accordance with established timeframes, prior to any official foreign travel (Deliverable C.3.3.1.5-1).

C.3.3.1.6 Nuclear Material Control and Accountability (MC&A)

The MC&A scope involves many metric tons of accountable nuclear material (i.e., Other, Source, and SNM) in various locations on the Hanford Site. The nuclear material attractiveness and quantities encompass the entire range described in DOE requirements (e.g., Category IVE highly radioactive spent nuclear fuel, to Category I quantities of plutonium in a variety of chemical forms and isotopic amounts). The MSC manages and conducts a centralized MC&A program for the Hanford Site on behalf of DOE.

The Contractor shall perform the following MC&A functions:

- Assign an individual that will serve as the contractor's MC&A single point-of-contact, independent of line operations, with responsibility and authority to affect implementation of MC&A requirements. This individual shall work with the Hanford Site MC&A Management Official within the MSC to provide oversight of accountable nuclear material in possession of the PRC.
- Support the MSC in preparation and maintenance of a *Hanford Site-Wide MC&A Plan,* administration of treaty related activities (e.g., IAEA), performance of safeguards occurrence investigation and reporting, and scheduling of periodic inventories consistent with the Contractor's project work schedules.
- Identify personnel requiring MC&A training provided by the MSC and coordinate training schedules with the MSC.
- Conduct on-the-job MC&A training specific to PRC facilities and systems.
- Request from the MSC:
  - Final authorization to move, ship, process, or store nuclear materials, including approval of shipper/receiver plans;
  - Final approval of Material Balance Area (MBA) Custodians;
  - Final determination of MBA categorizations; and
  - Final approval of MC&A related implementing procedures.
- Respond to MSC or DOE calls related to the MC&A program.

The Contractor's MC&A program shall include coordinating and integrating all aspects of

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implementation with the MSC. The Contractor shall use the MSC for, but is not limited to:

- MC&A requirement interpretation with overall responsibility for the MC&A program;
- Training and qualification of all personnel performing MC&A functions (with the exception of specific facility/system on-the-job MC&A training);
- Nuclear materials accounting and reporting requirements for all nuclear materials both active and inactive (e.g., "V-RIS") and be responsible for the official nuclear material inventory, including discrepancy reconciliation;
- Statistical services;
- Purchasing, regulating, and managing MC&A-controlled forms and tamper indicating devices; and
- Nuclear materials measurement system approvals and measurement system control requirements for all MC&A nuclear materials measurement activities (e.g., monitoring measurement control information; collecting and analyzing measurement control information; calculating control limits and monitoring equipment performance against those limits, etc.).

The Contractor shall integrate MC&A requirements with other plans, projects/programs, and activities at all life-cycle stages and inform the MSC of such. The Contractor shall proactively take into account MC&A requirements, systems, and technologies in the planning, design, construction, and operation of new or renovated DOE facilities and activities.

C.3.3.1.7 Cyber Security

Unclassified computing at the Hanford Site is conducted on the Hanford Local Area Network (HLAN). The HLAN is the central electronic communications network that provides computing infrastructure to DOE and the majority of the prime contractors and subcontractors. The MSC manages and conducts a centralized cyber security program for the Hanford Site on behalf of DOE.

Classified computing at the Hanford Site is conducted on individual systems and isolated networks that are not inter-connected nor connected to the Internet.

The Contractor shall manage and execute cyber security responsibilities consistent with DOE requirements and the MSC centralized cyber security program to provide for confidentiality, integrity, and availability of cyber security components and information such that there is no degradation of performance, disruption or compromise of the cyber security system, including impacts to the users.

The Contractor shall coordinate and interface with the MSC regarding activities involving unclassified and classified information processing and use consistent with the Office of the Under Secretary of Energy Program Cyber Security Plan (PCSP), EM Program Security Plan (PSP), and DOE-approved Hanford System Security Plan(s) (SSP).

Classified Cyber Security

The Contractor shall:

- Identify all computers used by the Contractor, or any tier subcontractor, that process classified information.

- Ensure all computers used for classified processing are certified and accredited and properly de-commissioned when no longer required.
- Develop and maintain specific administrative procedures and hardware/software security measures to:
  - Ensure that all classified computers used to process classified information can protect that information against loss, improper use, compromise, or unauthorized alteration or modification of classified information as required by DOE directive.
  - Comply with the *Hanford Master Classified Information Systems Security Plan*.
  - Train users of classified computer systems on cyber security requirements.
  - Support the DOE-RL Information Systems Security Operations Manager (ISOM) and/or MSC, as required, to facilitate resolution of classified computer systems security issues and associated incident reporting.

Unclassified Cyber Security

The Contractor shall:

- Ensure that all systems used for unclassified processing are certified and accredited.
- Report all cyber security incidents as required by DOE directive.
- Develop and maintain specific administrative procedures and hardware/software security measures to:
  - Ensure all computers used for processing sensitive unclassified information can protect that information against loss, improper use, compromise, or unauthorized alteration or modification of information as required by DOE directive.
  - Ensure all users are provided information security awareness training.

Telecommunications

The Contractor shall comply with Hanford Site procedures and policies regarding activities involving Communications Security (COMSEC), protected distribution systems, and TEMPEST/Transmission Security programs of Telecommunications Security.

C.3.3.2 Emergency Services

C.3.3.2.1 Fire Services

As an independent contractor, the MSC manages and conducts the Fire Services for the Hanford Site. This includes wild land fire, structural fire, and ambulance emergency response. Also included, are activities, such as, hazardous material and chemical/biological/radiological emergency response, pre-fire planning, site-wide respiratory protection services, and the testing, inspection and maintenance of life safety fire protection systems in designated facilities.

The Contractor shall support access to the MSC fire services personnel, and notify the Fire Department of work activities, events, incidents, etc., that may require Fire Services involvement and/or response (e.g., medical assistance, hazardous or radiological emergency help, etc.).

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C.3.3.2.2 Emergency Operations

Emergency Management Program

The MSC establishes and maintains a centralized Emergency Operations Program and the Hanford Site-wide Emergency Preparedness (EP) Program for the Hanford Site on behalf of DOE. The EP Program is responsible for the Hanford Emergency Operations Center (EOC), develops and maintains emergency plans and procedures, performs hazard surveys and assessments, reviews hazard assessments for all facilities at Hanford, and supports Hanford Site-wide EP training and drills.

The Contractor shall develop and maintain an Emergency Management Program as described in DOE/RL-94-02, *Hanford Emergency Management Plan* for structures and waste sites under its control. The Contractor's Emergency Management Program shall be consistent with DOE requirements and the centralized EP Program. The Contractor's program shall establish processes and instructions for all Contractor EP activities. Because of the potential for the Contractor to become the event coordinator as defined in the *Hanford Emergency Management Plan*, the Contractor shall maintain a 24-hour per day, 7-days per week, capability to staff the required facility specific emergency response organization positions within 60 minutes of receipt of notification from the Occurrence Notification Center of a Hanford Site emergency.

Radiological *Assistance Program (RAP)*

The MSC manages the Region 8 Radiological Assistance Program (RAP) on behalf of DOE. The Region 8 RAP is responsible for Alaska, Oregon, and Washington and other Regions, as directed by DOE-Headquarters. The RAP mission is to provide first-responder radiological assistance to protect the health and safety of the general public and the environment; assist DOE program elements, and other Federal, state, Tribal and local agencies in the detection, identification and analysis, and response to events involving the use of radiological/nuclear material. The RAP provides 24-hour a day radiological response capabilities. The RAP teams consist of DOE/DOE contractor personnel who perform radiological assistance duties as part of their normal employment or as part of the terms of the contract between their employer and DOE. The MSC will require augmentation of RAP response team personnel, equipment, and expertise as delineated in work scope arrangements with the Contractor and other Hanford Site contractors or off-site vendors.

The Contractor shall provide qualified personnel, technical expertise, equipment, and support to the DOE Region 8 RAP to ensure maintenance and staffing of emergency teams with the ability to respond under the direction of DOE National Nuclear Security Administration (NNSA) and the U.S. Department of Homeland Security.

The Contractor shall establish an agreement with the MSC detailing the specific services to be provided by the Contractor in support of the Region 8 RAP.

The Contractor shall:

- Provide personnel, trained and qualified as RAP team members, and additional supervisory or management members as directed, to support the MSC RAP duties as delineated in its contract with DOE;
- Perform routine scheduled tasks to maintain equipment and RAP team readiness;

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- Participate in meetings, working groups, drills, and exercises;
- Provide technical expertise to the RAP team, as requested;
- Respond to declared emergencies as a RAP team member;
- Participate in no-notice activations, and
- Maintain fitness for duty, as requested.

C.3.4 Interactions

C.3.4.1 External Affairs

External Affairs includes information and involvement programs to reach diverse external parties interested in Hanford (e.g., Tribal Nations, stakeholders, news media, elected officials and their staffs, local community officials and the public) with the status, challenges and objectives of the cleanup work. For all external constituencies, the Contractor shall anticipate specific areas of concern, interest, or controversy, and employ appropriate communication strategies that inform and involve.

The Contractor shall submit an *External Affairs Program Description* for DOE approval (Deliverable C.3.4.1-1) that provides a comprehensive description of the External Affairs Program, staffing, products and services, with an emphasis on innovative approaches to communications.

DOE retains the primary role in directing the timing, substance and form of public information and will approve all products and outreach.

For activities within the Contract scope, the Contractor shall:

- Maintain effective interactions with local, regional, national and international news media. Provide information and/or resources as requested in support of DOE media interactions.
- Work with DOE to inform and involve the Tribal Nations as part of cleanup decision making processes, in accordance with the DOE American Indian and Alaska Native Tribal Government Policy and implementation guidance. Support and coordinate with DOE on the ongoing technical-staff interactions to ensure that affected tribes can be involved early and often in proposed plans and activities.
- Inform and involve the public, citizens advisory boards, and other interested parties in proposed plans and activities. Provide strategy and resources for required public comment and outreach processes related to upcoming decision making (e.g., NEPA and CERCLA).
- Reach out to the communities affected by Hanford to provide information, answer questions, and gain feedback.
- Participate in tour planning and preparation, and make facilities and personnel available as requested by DOE. Visits to the project sites shall be part of ongoing communication and outreach activities.
- Provide MSC with current information related to the Contract scope to maintain the external Hanford website.
- Participate in meetings and briefings to update interested external parties on Contract

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activities when requested by DOE.

- Provide ongoing support to DOE in the preparation of communication materials, such as presentations, fact sheets, specialized graphics and charts, large posters, and up-to-date photography.
- Maintain a 24-hour per day, 7-days per week, capability to staff the communication functions/positions of the Hanford Emergency Operations Center within 60 minutes of receipt of notification from the Occurrence Notification Center of a Hanford Site emergency.

C.3.4.2 External Review and Support

Background:

External Review and Support to DOE involves providing support during audits and assessments by entities having oversight responsibility for DOE-RL and its contractors. These entities include:

- Defense Nuclear Facilities Safety Board (DNFSB);
- Government Accountability Office (GAO);
- DOE Office of Inspector General (OIG); and
- Other governmental and DOE organizations.

The Contractor shall support DOE-RL and the MSC in hosting staff from auditing and assessing organizations, providing required presentations, responding to information requests, and providing required subject matter experts to respond to questions and information requests.

The Contractor shall:

- Support DNFSB oversight activities by:
  - Providing support for the preparation of DOE responses to DNFSB issues and recommendations that affect Contract scope.
  - Cooperating with the DNFSB and providing access to work areas, personnel, and information, as necessary.
  - Maintaining a document process in accordance with the CRD M 140.1-1B, *Interface with the Defense Nuclear Facilities Safety Board* (or current version).
- Support GAO, OIG, and other governmental and DOE oversight activities by:
  - Cooperating with assessors and auditors, and providing access to work areas, personnel, and information.
  - Providing support during audits and assessments, including delivering information within a specified time, arranging briefings, preparing presentation materials, maintaining a record of documents provided in response to requests, and making this record available to DOE-RL and/or DOE-ORP, as requested.
- Provide knowledgeable single points-of-contact for each of the following:
  - DNFSB; and
  - OIG, GAO, and other assessing governmental and DOE oversight organizations (including the DOE Office of Enforcement).

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C.3.5 Interface Management

The Contractor shall provide input to the MSC to facilitate MSC's development and maintenance of a *Hanford Site Interface Management Plan (Plan)*, which establishes and maintains interface management processes and agreements to assure effective control of technical, administrative, and regulatory interfaces.

The *Hanford Site Interface Management Plan (Plan)* shall provide the content for and processes to:

- Identify the various interfaces, define the scope of each interface, provide a brief description of the required deliverables (products, documents, procedures, services, etc.), define interface requirements, and cite applicable source documents for each interface;
- Implement changes to interface agreements through the appropriate change control process and, if necessary, contract changes; and
- Identify, track, and elevate issues for management review on a regular basis.

The *Plan* shall include:

- Organizational points of contact for participants and their responsibilities; and
- Associated controlling agreements (e.g., an MOA).

The *Plan* shall be signed by the MSC, PRC, and TOC. The MSC will submit the document to DOE for review and approval. The *Plan* shall be reviewed at least annually, and if updated, submitted to DOE for approval.

DOE shall be the exclusive authority for resolving disputes associated with any interface issues that cannot be resolved between parties in a timely manner. Costs associated with litigation arising from either the *Plan* or agreements made pursuant to the *Plan* shall not be allowable under this Contract.

The Contractor shall establish, appropriately document, and manage interfaces in accordance with the Section J Attachment entitled, *Hanford Site Services and Interface Requirements Matrix*.

Infrastructure and Services Alignment Plan and Annual Forecast of Services and Infrastructure

The Contractor shall provide input to the annual update to the Hanford Site's *Infrastructure and Services Alignment Plan* (ISAP). MSC develops, maintains, and updates the master ISAP, and submits the ISAP on an annual basis to DOE for approval. The Contractor shall concur or non-concur on the ISAP prior to MSC submittal to DOE.

The ISAP incorporates a strategic vision and describes the activities necessary to integrate MSC responsibilities with those of other Hanford Site (Mission) contractors, to right-size the infrastructure and services, and to maintain the capacity of infrastructure systems provided for

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the Site over its life-cycle. The ISAP identifies opportunities to re-engineer or replace systems as necessary (without negatively impacting the Mission Contractor's project schedules) in a timely and coordinated fashion. The ISAP also provides tactical-level information to successfully achieve MSC outcomes while minimizing the Site's life-cycle costs. The ISAP includes an approach for taking advantage of new technologies and business practices that make good business sense from a cost and schedule perspective.

As necessitated by changes to the Hanford Site funding profile, MSC provides updates to the ISAP regarding the relative priority of work requirements. The Contractor shall provide input to the *Annual Forecast of Services and Infrastructure*'s projection of needed utilities, services and infrastructure, which is incorporated into the ISAP.

Hanford Site Services and Interface Requirements Matrix

The Contractor shall provide input to the MSC to support the development of the annual update to the *Hanford Site Services and Interface Requirements Matrix*. Service provider and user interface requirements are identified in the Section J Attachment entitled, *Hanford Site Services and Interface Requirements Matrix.* Services are designated as either "mandatory" or "optional" for use by Hanford Site contractors and their subcontractors. MSC is responsible for submitting the *Hanford Site Services and Interface Requirements Matrix* to DOE with the annual ISAP. The Contractor shall concur on the Matrix prior to MSC submittal to DOE.

C.4 GOVERNMENT-FURNISHED SERVICES AND INFORMATION (GFS/I)

DOE is committed to providing effective support to the Contractor throughout the period of Contract performance, and the Contractor may request that DOE consider providing additional GFS/I. To manage the GFS/I to be furnished under the Contract and to evaluate the additional GFS/I that may be required by the Contractor, the Contractor shall submit for DOE approval:

- *Government-Furnished Services and Information Request* (Deliverable C.4-1): 12-month advance projection of GFS/I to be furnished under the Contract and additional Contractor-requested GFS/I, prior to each fiscal year; and

- *Government-Furnished* Services *and Information Request -- Update* (Deliverable C.4-2): quarterly update to the projection of GFS/I to be furnished under the Contract and additional Contractor-requested GFS/I, prior to each quarter.

DOE will review the 12-month and quarterly advance projections. If DOE can support the additional Contractor–requested GFS/I, DOE will notify the Contractor within 30 days that the additional Contractor-requested GFS/I can be provided, and will provide the Contractor details regarding the DOE action(s). The supported GFS/I will be added to the Section J Attachment entitled, *Government-Furnished Services and Information (GFS/I)*, as a DOE commitment to the Contractor.

If DOE cannot support a Contractor request, DOE will notify the Contractor within 30 days that the requested GFS/I cannot be provided, and there will be no DOE commitment to the Contractor to furnish the GFS/I.

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For the additional Contractor-requested GFS/I, DOE will use its best efforts to meet these requests; however, in the event that DOE is unable, for any reason, to provide the Contractor with its requested additional GFS/I, the Contractor remains fully and solely responsible for obtaining the needed services and/or information in a timely manner and without any further recourse against DOE.

C.5 SUMMARY OF CONTRACT DELIVERABLES

Table C.5, *Summary of Contract Deliverables,* summarizes the specific products the Contractor shall submit to the DOE, the type of action DOE will perform, the associated DOE response time, and the date/timeframe that the Contractor is required to submit the product.

Deliverables are considered Contractor endpoints, work-scope completions, products, reports or commitments that shall be delivered to DOE. The types of DOE action are defined as:

- Approve – The Contractor shall provide the deliverable to DOE for review and approval. DOE will review the deliverable and provide comments in writing. DOE comments will be discussed with the Contractor and the Contractor shall provide written responses. The Contractor shall re-write the documents to incorporate all DOE mandatory comments. Once DOE approves a deliverable or document, the Contractor shall place it under change control and shall make no changes to that document without further DOE approval.
- Review – The Contractor shall provide the deliverable to the DOE for review and comment. DOE will have the option of reviewing the information and providing comment. The Contractor shall respond to all written comments.
- Information – The Contractor shall provide the deliverable to DOE for information purposes only. DOE will have the option of reviewing the information and providing comments. Such comments do not require resolution under the Contract.

Table C.5, *Summary of Contract Deliverables* does not include required deliverables identified in applicable other Contract sections, DOE directives, Federal Regulations, or regulatory documents.

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Table C.5, Summary of Contract Deliverables

Deliverable Number	Deliverable	DOE		Deliverable Due Date[1]
		Action	Response Time[2]	
C.2.1-1	Transition Plan	Approve	5 working days	No later than August 1, 2008[3]
C.2.1-2	Statement of Material Differences[4]	Approve	30 days	30 days after contract Notice to Proceed
C.2.1-3	Transition Agreement(s)	Approve	15 days	45 days after contract Notice to Proceed
C.2.1-4	Weekly Written Transition Status Reports	Information	N/A	Weekly during Transition
C.2.2.4.1-1	Lessons Learned Report for PFP Facilities	Review	N/A	60 Days after completion of CD-4
C.2.3.1-1	Strategic Plan for integration of the waste treatment/disposal functions	Approve	30 days	180 days after completion of Transition
C.2.3.12-1	Update IDF Performance Assessment	Approve	180 days	At DOE Direction
C.2.3.12-2	Update IDF Waste Acceptance Criteria	Approve	60 days	At DOE Direction
C.2.4.1.1-1	Evaluation/Report with recommendations for changes in Groundwater Project activity	Information	N/A	180 days after completion of Transition
C.2.4.1.1-2	Plan for gaining community and stakeholder understanding of groundwater objectives and approaches	Review	30 days	180 days after completion of Transition
C.2.4.1.1-3	Prioritized list of recommended service water line upgrades or storm water runoff control projects	Information	N/A	180 days after completion of Transition and biennially thereafter

[1] All days refer to calendar days. When a scheduled date within this table falls on a Friday, weekend, or federal holiday, the deliverable or DOE response is due the next business day.
[2] Number of calendar days for DOE to execute its GFS/I responsibilities to provide review, approval, and/or certification action on the deliverable following Contractor submission of an acceptable product; or DOE comments on the deliverable following Contractor submission of an unacceptable product that will require revision and re-submission for DOE review, approval, and/or certification action. Documentation of DOE approval will be provided by copying the contractor on the transmittal memorandum to the regulatory agency.
[3] Deliverables that specify days from “contract Notice to Proceed” shall be calculated from August 1, 2008.
[4] Updates to the Statement of Material Differences may be made through day 45 after contract Notice to Proceed.

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Deliverable Number	Deliverable	DOE		Deliverable Due Date[1]
		Action	Response Time[2]	
C.2.4.1.2-1	Changes to document containing key physical, chemical, and other parameters/assumptions associated with modeling the fate and transport of environmental contaminants	Approve	60 days	As Required
C.2.4.1.2-2	Site Specification document	Approve	60 days	As Required
C.2.4.1.2-3	Prepare a process to manage risk assessment activities across the Hanford site.	Approve	60 days	180 days after completion of Transition
C.2.4.5-1	Annual Groundwater Monitoring Report	Information	N/A	Annually
C.2.4.6-1	Removal Action Documentation • Sampling and Analysis Plan • Engineering Evaluation/Cost Analysis • Removal Action Work Plan Remedial Action Documentation • Remedial Investigation/Feasibility Study Work Plan • Remedial Investigation Report • Feasibility Study Report • Proposed Plan Report • Remedial Design/Remedial Action Work Plan	Approve	30 days for each document	As Required
C.2.5.3-1	Plan for sequencing and structuring the content of Records of Decision and other disposition decision documents	Review	60 days	360 days after completion of Transition
C.2.5.3-2	Plan for sequencing geographical zone remediation activities	Review	60 days	At DOE Direction
C.2.5.3-3	Conceptual Design Report for each Central Plateau geographical zone	Approve	60 days	At DOE Direction
C.3.1.1-1	Project Execution Plan (PEP)	Approve	30 days	30 days after contract Notice to Proceed
C.3.1.2.2-1	PRC Baseline	Approve	90 days	June 8, 2009
C.3.1.2.2-2	Performance Measurement Baseline annual updates	Approve	60 days	Annually
C.3.1.2.3-1	PRC Performance Measurement Baseline Change Control Process	Approve	30 days	30 days after contract Notice to Proceed
C.3.1.3.1-1	Monthly Performance Report	Review	N/A	Last Tuesday of each month
C.3.1.4-1	Risk Management Plan	Approve	30 days	30 days after contract Notice to Proceed
C.3.1.5.1-1	List of standards to be used in the design of facilities and equipment	Approve	60 days	At DOE Direction

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Deliverable Number	Deliverable	DOE		Deliverable Due Date[1]
		Action	Response Time[2]	
C.3.1.5.2-1	Procurement, Construction, and Acceptance Testing Plan	Approve	60 days	At DOE Direction
C.3.1.5.2-2	Purchasing System	Approve	60 days	At DOE Direction
C.3.1.5.2-3	Construction and Acceptance Testing Program	Approve	60 days	At DOE Direction
C.3.1.5.2-4	As-built Program Description	Approve	60 days	At DOE Direction
C.3.2-1	Adopted ISMS/EMS Description	Information	N/A	30 days after contract Notice to Proceed
C.3.2-2	ISMS/EMS Description	Approve	90 days	270 days after completion of Transition
C.3.2-3	ISMS/EMS Description Updates	Approve	60 days	Annually, or as required
C.3.2-5	ISMS/ESH&Q Performance Objectives, Measures, and Commitments	Approve	60 days	Annually
C.3.2.1-1	Environmental Protection and Compliance Plan	Approve	30 days	30 days after contract Notice to Proceed
C.3.2.2-1	Revise existing Safety Basis documentation for Hazard Category 1, 2, and 3 nuclear facilities	Approve	120 days	Within 12 months of award and annually thereafter
C.3.2.2-2	Adopted Unreviewed Safety Question (USQ) Process	Approve	30 days	30 days after contract Notice to Proceed
C.3.2.2-3	Unreviewed Safety Question (USQ) Process	Approve	60 days	180 days after completion of Transition
C.3.2.3-1	Adopted Worker Safety and Health Program	Approve	30 days	30 days after contract Notice to Proceed
C.3.2.3-2	Worker Safety and Health Program	Approve	90 days	180 days after completion of Transition
C.3.2.3-3	Adopted Radiation Protection Program (RPP)	Approve	30 days	30 days after contract Notice to Proceed
C.3.2.3-4	Radiation Protection Program (RPP)	Approve	180 days	180 days after completion of Transition
C.3.2.3-5	Adopted Chronic Beryllium Disease Prevention (CBDP) Program	Approve	30 days	30 days after contract Notice to Proceed
C.3.2.4-1	Adopted QA Program(s)	Approve	30 days	30 days after contract Notice to Proceed
C.3.2.4-2	QA Program(s)	Approve	90 days	180 days after completion of Transition

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Deliverable Number	Deliverable	DOE		Deliverable Due Date[1]
		Action	Response Time[2]	
C.3.2.4-3	Adopted Assurance System Description	Information	30 days	30 days after contract Notice to Proceed
C.3.2.4-4	Assurance System Description	Approve	90 days	180 days after completion of Transition
C.3.2.4-5	Quality Assurance Status Report on Spent Nuclear Fuel Activities	Information	N/A	30 days after each fiscal year
C.3.2.4-6	Summary of Review of Quality Assurance program Description	Approve	60 days	Annually
C.3.4.1-1	External Affairs Program Description	Approve	30 days	30 days after contract Notice to Proceed and updated annually (12/1)
C.4-1	Government-Furnished Services and Information Request	Review	30 days	Annually, prior to each fiscal year
C.4-2	Government-Furnished Services and Information Request -- Update	Review	30 days	Prior to each quarter, as necessary

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