

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).

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.

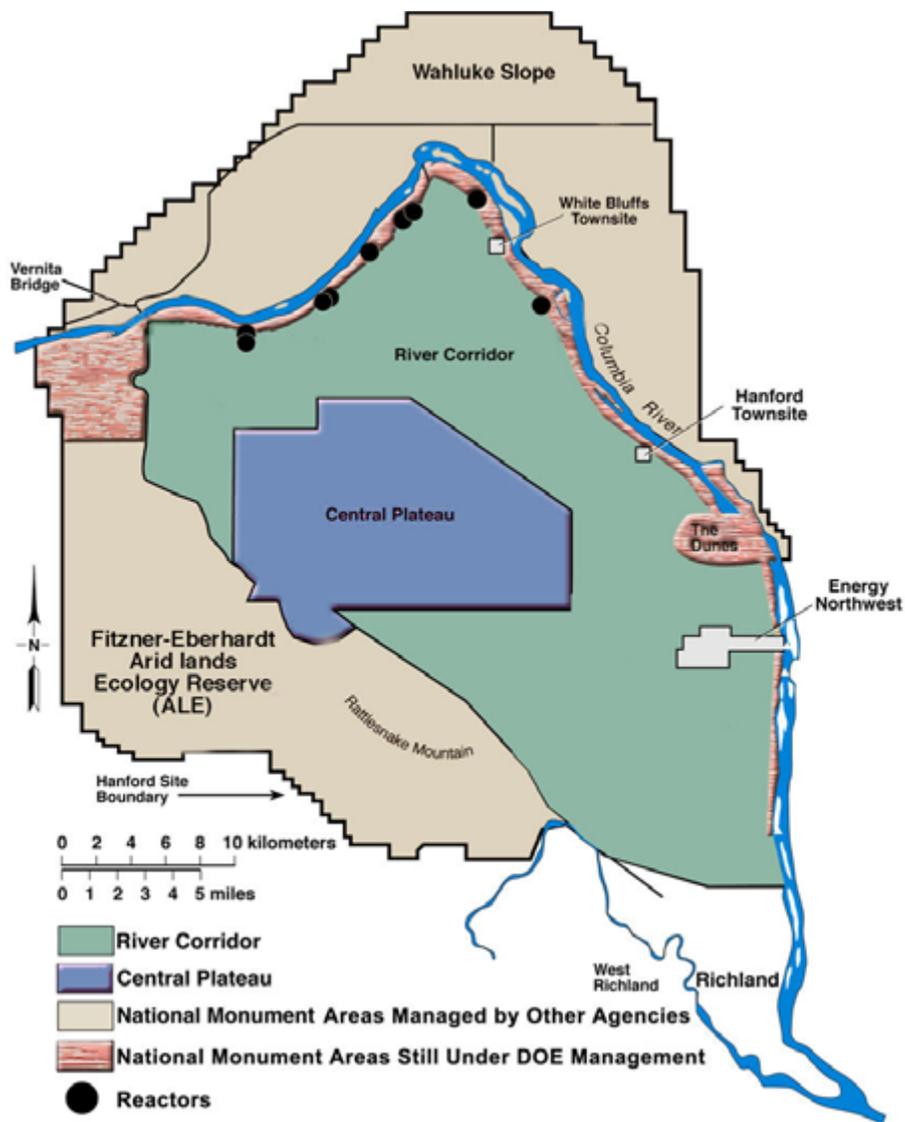


Figure C.1-1
Hanford Site

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; DOEORP'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.

- 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 longterm 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 contractoroperated Pacific Northwest National Laboratory (PNNL). PNNL is an Office of Science multiprogram 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.

- *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. [Emphasis added]**
- *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.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.

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 [Spent Nuclear Fuel] at K Basins until it has been removed. (Note: For safeguards purposes, the K Basin sludge shall be managed as SNF while in the basins.)

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:

- Deactivate K East basin systems and isolate from 105 K East Reactor,
- **Remove/drain K East basin water and transport to 200 ETF for treatment,**
- **Remove above-grade K East basin superstructure and transport to ERDF for disposal,**
- **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 utilize existing design and procurement packages to procure, construct, and acceptance test the K Basins Sludge Treatment System.

Detailed Scope and Requirements:

The Contractor shall:

- Complete sludge treatment system procurements;
- Complete modifications to the Cold Vacuum Drying Facility (CVDF);
- Complete construction of the Sludge Treatment System; and
- Obtain Critical Decision-4, *Approve Start of Operations or Project Closeout* approval as defined in DOE O 413.3.

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 50 m³) into a waste form that is suitable for off-site 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 on-site 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.

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*) 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.
- Submit a Critical Decision-4 package meeting the requirements of DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets* and DOE M 413.3-1, *Project Management for the Acquisition of Capital Assets* for DOE approval.
- 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).