Introduction

The Richland Operations Office work scope is organized and funded along Program Baseline Summaries (PBS).

The PBS’s are:

**RL-0013 Solid Waste Stabilization & Disposition** - The Solid Waste Stabilization and Disposition Project manages the resources and operates the facilities necessary to safely, and compliantly store, treat, and dispose of solid wastes, liquid waste and nuclear material. Solid waste is categorized as: Low Level Waste (LLW), Dangerous Waste (DW), Mixed Low Level Waste (MLLW) Contact Handled Transuranic (CH-TRU), and Remote Handled Transuranic (RH-TRU).

**RL-0030 Soil and Groundwater Remediation Project** - The mission of the RL-0030 Soil and Groundwater Project is to protect the Columbia River and remediate contaminated groundwater resulting from legacy plutonium production operations at the Hanford site. The RL-0030 Project also implements the CERCLA Superfund Cleanup Process in conjunction with RCRA TSD Closure Process to obtain Records of Decisions (ROD) for Central Plateau soil operable units and all groundwater operable units on the Hanford Site.

**RL-0040 Nuclear Facility D&D – Remainder of Hanford** - Decontamination, decommissioning, dismantlement, and disposition of surplus facilities (including canyon facilities) and remediation of waste sites, primarily on the Central Plateau. Secondary missions include (1) surveillance and maintenance (S&M) for facilities, and (2) field support services for other project and functional elements.

**RL-0041 Nuclear Facility D&D-River Corridor Closure Project** - The primary mission is to deactivate, decontaminate, decommission, and demolish facilities, to close utilities located in the Hanford Site river corridor, and to remediate waste sites. Secondary missions include (1) surveillance and maintenance (S&M) for facilities, and (2) field support services for other project and functional elements.

**RL-0042 Nuclear Facility D&D Fast Flux Test Facility Project** - Provide long-term, low cost surveillance and maintenance until final disposition detailed planning is performed and D4 work proceeds.
CWBS Dictionary
RL-0013
Solid Waste Stabilization & Disposition
## Scope
Operations of the facilities on the Hanford Site have resulted in the generation of a wide variety of solid waste, liquid waste, and nuclear material. Remediation of the site continues to generate significant quantities of these wastes. The Solid Waste Stabilization and Disposition Project manages the resources and operates the facilities necessary to safely, and compliantly store, treat, and dispose of these materials. Solid waste is categorized as: Low Level Waste (LLW), Dangerous Waste (DW), Mixed Low Level Waste (MLLW) Contact Handled Transuranic (CH-TRU), and Remote Handled Transuranic (RH-TRU). The TRU Waste contains radioactive constituents with very long half-lives and the RH-TRU requires shielding to protect workers from radiation exposure.

### Assumptions
1. There are no planned upgrades of the Canister Storage Building (CSB). This includes no rail spur or other improvements for ORP. ORP requires no upgrades.
2. Supercell 12 will not be required at the Environmental Restoration Disposal Facility (ERDF).
3. The Canister Storage Building (CSB) will continue to operate as is during the contract period of performance.
4. Transuranic (TRU) disposition assumes Carlsbad Field Office (CBFO) pays and provides personnel for Central Characterization Program (CCP) and for shipping resources (i.e., trucks/trailers, shipping containers, and drivers). CPCC contractor provides support including personnel, office space, HLAN access, and computers etc.
5. The Waste Receiving and Processing Facility (WRAP) cannot process remote handled transuranic (RH TRU).
6. The Waste Receiving and Processing Facility (WRAP) will be used for CH TRU loading to ship to WIPP.
7. Generators are responsible for paying the costs for MLLW treatment and disposal in trenches 31 and 34. This is a usage based service (USB) provided by CPCC.
8. CERCLA or Non-CERCLA (specifically identified in the waste acceptance criteria) Mixed Low-Level Waste (MLLW) non-TRU waste can be shipped to ERDF if it meets ERDF waste acceptance criteria.
9. WESF transition to D&D will begin after removal of the Cs/Sr capsules. Transition may include de-watering of the pools and stabilization of residual contamination.
10. All newly generated TRU waste is assumed to meet WIPP waste acceptance criteria prior to receipt for certification. Generators are responsible for paying the costs to meet waste acceptance criteria.
11. At most, 24 Sludge Transportation and Storage Containers (STSCs) containing K Basin sludge will be shipped to T Plant for temporary storage.
12. $500 K per year is assumed to be needed for Waste Encapsulation Storage Facility (WESF) maintenance and upgrades.
13. $1,000 K per year is assumed to be needed for Central Waste Complex (CWC) maintenance and upgrades.
14. One ramp operation is assumed for the Environmental Restoration and Disposal Facility (ERDF).
15. German Logs will remain in storage until a final disposition path has been determined or a National Repository accepts them for final disposition.
16. The U.S. Navy will continue to pay for all shipping and disposal costs of naval reactors or other items placed into Trench 94, and for any upgrades or replacement of any shipping or disposal equipment. Minimum safe costs for the Trench will not be paid by the Navy.
17. All TRU waste shipped will be unclassified waste.
18. All sodium waste currently in storage within the solid waste operating complex will remain in storage until a disposition path has been defined.
19. 15 multi-canister overpacks (MCOs) remain to have their canister covers welded. Sampling of MCOs will be discontinued once all MCOs have had their canister covers welded onto them.
20. All TRU waste will be shipped to WIPP.
21. Approximate Base Volumes for Outside waste containers is 300 containers and 4,000 m3
22. Some TRU waste may require criticality controls.
23. Utilize the current definition of High Level Waste as defined in DOE O 435.1.

### Requirements
1. 10 CFR 63; Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada
2. 10 CFR 71; Packaging And Transportation Of Radioactive Material
3. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
4. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
5. 10 CFR 824; Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations
6. 10 CFR 835; Occupational Radiation Protection
7. 10 CFR 850; Chronic Beryllium Disease Prevention Program
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL-0013</td>
<td>Solid Waste Stabilization &amp; Disposition</td>
</tr>
</tbody>
</table>

8. 10 CFR 851; Worker Safety and Health Program
9. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
10. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
11. 29 CFR 1910; Occupational Safety And Health Standards
12. 29 CFR 1926; Safety And Health Regulations For Construction
13. 36 CFR 60; National Register of Historic Places
14. 40 CFR 60.150; Standards Of Performance For New Stationary Sources
15. 40 CFR 61; National Emission Standards for Hazardous Air Pollutants
16. 40 CFR 122; EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
17. 40 CFR 261; Identification and Listing of Hazardous Waste
18. 40 CFR 262; Standards Applicable To Generators Of Hazardous Waste
19. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
20. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
21. 40 CFR 268; Land Disposal Restrictions
22. 40 CFR 300-372; Comprehensive Environmental Response, Compensation, and Liability Act
23. 40 CFR 302; Designation, Reportable Quantities, and Notification
24. 40 CFR 355; Emergency Planning And Notification
25. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know
26. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know
27. 40 CFR 761; Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions
28. 40 CFR 763; Asbestos
29. 41 CFR 101; Federal Property Management Regulations
30. 41 CFR 102; Federal Management Regulations
31. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs
32. 49 CFR 130; Oil Spill Prevention and Response Plans
33. 49 CFR 107; Hazardous Materials Program Procedures
34. 49 CFR 171; General Information, Regulations, and Definitions
36. 49 CFR 173; Shippers -- General Requirements for Shipments and Packagings
37. 49 CFR 174; Carriage By Rail
38. 49 CFR 177; Carriage by Public Highway.
39. 49 CFR 178; Specifications For Packagings
40. 49 CFR 179; Specifications For Tank Cars
41. 49 CFR 180; Continuing Qualification And Maintenance Of Packagings
42. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties
43. 49 CFR 385; Safety Fitness Procedures
44. 49 CFR 387; Minimum Levels Of Financial Responsibility For Motor Carriers
45. 49 CFR 390; Federal Motor Carrier Safety Regulations: General
46. 49 CFR 391; Qualifications of Drivers
47. 49 CFR 392; Driving of Commercial Motor Vehicles
48. 49 CFR 393; Parts and Accessories Necessary for Safe Operations
49. 49 CFR 395; Hours Of Service Of Drivers
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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</thead>
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<tr>
<td>RL-0013</td>
<td>Solid Waste Stabilization &amp; Disposition</td>
</tr>
</tbody>
</table>

50. 49 CFR 396; Inspection, Repair and Maintenance
51. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules
52. 33 USC 1251-1376; Clean Water Act
53. 42 USC 2011-2259; Atomic Energy Act of 1954, as amended
54. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976
55. 42 USC 7401; Clean Air Act
56. 44 USC 3105; Safeguards
57. WAC 46-48; Transportation Of Hazardous Materials
58. WAC 173-303; Dangerous Waste Regulations
59. WAC 173-304; Minimum Function Standards for Solid Waste Handling
60. WAC 173-340; Model Toxics Control Act -- Cleanup
61. WAC 173-360; Underground Storage Tank Regulations
62. WAC 173-400; General Regulations For Air Pollution Sources
63. WAC 173-401; Operating Permit Regulation
64. WAC 173-460; Controls for New Sources of Toxic Air Pollutants
65. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide
66. WAC 197-11; SEPA Rules
67. WAC 246-247; Radiation Protection -- Air Emissions
68. 00-05-006; Air Operating Permit (AOP)
69. Hanford Site Air Operating Permit
70. BCAA Regulation; Benton County Air Pollution Control Authority
71. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document
72. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document
73. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)
74. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan
75. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document
76. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment
77. RRD 005, Rev 3; Worker Safety
78. RRD 007; Chronic Beryllium Disease Prevention Program
79. RRD 008, Rev 3; Quality Assurance Program Requirements
80. DOE/RW-0333P; DOE Office of Civilian Radioactive Waste Management, Quality Assurance Requirements and Description, Revision 18
81. DOE/RW-0351; Waste Acceptance System Requirements Document, Revision 5, ICN 1
82. DOE/RW-0511; Integrated Interface Control Document, Revision 4, ICN 1
83. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL-0013</td>
<td>Solid Waste Stabilization &amp; Disposition</td>
</tr>
<tr>
<td>CWBS Number</td>
<td>CWBS Title</td>
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<tr>
<td>RL-0013.01</td>
<td>Solid Waste Program Management and Program Support</td>
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**Scope**

This scope provides for the overall program management and waste program support and technical services to insure the proper conduct of 200 Area Waste Management activities. This activity provides support to facility operations that provide services essential to Hanford and the EM cleanup missions.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
2. DOE-0342, revision 2A. "Hanford Site Chronic Beryllium Disease Prevention Program (CBDPP)," published September 19, 2013
<table>
<thead>
<tr>
<th>Scope</th>
</tr>
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<tbody>
<tr>
<td>This activity provides the project’s senior management and oversight, including senior management office services such as copying, travel, visitor control, etc. This includes:</td>
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<td>• All functions performed at the senior management level,</td>
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<td>• Strategic planning,</td>
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<td>• Integration of and coordination with project work with other projects,</td>
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<td>• Travel authorization and control,</td>
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<td>• Visitor control, and</td>
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<td>• Oversight and assessments.</td>
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<th>Assumptions</th>
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<th>Requirements</th>
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## Scope

This activity provides general and technical support to the Solid Waste Program not covered by other RL-0013.01.01 WBS elements. Work scope is:

- Development of waste forecasts.
- Preparation of Technical Proposal documents, and on-site interface with other Hanford Contractors, and subcontracts to assure that project technical needs are met.
- Administration of hazardous waste program.
- Administration of waste packaging requirements and implementation of regulations for treatment, storage and disposal (TSD) facilities, including waste acceptance criteria.
- Administration of general (across all projects) corrective action management.
- Administration of occurrence and lessons-learned reporting.
- Administration of Price Anderson Amendment Act (PAAA) compliance.
- Administration of Integrated Safety Management System (ISMS).
- Performance of independent management assessments.
- Development, implementation and maintenance of general training, such as site access, general hazardous waste training, earned value management training, work control training, etc.
- Preparation of general procedures that apply to all RL-0013 facilities.
- Administration of Quality Assurance, including reviews and revision as appropriate of the Quality Assurance Program Plan annually and oversees the overall Quality Assurance (QA) Program.
- Administration of Emergency Preparedness program, including procedure development, drills, and awareness training.
- Records management (except OCRWM), issues management reporting and tracking.
- Baseline administration and controls and management, including performance reporting and tracking and earned value system and oversight and assessments. This applies to cost estimation, schedule development and maintenance, scope statements, and risk analysis, evaluation, and assessment including management reserve administration.
- General work control administration, controls, and management, including maintenance of a job control system (or equivalent, and general work control procedure development and implementation.
- Procurement administration except for those procurements administered by the individual facilities.
- Cost records maintenance and record keeping.
- Expense and budget projections and forecasts.
- Contract management, administration and controls, including change proposal preparation.
- Procedure preparation and revision for the Solid Waste Program.
- All required training not specific to facilities (facility specific training is provided by the facility). This includes:
  - Training scheduling,
  - Curriculum evaluation,
  - Trainer evaluations,
  - Training records management,
  - Cross-cutting training program development, administration, and management.
- Engineering and technical support to the Solid Waste Program.
- Culture reviews of waste sites as required.
- Waste management program, including all necessary support to the waste management program. This includes:
  - Maintenance/operation of the Solid Waste Information Tracking System (SWITS) and associated data bases (or equivalent) and related equipment (e.g., bar code reader), and Solid Waste Integrated Forecasting Tool (SWIFT) or equivalent and associated databases.
- Maintenance of the services and cost controls needed for the waste management program.
- Solid waste forecast data call.
- Waste billings.
- Waste analysis.
- Disposal rate development and distribution.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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</thead>
<tbody>
<tr>
<td>RL-0013.01.02</td>
<td>Waste Program Support and Technical Services</td>
</tr>
</tbody>
</table>

- All solid waste disposal pool costs including indirect costs and pool distributions. This includes waste on-site, off-site and newly generated waste on or off-site that is received.
- Waste forecasts and analysis, including data calls for forecasts.
- Includes container, volume and characteristics forecast compilation and analysis.
- Maintenance of waste acceptance criteria for all Solid Waste Program storage facilities.
- Planning and scheduling support for waste shipments.
- Waste record keeping and maintenance.
- Management and control of waste acceptance criteria.
- Vehicle maintenance and provisioning, including supplying vehicles of any description.
- Project-level emergency preparedness and response, including emergency management plans, emergency planning procedures, and project building emergency plans.
- Waste Isolation Pilot Plant (WIPP) characterization and certification compliance.
- Establishment of general hazardous waste program, including training and qualification requirements, record keeping requirements, inventory controls, labeling, exposure controls, monitoring, detection instruments, protective measures, and communications to workers.

"General" means the activity applies across all Solid Waste Stabilization and Disposition facilities, and is not specific to an individual facility. The activity is cross-cutting.

Facility records are periodically transferred to a repository that is assigned responsibility for operating a uniform records management system and designated central storage facilities for records. This organization is responsible for ensuring that the records stored in designated facilities are protected from deterioration or loss. These records are updated, indexed, and retrieved when needed. This organization also transfers records to the appropriate Federal Records Center for permanent storage as required.

**Assumptions**

**Requirements**
Scope
This provides for preparation and upkeep (regular revision and additional analysis) of the safety bases for the:
• RL-0013.01.03.01 Transportation safety documents for all waste shipments both on-site and off-site. Transportation safety provides the overall responsibility for developing, implementing and maintaining the transportation and packaging program in accordance with international, federal, state, and local regulations and contract requirements for offsite and onsite shipments of regulated and non-regulated materials and wastes. This specifically includes hazardous materials and wastes, dangerous wastes, radioactive materials, and mixed hazard wastes.
• RL-0013.01.03.02 Solid Waste Operating Complex facilities (CWC, T Plant, low-level waste burial grounds, and WRAP).
• RL-0013.01.03.03 Integrated Disposal Facility.
• RL-0013.01.03.04 Waste Encapsulation and Storage facility. This includes the safety basis for the capsule removal equipment and systems, except the cask storage pad itself.
• RL-0013.01.03.05 Environmental Restoration and Disposal Facility.
• RL-0013.01.03.06 Canister Storage Building and Interim Storage Area.
• RL-0013.01.03.07 Cask Storage Area (cesium-strontium capsules cask storage pad and area).
The scope consists of:
• Preparation of all criticality safety evaluation reports and related analysis.
• Preparation of all criticality prevention program and measures.
• General safety bases development and implementation procedures.
• Performance of all unreviewed safety question screening and analysis of all facilities.
• Preparation of all hazards analyses generation.
• Preparation of all Fire Hazards.
• Preparation of all Emergency Preparedness Hazard Analysis preparation.
• Oversight of safety basis program, including assessments, corrective action tracking and closure, and lessons-learned.
This includes overall management and administration of the safety documentation program, including procedure development and revision (e.g., USQ screening procedure), and record retention as required.

Assumptions

Requirements
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.01.03.01</td>
<td>Transportation Safety Documentation</td>
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**Scope**

This provides for preparation and upkeep (regular revision and additional analysis) of the safety bases for the:

- Transportation safety documents for all waste shipments both on-site and off-site. Transportation safety provides the overall responsibility for developing, implementing and maintaining the transportation and packaging program in accordance with international, federal, state, and local regulations and contract requirements for offsite and onsite shipments of regulated and non-regulated materials and wastes. This specifically includes hazardous materials and wastes, dangerous wastes, radioactive materials, and mixed hazard wastes.

This supports safety basis development, routine nuclear and criticality safety support activities, Safety Bases implementation (includes procedure reviews/USQs), Hazards Analyses generation, Fire Hazards Analysis generation, Emergency Preparedness Hazard Analysis preparation, development of engineering studies, and Criticality Safety activities including CSER development planned as pertains to transportation.

**Assumptions**

**Requirements**
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.01.03.02</th>
</tr>
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<tr>
<td><strong>CWBS Title</strong></td>
<td>Solid Waste Operating Complex (SWOC) Safety Basis</td>
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**Scope**

This provides for preparation and upkeep (regular revision and additional analysis) of the safety bases for the:

- Solid Waste Operating Complex facilities (CWC, T Plant, low-level waste burial grounds, and WRAP).

This supports safety basis development, routine nuclear and criticality safety support activities, Safety Bases implementation (includes procedure reviews/USQs), Hazards Analyses generation, Fire Hazards Analysis generation, Emergency Preparedness Hazard Analysis preparation, development of engineering studies, and Criticality Safety activities including CSER development planned in the individual facilities.

**Assumptions**

**Requirements**
<table>
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<th>CWBS Number</th>
<th>RL-0013.01.03.03</th>
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<td>CWBS Title</td>
<td>Integrated Disposal Facility (IDF) Safety Basis</td>
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| Scope             | This provides for preparation and upkeep (regular revision and additional analysis) of the safety bases for the:  
|                   | • Integrated Disposal Facility.  
|                   | This supports safety basis development, routine nuclear and criticality safety support activities, Safety Bases implementation (includes procedure reviews/USQs), Hazards Analyses generation, Fire Hazards Analysis generation, Emergency Preparedness Hazard Analysis preparation, development of engineering studies, and Criticality Safety activities including CSER development planned in the individual facilities. |
| Assumptions       |                      |
| Requirements      |                      |
Scope
This provides for preparation and upkeep (regular revision and additional analysis) of the safety bases for the:

- Waste Encapsulation and Storage facility. This includes the safety basis for the capsule removal equipment and systems, except the cask storage pad itself.

This supports safety basis development, routine nuclear and criticality safety support activities, Safety Bases implementation (includes procedure reviews/USQs), Hazards Analyses generation, Fire Hazards Analysis generation, Emergency Preparedness Hazard Analysis preparation, development of engineering studies, and Criticality Safety activities including CSER development planned in the individual facilities.

This scope will continue until completion of the cesium and strontium capsule transfer to dry storage. At that time, the facility will be downgraded probably to a radiological facility which does not require a documented safety analysis compliant with 10 CFR 830. At that time, the scope will be reduced to submission of a radiological facility safety basis.

Assumptions

Requirements
**Assumptions**

ERDF is not a nuclear facility. It does not have to comply with 10 CFR 830. However, it does have a safety basis which must be maintained and updated as required.

**Requirements**
### CWBS Dictionary Sheet

<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL-0013.01.03.06</td>
<td>Canister Storage Building (CSB) and Interim Storage Area (ISA) Safety Basis</td>
</tr>
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</table>

**Scope**

This provides for preparation and upkeep (regular revision and additional analysis) of the safety bases for the:

- Canister Storage Building and Interim Storage Area.

This supports safety basis development, routine nuclear and criticality safety support activities, Safety Bases implementation (includes procedure reviews/USQs), Hazards Analyses generation, Fire Hazards Analysis generation, Emergency Preparedness Hazard Analysis preparation, development of engineering studies, and Criticality Safety activities including CSER development planned in the individual facilities.

**Assumptions**

**Requirements**
### Scope

This provides for preparation and upkeep (regular revision and additional analysis) of the safety bases for the:

- Cask Storage Area (cesium-strontium capsules cask storage pad and area).

This supports safety basis development, routine nuclear and criticality safety support activities, Safety Bases implementation (includes procedure reviews/USQs), Hazards Analyses generation, Fire Hazards Analysis generation, Emergency Preparedness Hazard Analysis preparation, development of engineering studies, and Criticality Safety activities including CSER development planned in the individual facilities.

This scope will begin only after completion of the cask storage area (CSA) construction and transfer of the cesium and strontium capsules to the CSA. This is expected to be completed by FY 2025. The capsules will be housed in storage casks.

### Assumptions

### Requirements
### Scope
This includes obtaining and inventorying spare equipment and replacement part needed for project facilities. This also includes maintaining control over parts, ensuring counterfeit parts are removed, and maintaining adequate records of parts. In addition, this includes maintaining safety class and safety related parts under required control.

### Assumptions

### Requirements

<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL-0013.01.07</td>
<td>Waste Stabilization &amp; Disposition (WSD) Spare Parts Inventory</td>
</tr>
</tbody>
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Scope

This requires maintaining and revising all controls and records needed for special nuclear material, spent fuel, cesium or strontium capsules, and any other material which may ultimately be disposed of in a national repository.

The work scope is:
• Provide site input and review of OCRWM interface documents (Waste Acceptance Systems Requirements Document, Integrated Interface Control Document, etc.).
• Provide site technical and programmatic interface with the National Spent Nuclear Fuel (NSNF) Program and OCRWM, including input, review, and technical support for deliverables affecting Hanford spent nuclear fuel inventories.
• Provide OCRWM technical interpretative authority input to current fuel custodians and Sludge Treatment
• Project (for Knock-Out Pot material disposition) for resolution of issues potentially affecting repository acceptance of respective materials.
• Develop compliance information/documentation (data packages) to demonstrate that each spent nuclear fuel package conforms to repository requirements. Validate information used to support repository acceptance.
• Develop/maintain planning for Hanford Site facilities/systems to prepare fuel for final disposition, including container loading plan.
• Maintain OCRWM Q list to satisfy OCRWM QA program requirements for repository acceptance.
• Evaluate onsite “found fuel” for acceptability in the CSB/200 Area ISA and final disposition.

Assumptions

Requirements
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.01.09</td>
<td>Special Nuclear Materials De-Inventory Analysis</td>
</tr>
</tbody>
</table>

**Scope**
This requires maintaining and revising all controls and records needed for shipping special nuclear material to a national repository.

**Assumptions**

**Requirements**
Scope

The Waste Encapsulation and Storage Facility (WESF) was designed and constructed to process, encapsulate, and store 90Sr and 137Cs separated from wastes generated during the chemical processing of defense fuel on the Hanford Site.

The current WESF mission is to store cesium and strontium capsules in a safe manner and in compliance with all applicable rules and regulations. The scope of the WESF mission is currently limited to facility maintenance activities; inspection, decontamination, and movement of capsules; and storage and surveillance of capsules until such time as they are removed to dry storage elsewhere. WESF consists of the 225 - B Building and several support buildings and systems. The 225 - B Building is a two size=3 -story structure 48 m (157 ft) long by 30 m (97 ft) wide by 12 m (40 ft) high at the outside dimensions. The first floor is 1300 m2 (14,000 ft2) and the second floor is 560 m2 (6,000 ft2). The ground elevation at this facility is approximately 213 m (700 ft) above sea level and is approximately 61 m (200 ft) above the underground water table. The building is divided into Area 1, Area 2, and Area 3. Area 1 is a one - story above grade reinforced masonry wall structure with a metal deck diaphragm roof supported on open - web steel joists and steel beams and includes the WESF support area, heating ventilation and air conditioning room, pool cell entry airlock, and pool cell monitoring area. Area 2 is a two - story above grade structure with reinforced concrete roof and floor slabs supported by reinforced concrete shear walls in the section of the 225 - B Building enclosing the hot cells, canyon, hot and cold manipulator shops, manipulator repair shop, operating gallery, service gallery, and aqueous makeup area. Area 3 is a one-story structure that contains the truckport and pool cell area (pool cells are below grade). The closest facility to WESF is B Plant, which is directly adjacent to the WESF 225-B Building.

WESF is located in the Hanford 200E Area adjacent to the west end of B Plant. WESF consists of the 225 B Building and the following primary support buildings:

• TK 100, Low-Level Liquid Waste (LLLW) Tank and Pit
• 225 BA, K1 Filter Building
• 225 BB, K3 Filter Pit
• 225 BC, WESF Compressor Building
• 225 BD, WESF Waste Monitor and Sample Building
• 225 BE, Maintenance Shop
• 225-BF, Air Dryer Building
• 225-BG, WESF Closed Loop Cooling Equipment Building (including cooling towers)
• 225BG-GEN-1, Closed Loop Cooling System (CLCS) Diesel Generator
• 226-B, Waste Storage Area
• 272-B, WESF Support Building
• 282 B, Deep Well
• 282 BA, Deep Well (deactivated)
• 296 B 10, K1 and K3 Exhaust Stack
• 225B-DG-1 Diesel Generator
• TK 50 Pit
• MO 312, Laundry Storage Trailer
• Miscellaneous Conex boxes
• 25 Ton Crane
• 225-B-BA, Package Boiler (operated by Johnson Controls, Inc.) – no longer operational.

Additional administrative and support buildings (i.e., mobile office trailers, 211 BA Auxiliary Building, 272 BA Auxiliary Building, 272-BB Tool Crib, and 294 B Raw Water Backflow Preventer Building) are also a part of WESF.

Scope consists of:

• Surveillance and maintenance of required equipment.
• All support functions, including facility management.
• Facility upgrades.
• Preparation for transition to PBS 40 (Hanford D&D).
• Transition activities.
• Transfer to PBS 40.
### Assumptions

**Requirements**

1. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
2. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
3. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
4. 40 CFR 268; Land Disposal Restrictions
5. 40 CFR 302; Designation, Reportable Quantities, and Notification
6. 40 CFR 355; Emergency Planning And Notification
7. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know
8. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know
9. 40 CFR 761; Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions
10. 40 CFR 763; Asbestos
11. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976
12. 42 USC 7401; Clean Air Act
13. WAC 173-303; Dangerous Waste Regulations
14. WAC 173-401; Operating Permit Regulation
15. WAC 173-460; Controls for New Sources of Toxic Air Pollutants
16. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide
17. WAC 246-247; Radiation Protection -- Air Emissions
18. 00-05-006; Air Operating Permit (AOP)
19. Hanford Site Air Operating Permit
20. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document
21. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document
22. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)
23. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan
24. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document
25. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment
26. RRD 005, Rev 3; Worker Safety
27. RRD 007; Chronic Beryllium Disease Prevention Program
28. RRD 008, Rev 3; Quality Assurance Program Requirements
29. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure

**Work scope does not include:**

- Removal of the cesium and strontium capsules from the pools.
- Demolition of any WESF facility.
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<tr>
<td>RL-0013.02</td>
<td>Waste Encapsulation Storage Facility (WESF)</td>
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### Scope
Upgrades are defined as replacement of existing equipment with newer better equipment that performs the same basic function, or installation of new equipment not previously in the facility.

The mission of the Waste Encapsulation Storage Facility (WESF) is to safely store cesium and strontium capsules in the WESF pool cells until the capsules are removed for final disposition as part of Project W-135. This WBS element contains life extension upgrades to WESF to assure continued safe, cost-effective, compliant operations throughout the operating life of the facility, and through Deactivation & Decommissioning (D&D). These projects are one-time upgrades that will be done only once prior to D&D of the facility.

The following criteria will be used to identify the upgrades needed:
- Reduce documented safety analysis (DSA) hazard conditions,
- Upgrade obsolete equipment that will be needed for the life of the facility,
- Refurbish infrastructure that will be needed for the life of the facility, or
- Establish a strong configuration baseline, including documentation of capsule information.

These activities are generally performed by contractor personnel and contracted services where applicable. The level of support is dictated by the appropriate compliance regulations and requirements and by work priorities among the various facilities.

WESF may perform the following upgrades during the contract period. The disposition or the plan for dispositioning these activities is noted below:

- **Installation of Lightweight Pool Cell Covers:** Final determination on the feasibility of installing lightweight Pool Cell Covers will be made following resolution of safety basis issues related to hydrogen generation in the WESF pool cell area.

- **Replacement of Motor Controllers:** The existing WESF motor control centers are old equipment that is difficult to obtain replacement parts for. The intent of this activity is to replace them with modern, UL compliant equipment. This activity has not yet been performed.

- **Replacement of Beta/Gamma Monitoring System:** A small fraction of the pool cell water circulating through the cooling loop is diverted past a beta monitoring system. This system provides an early warning indication of a release of radioactive material from the capsules. The beta monitoring system uses a detector that consists of a scintillation crystal and photo multiplier. These components were designed and built at Hanford and when the existing inventory of spare parts is exhausted it will become increasingly difficult to maintain the beta monitoring system. The WESF Long Range Plan Rev 0 recommended replacing the existing system with an industry standard system to ensure that parts and support will be readily available when needed and that it would last through the expected life of the facility. The beta monitoring system will not be needed after the capsules have been removed from the pool cells and placed into dry storage. The beta monitoring system has performed better than expected and at this time it is judged that sufficient spare parts are on-hand. Should the capsule removal activity not occur as currently planned, then the need to upgrade this system will be reviewed as part of an overall life-extension evaluation that would be needed to determine the suitability of WESF systems for continued capsule storage.

- **Modification of Capsule Cart:** This activity will replace the operating cable attachment device for the capsule cart to ensure its continued operation. This work has not yet been performed.

- **Installation of Rain Intrusion protection at TK-50:** This activity has not yet been completed.

Excluded from this WBS element is:
- **Removal of the cesium and strontium capsules.**

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
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<tr>
<td>RL-0013.02.03</td>
<td>Waste Encapsulation Storage Facility Upgrades</td>
</tr>
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</table>
**Scope**

This scope covers the activities needed to prepare the Waste Encapsulation and Storage Facility (WESF) for transition to decontamination and decommissioning (D&D) and transfer of the facility to PBS RL-0040. This includes:

- Removal of basin water (all three basins) and transportation away from the facility.
- Decontamination of the WESF after removal of water. This scope includes separate WBS sub-elements for the basins and for the remainder of the facility.

This excludes any processing or treatment of the contaminated water after its removal from the basins. Transition preparations may begin after removal of the cesium and strontium capsules from the basins. Transition is performed following the guidance of DOE G 430.1-5, Transition Implementation Guide.

**RL-0013.02.04.01 Remove Waste Encapsulation Storage Facility Basin Water**

This WBS element covers removal of shielding water from the WESF basins after removal of the cesium and strontium capsules from the facility. Water from each basin will be pumped out to either tanker trucks or to other piping system and transferred to a processing system for disposal.

The basins are filled with deionized water that is routinely purified by an ion exchange system in pool cell 11. The pool cell area is 10 m (34 ft) wide by 22 m (72 ft) long by 4 m (13 ft) high and is located on the west side of the 225-B Building. The pool cell area has 12 pool cells that support underwater storage of the strontium and cesium capsules. Pool Cell 1 is 2.7 m (8 ft 9 in.) wide, 6.6 m (21 ft 9 in.) long, and 5.5 m (18 ft) deep. Pool Cells 2 through 11 are 1.3 m (4 ft 5 in.) wide, 6.6 m (21 ft 9 in.) long, and 5.5 m (18 ft) deep. Pool Cell 12 runs along the east side of Pool Cells 1 through 11 and is 1 m (3 ft) wide by 19.8 m (64 ft 11 in.) long by 4.7 m (15 ft 6 in.) deep. The south end of Pool Cell 12 contains a cask pit 1.3 m (4 ft 5 in.) wide by 2.3 m (7 ft 5 in.) long by 5.5 m (18 ft) deep. The Pool Cell Pipe Tunnel runs along the west side of Pool Cells 1 through 11 and the north side of Pool Cells 11 and 12. The Pipe Tunnel, as it runs along the west side of Pool Cells 1 through 11, is 2.3 m (7 ft 6 in.) wide by 21.8 m (71 ft 6 in.) long by 3.7 m (12 ft 3 in.) deep. The Pipe Tunnel as it runs along the north side of Pool Cell 11 is 7.2 m (26 ft 9 in.) wide by 1.1 m (3 ft 7 in.) long by 3.7 m (12 ft 3 in.) deep plus a section that is 0.9 m (3 ft) wide by 1.3 m (4 ft 4 in.) long by 3.7 m (12 ft 3 in.) deep. The 0.3 m (1 ft) thick pipe tunnel ceiling is the floor of the pool cell pump trench, which houses the pool cell circulation pumps. All dimensions of the pump trench are the same as the pipe tunnel except for the depth, which is 1.5 m (5 ft). The top of the pump trench is the floor of the pool cell area.

All pool cells have liners constructed of 16-gauge type 304L stainless steel at the sides and 14 gauge type 304L stainless steel flooring. Transfer ports connect Pool Cells 1 through 11 to Pool Cell 12. Although all pool cells, except Pool Cell 12, are designed for cover block installation, cover blocks are not normally installed on pool cells that store capsules to prevent potential damage to the capsules due to a cover block drop. Pool Cells 8 through 11 do not store capsules and each has three 76 cm (30 in.) thick concrete cover blocks installed, which are removed as required to access equipment. Pool Cell 1 has one 76 cm (30 in.) cover block installed. Cover blocks may be installed on a pool cell containing capsules in response to an emergency (e.g., loss of capsule integrity).

Pool Cells 1, 3, 4, 5, 6, and 7 are currently used for capsule storage. Each of these pools is normally filled with deionized water and contains three capsule storage racks. The racks are left after water removal, unless their radiation requires their removal. The radiation levels are not presently known.

Pool Cells 2 and 8 are also normally filled with water and used as shielding pools. Pool Cells 9 and 10 store collected waste water from the pool cell area for sampling (if required) prior to batch discharge to an external facility for processing. Pool Cell 11 (normally dry) contains the pool cell water quality ion exchange system. Pool Cell 12, also known as the transfer aisle, is filled with water and is used to transfer capsules between pool cells and G Cell and can store capsules if necessary. The pool cell transfer ports for active pool cells are normally maintained opened. Closing the transfer ports isolates one pool cell from another. Opening the transfer ports allows interaction between the pool cells.

Basins hold approximately 130,000 GAL, as follows:

- Pool Cell 1: 18,477 GAL
- Pool Cell 2, 3, 4, 5, 6, 7, 8, 9, 10, 11: 9,336 GAL each
- Pool Cell 12: 17,908 GAL.

Pump water is slightly radioactive, but not significantly.

Existing systems (e.g., the pool cell water quality ion exchange system) in the basins will be left in place after removal of water. Water removal scope is:

- Procure and install removal equipment, e.g., pump.
- Prepare procedures for pump operation.
- Train staff.
- Connect removal equipment discharge to disposal method. Disposal provided by either tanker trucks or piping system to disposal facility (e.g., liquid effluent facility).
- Pump water from the basin.
- Monitor basin radiation levels while pumping proceeds.
### Assumptions

Some residual water may be left in the basin, to be allowed to evaporate. However, it is expected that this would be less than one-inch deep.

### Requirements

1. See higher level WBS level for additional requirements.
Scope
This WBS element covers removal of shielding water from the WESF basins after removal of the cesium and strontium capsules from the facility. Water from each basin will be pumped out to either tanker trucks or to other piping system and transferred to a processing system for disposal.

The basins are filled with deionized water that is routinely purified by an ion exchange system in pool cell 11.

The pool cell area is 10 m (34 ft) wide by 22 m (72 ft) long by 4 m (13 ft) high and is located on the west side of the 225-B Building. The pool cell area has 12 pool cells that support underwater storage of the strontium and cesium capsules. Pool Cell 1 is 2.7 m (8 ft 9 in.) wide, 6.6 m (21 ft 9 in.) long, and 5.5 m (18 ft) deep. Pool Cells 2 through 11 are 1.3 m (4 ft 5 in.) wide, 6.6 m (21 ft 9 in.) long, and 5.5 m (18 ft) deep. Pool Cell 12 runs along the east side of Pool Cells 1 through 11 and is 1 m (3 ft) wide by 19.8 m (64 ft 11 in.) long by 4.7 m (15 ft 6 in.) deep. The south end of Pool Cell 12 contains a cask pit 1.3 m (4 ft 5 in.) wide by 2.3 m (7 ft 5 in.) long by 5.5 m (18 ft) deep. The Pool Cell Pipe Tunnel runs along the west side of Pool Cells 1 through 11 and the north side of Pool Cells 11 and 12. The Pipe Tunnel, as it runs along the west side of Pool Cells 1 through 11, is 2.3 m (7 ft 6 in.) wide by 21.8 m (71 ft 6 in.) long by 3.7 m (12 ft 3 in.) deep. The Pipe Tunnel as it runs along the north side of Pool Cell 11 is 7.2 m (26 ft 9 in.) wide by 1.1 m (3 ft 7 in.) long by 3.7 m (12 ft 3 in.) deep plus a section that is 0.9 m (3 ft) wide by 1.3 m (4 ft 4 in.) long by 3.7 m (12 ft 3 in.) deep. The 0.3 m (1 ft) thick pipe tunnel ceiling is the floor of the pool cell pump trench, which houses the pool cell circulation pumps. All the dimensions of the pump trench are the same as the pipe tunnel except for the depth, which is 1.5 m (5 ft). The top of the pump trench is the floor of the pool cell area.

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Basins hold approximately 130,000 GAL, as follows:
Pool Cell 1: 18,477 GAL
Pool Cell 2: 3, 4, 5, 6, 7, 8, 9, 10, 11: 9,336 GAL each
Pool Cell 12: 17,908 GAL.

Pool water is slightly radioactive, but not significantly.

Existing systems (e.g., the pool cell water quality ion exchange system) in the basins will be left in place after removal of water.

Water removal scope is:
- Procure and install removal equipment, e.g., pump.
- Prepare procedures for pump operation.
- Train staff.
- Connect removal equipment discharge to disposal method. Disposal provided by either tanker trucks or piping system to disposal facility (e.g., liquid effluent facility).
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<td>Requirements</td>
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- Pump water from the basin.
- Monitor basin radiation levels while pumping proceeds.

Some residual water may be left in the basin, to be allowed to evaporate. However, it is expected that this would be less than one-inch deep.

1. See higher level WBS level for additional requirements.
### Scope

This scope will be performed after removal of basin water from the WESF pool cells following removal of the cesium and strontium capsules. This is performed in preparation of transition of WESF to RL-0040.

This scope covers the activities needed to prepare the Waste Encapsulation and Storage Facility (WESF) for transition and transfer of the facility to PBS RL-0040. This includes:

- Decontamination of the WESF after removal of water and the pool cell floors are dry or as dry as decided. The scope is to remove significantly contaminated equipment and shutdown equipment no longer needed for operations.

Decontamination consists of two processes—decontamination of the 12 WESF pools and decontamination of the remainder of the facility.

Pool cell decontamination begins after water removal. A radiation survey is taken of each pool cell, specifically the walls and floors. The cell floors may be dry or may have a small layer of water to serve as shielding. The survey is then reviewed and method to decontaminate the floor and walls is determined. Some hot spots may exist along the floor. Hot spots are not expected on the walls. Contamination removed from the pool cells is collected in suitable shielded containers and disposed of at ERDF assuming it meets ERDF waste acceptance criteria. It is not expected that all contamination will be removed.

Decontamination of the remainder of the facility will also proceed in a similar fashion. The facilities expected to have some contamination of concern are:

- TK 100, Low-Level Liquid Waste (LLLW) Tank and Pit
- 225 BA, K1 Filter Building
- 225 BB, K3 Filter Pit
- 226-B, Waste Storage Area
- 225-B Building.

A radiation survey is taken of each area, including the walls and floors and K1 and K3 ventilation ducts. The survey is then reviewed and method to decontaminate the floor and walls is determined. Some hot spots may exist along the floor, walls, and ducting. Contamination removed is collected in suitable shielded containers and disposed of at ERDF assuming it meets ERDF waste acceptance criteria.

Contaminated equipment that can be removed is removed and disposed of (e.g., at ERDF). It is not expected that all contamination will be removed. Transition preparations may begin after removal of the cesium and strontium capsules from the basins.

This excludes actual transition of the facility.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
## Scope
This scope includes transition of the Waste Encapsulation and Storage Facility and transfer to PBS RL-0040, Remainder of Hanford D&D. Transition is guided by DOE Guide DOE G-430.1-5, Transition Implementation Guide.
- Transition covers the following scope:
  - Assembly of an integrated transition team.
  - Characterization of the facility.
  - Stabilization of known and discovered hazards following characterization.
  - Assembly of records of the facility needed for D&D as determined by the integrated transition team.
  - Shutdown, deactivation, and de-energization of the facility.
  - Pre-transfer preparations.
  - Transfer to D&D.
- Transition will occur after completion of transition preparation (separate WBS element).

## Assumptions

## Requirements
1. See higher level WBS level for additional requirements.
### Scope
Transition is guided by DOE Guide DOE G 430.1-5, Transition Implementation Guide. Transition involves preparation and process of transferring responsibility of a facility from operations activities that have been completed to PBS 40, Hanford D&D for final disposition. A DOE facility or any part thereof is considered to be in the operational phase of its life cycle until it is declared or forecast to be excess. As such, all DOE Orders, regulations, etc., that apply to the facility during the operational phase of its life cycle are still in force even though it is considered to be in a condition of standby, shutdown, abandoned, or legacy. The responsible operating programs should understand that these requirements (adjusted to the current “operating” conditions) are applicable and should be followed.

The facility will be a radiological control facility. The facility will have no further operational use.

The team must have full range of skills within respective organization structures for formation. After formation, the team will:

- Approve strategies and plans;
- Mediate institutional and budget issues;
- Resolve conflicts that might impede expected results;
- Ensure schedule and budget for the facility are mutually consistent with overall priorities and allocations; and
- Direct formation and specifying the authority of the integrated team.

The composition and size of the integrated team and the specific personnel chosen for the team (generally a multidisciplinary group of site managers, engineers, safety and health personnel, and workers) should be determined using the graded approach based on facility complexity, hazards, risks, and programmatic impacts. Team members can include facility and program representatives from DOE field elements, operating program and disposition program contractor representatives (if different) as well as DOE Headquarters representatives from line and integrating offices and other technical staff as required. On a case-by-case basis, experts from disciplines such as emergency management, security, and technology development may be included as part of the integrated team.

A DOE employee should be designated as the primary transition manager and should also lead the integrated team.

Experience has shown that agreement on the results of facility characterization can be reached much sooner when representatives from both the operating and disposition programs are represented on the integrated team. The integrated team leads in assessing the facility condition and identifying and implementing stabilization actions and subsequent end-points-driven activities before the facility is transferred to the disposition program. Specific objectives can be established that address (1) the physical condition/contamination status of the facility; (2) stabilization actions needed; (3) integrating safety management into the transfer process; and (4) the administrative/budgeting status of the facility.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
Transition is guided by DOE Guide DOE G 430.1-5, Transition Implementation Guide. Transition involves preparation and process of transferring responsibility of a facility from operations activities that have been completed to PBS 40, Hanford D&D for final disposition. A DOE facility or any part thereof is considered to be in the operational phase of its life cycle until it is declared or forecast to be excess. As such, all DOE Orders, regulations, etc., that apply to the facility during the operational phase of its life cycle are still in force even though it is considered to be in a condition of standby, shutdown, abandoned, or legacy. The responsible operating programs should understand that these requirements (adjusted to the current “operating” conditions) are applicable and should be followed.

The facility will be a radiological control facility. The facility will have no further operational use.

Hazardous materials and wastes must be identified, characterized, and stabilized (if necessary), properly stored, and removed and that S&M activities be conducted to maintain the facility and remaining hazardous and radioactive materials, wastes, and contamination in a stable and known condition pending facility transfer. This identification process—which is the responsibility of the operating program but generally is performed in coordination with the disposition program—entails a graded characterization12 of the facility to establish existing conditions of the facility and its contents. The characterization process should be considered “all-inclusive” and will, generally, include the collection and assessment of facility and process information gained from activities such as questionnaires, interviews, facility walk-downs, document reviews, and any other sampling, analysis, and assessments required to meet the drivers listed below.

WESF consists of the 225 B Building and the following primary support buildings:

• TK 100, Low-Level Liquid Waste (LLLW) Tank and Pit
• 225 BA, K1 Filter Building
• 225 BB, K3 Filter Pit
• 225 BC, WESF Compressor Building
• 225 BD, WESF Waste Monitor and Sample Building
• 225 BE, Maintenance Shop
• 225-BF, Air Dryer Building
• 225-BG, WESF Closed Loop Cooling Equipment Building (including cooling towers)
• 225BG-GEN-1, Closed Loop Cooling System (CLCS) Diesel Generator
• 226-B, Waste Storage Area
• 272-B, WESF Support Building
• 282 B, Deep Well
• 282 BA, Deep Well (deactivated)
• 296 B 10, K1 and K3 Exhaust Stack
• 225B-DG-1 Diesel Generator
• TK 50 Pit
• MO 312, Laundry Storage Trailer
• Miscellaneous Conex boxes
• 25 Ton Crane
• 225-B-BA, Package Boiler (operated by Johnson Controls, Inc.) – no longer operational.

Additional administrative and support buildings (i.e., mobile office trailers, 211 BA Auxiliary Building, 272 BA Auxiliary Building, 272-BB Tool Crib, and 294 B Raw Water Backflow Preventer Building) are also a part of WESF.

A facility walkdown in each of the above is conducted with operational staff and supervision to determine the following. The primary drivers for the identification and characterization of the facility are:

• understanding and documenting the condition, liabilities (risks and hazards), and content of the facility,
• determining and specifying both early stabilization actions and those for which more detailed planning (i.e., development and allocation of stabilization end-points) are needed,
• developing information documenting the revised authorization basis (if necessary) and facility conditions prior to transfer, and
• identifying the estimated post-transfer S&M activities and associated costs and adequate target funding to be transferred from the operating program along with the facility.

The process of a graded characterization for transition purposes should begin with the use of existing knowledge of the facility, its processes, and material inventory from the operations phase. Available documentation of facility operating information (authorization basis, environmental, operating history, and process knowledge) and existing hazard baseline documentation (including emergency management hazards assessments) should be analyzed. In addition to the analysis of existing information, hands-on facility and system reviews are generally needed to provide a more detailed understanding...
and also to provide information on changes in hazardous conditions that have resulted from cessation of facility operations.

The intent of the facility characterization is to clearly identify and record what is known and what is not known about facility conditions. The purposes of the facility walk-down and its associated activities are to:

• ensure that sufficient information has been collected, assembled, and analyzed to provide an understanding of existing conditions and hazards;
• identify additional characterization (if any) and all stabilization activities required;
• identify and allocate resources needed to maintain stable and known conditions of the facility, its systems and equipment pending disposition;
• permit efficient deactivation (or decommissioning) planning; and
• minimize the possibility of halting the progress of deactivation (or decommissioning) tasks because of significant unforeseen circumstances.

A report must be prepared to document the results of the facility walk-down and associated activities. A copy of this report is to be included as part of the final validation documentation.

Each of the following elements should be included in the planning and conduct of, and follow-up (as required) to the characterization, as appropriate to the complexity of the facility:

• An explicit delineation of the physical boundaries of the facility being transferred, including a list of physical structures and waste sites associated with the facility. It is also important to identify areas (rooms, systems, etc.) of the facility that will not be transferred. Rationale should be provided as to why these areas are not included in the transfer and who retains responsibility for them. For example, rooms and/or systems within or associated with an excess facility may be required to maintain plant electrical power even though the facility itself will no longer require electrical power and could be demolished. The impact(s) associated with such a deviation should be documented. Drawings, photographs, and other records reflecting the as-built and as-modified condition of the facility and its surrounding grounds should be a part of this element.

• An operating history (including previous operational records) of the facility giving the process knowledge of the nuclear and chemical materials that were handled and major spills or leaks that occurred.

• A description of the condition of all structures, existing engineered protective barriers, and systems installed to prevent migration of both hazardous and radioactive contamination to the environment and that ensure the safety of workers, the public, and the environment. Data collection and reporting systems such as FIMS and the Condition Assessment Survey can be used as a starting point for this purpose but are not to be used in place of the facility walkdown.

• To the extent possible, data from systems such as these should be validated as being complete, accurate, and current.

• A description of the nature, levels, and probable extent of the existing hazardous chemical contamination, the radiological contamination, and direct radiation fields within and around the facility.

• An accurate and complete inventory (including associated uncertainties) of types, forms, quantities, and locations of all special nuclear and fissionable materials.

• An inventory or estimate and the locations of the remaining hazardous material, waste and chemical inventories, and any associated uncertainty. This should include form and distribution information.

• The occupational hazards associated with the facility. This evaluation should focus on fixed hazards. Temporary occupational hazards created to support operations and maintenance should be removed by the operations organization.

• Information on any other factors such as potential future use, long-range site plans, facility condition, and potential health, safety, and environmental hazards that could influence the selection of decommissioning alternatives (safe storage, entombment, dismantlement, etc.) or deactivation alternatives (thermal stabilization, residue elimination, separation of utilities, etc.).

A characterization report is then prepared.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<th>CWBS Title</th>
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<tr>
<td>RL-0013.02.05.02</td>
<td>Waste Encapsulation Storage Facility Characterization</td>
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Scope

Although a number of stabilization actions may be identified to meet these requirements from the assessments and observations completed during the facility walk-down and associated activities, others will require the application of a more detailed planning process. As the stabilization actions are identified, they are generally grouped into two categories; those that can or should be completed early during the transition phase and those that will be completed later since they require more detailed planning. Early stabilization actions can begin without waiting for the completion of the formal planning process using systems engineering concepts and processes that determines transition completion conditions (i.e., end-points) and identifies the probable disposition path. It is expected that appropriate planning to ensure the safety of the worker, the public, and the environment in the performance of these early stabilization actions is completed and approved prior to the start of work. Early stabilization actions generally focus on eliminating or mitigating obvious unstable conditions and hazards. There may be other early stabilization actions identified that are not safety related but also make sense to complete early. Stabilization activities that can begin before formal end-point planning is complete are (1) those for which the end-point is apparent and work can continue to that point and (2) those that can begin with the anticipation that the end-points process will provide the completion specifications.

Process Systems & Equipment - Process systems and equipment are systematically shut down, isolated, sealed off, or removed (if there is a compelling reason to do so) to establish a stable and known condition.

• Complete activities dependent on plant-specific process, operating, and facilities engineering.

• Empty process equipment and piping of process chemicals.
  - Conduct final clean out process runs.
  - Drain all tanks, vessels, and piping containing radiological and/or hazardous chemical fluids to the degree practicable. Record the amount of residual fluid.

• Establish and archive records required to reactivate systems/equipment (if necessary) during the disposition phase, including previous characterization efforts.

• Systematically isolate (i.e., lockout/tagout) utility systems (formerly required to support process equipment or systems) that will no longer be operated or required for disposition or S&M.

• Establish and archive records required to reactivate systems/equipment to be used for dispositioning activities including previous characterization efforts.

• List and specify the stabilized status for radiation and radioactive contamination of each facility space, room, and area.

• Any structure(s) and existing radiation monitoring systems as required, are left and maintained in place and are in a physical condition adequate to contain and monitor potential release of any radioactive contamination.

• The most current radiation contamination, hazardous, and toxic materials survey of the facility and surrounding areas are provided.

• Quantities of radioactive materials (in both solid and liquid form) in the facility have been reduced below threshold levels sufficient to support a stable and known condition.

• Dispose of radioactive sources (i.e., items catalogued as sources for purposes of calibration, etc.).

• Hazardous materials and chemicals are removed in accordance with environmental regulations. The only liquids remaining are minor quantities that cannot be readily removed with installed equipment.

Where feasible, RCRA closure has been achieved for listed materials. Hazardous materials remaining in the facility are contained in limited areas or have been stabilized against release. Documentation of the amount and location of remaining hazardous material is complete.

• Remove trash and other materials that can readily be cleaned up from in and around the facility.

• Remove non-contaminated spare parts, tools, and supplies.

• Remove and disposition non-radioactive valuable excess materials.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.02.05.03</td>
<td>Waste Encapsulation Storage Facility Stabilization</td>
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</table>
Scope

Records assembly consists of collection and maintenance of the pertinent transition and transfer records, such as the facility characterization report and other documents. In addition, management of the transition process is contained within this WBS element. However, this element does not contain the preparation of records or documents except where noted.

The following records or documents must be maintained:

• Transition team establishment, charter and appointments.
• Facility characterization report.
• Stabilization plan.
• Disposition path. This scope is contained within this WBS element.
• Stabilization actions, status, and final facility condition report.
• Facility shutdown plan, actions and final shutdown report.
• Transfer plan.
• Facility transfer memorandum and associated documents.

The ability to most effectively specify many of the stabilization end-points is dependent on whether the first part of the facility disposition path is (1) direct to decommissioning type activities, primarily dismantling and demolition, or (2) to deactivation conditions for an extended duration of minimal activity and monitoring. Functional understanding of the probable disposition path is key in the engineering planning process of end-point development and allocation leading to determination of the complete list of transition activities. Knowing the disposition path following the transition phase is especially important to avoid activities that later prove to be unnecessary or counterproductive. Generally, identification of the disposition path is the responsibility of the disposition program. Many factors must be considered when determining the disposition path. Foremost are conceptual lifecycle cost projections for deactivation versus decommissioning relative to budgets, the projected cost of ongoing surveillance and maintenance, and agreements among DOE, tribal governments, State regulators, and various stakeholders. Factors such as facility hazards and physical condition can also be important. In some cases, part of a facility may remain operational for the foreseeable future; this, as well as the presence of other nearby facilities must be considered for decisions concerning the disposition path.

In identifying the probable disposition path (i.e., deactivation or decommissioning), activities and associated cost, as well as available funding profiles for both options, should be evaluated as decisions factors, among others. The probable facility disposition path to be used as the basis for transition project planning can be identified using hazard information, activities, cost, and other constraints, combined with national priorities and strategies. If, for some reason, the disposition path cannot be determined, the default planning assumption will be deactivation for at least the major facilities.

The disposition path report is prepared consistent with these considerations and guides the final transition and transfer of WESF. Disposition also considers the WESF safety basis and coordinates shutdown of safety and operational systems (e.g., potable water, non-radiological ventilation) consistent with the safety basis.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.02.05.04</td>
<td>Waste Encapsulation Storage Facility Records Assembly</td>
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<tr>
<td>CWBS Number</td>
<td>RL-0013.02.05.05</td>
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<tr>
<td>CWBS Title</td>
<td>Waste Encapsulation Storage Facility Shutdown, Deactivation, and De-Energiz</td>
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</tbody>
</table>

**Scope**

Consistent with downgrades of the safety basis, the following is performed:

- Ventilation systems are shutdown consistent with the disposition plan, beginning with the radiological systems and then progressing to the office/habitation systems. Temporary ventilation may be required in specific areas afterward for personnel safety.
- Electrical systems are shutdown consistent with the disposition plan.
- Facility support systems such as potable water, pressurized air, sanitation, etc are shutdown consistent with the disposition plan.
- Fire protection systems (if any) may or may not be shutdown consistent with the disposition plan.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
Scope

A pre-transfer review is required to transfer a contaminated excess facility from an operating program to the disposition program (RL-0040). An acceptable method of meeting the pre-transfer review requirement is to validate that all early stabilization actions and stabilization end-points have been completed. The validation should be based on the agreements reached during the facility walk-down and its associated activities and documented in or attached to a memorandum of agreement (MOA) with RL-0040. The pre-transfer review should not be conducted until all stabilization actions have been completed.

The overall intent of the pre-transfer review is to verify and document that all stabilization actions have been completed as stated in the MOA. It should be understood that although the MOA contains all transfer requirements, it is generally defined at a functional level. Validating the completion of early stabilization actions and other stabilization actions requiring end-points during the pre-transfer review is intended to validate the completion of the functional requirements in the MOA.

The disposition program (RL-0040) must be assured that the facility has been characterized appropriately and that stabilization actions have been completed placing the facility in a stable and known condition. It is therefore important that the disposition program participate along with the operating program in validating the completion of all agreed to actions by the operating program. Any remaining hazards should also be identified prior to transfer of the facility. The facility walk-down and associated activities in conjunction with the pre-transfer review, should:

• establish a baseline at the time of transfer to provide the disposition program with an adequate understanding of the facility;
• include an assessment and graded characterization of the facility;
• ensure that sufficient information has been collected, assembled, and analyzed to provide an understanding of existing conditions and hazards;
• document the remaining hazards based on completion of early stabilization actions and stabilization end-points;
• permit efficient deactivation (or decommissioning) planning; and
• minimize the possibility of halting the progress of deactivation (or decommissioning) tasks because of significant unforeseen circumstances.

At the time of transfer, it is expected that the safety and health requirements have been determined and evaluated for appropriateness, that the required safety systems and controls have been identified, and that a determination has been made as to whether they are in place and performing as intended.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<tr>
<td>RL-0013.02.05.07</td>
<td>Waste Encapsulation Storage Facility Transfer</td>
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</table>

**Scope**

A documented validation (completed during the pre-transfer review) will be performed that all early stabilization actions and other stabilization actions requiring end-points have been completed and that provides confirmation that all agreed-to stabilization requirements contained in the memorandum of agreement (MOA) (WBS RL-0013.02.05.06) have been completed. A review and validation should also be conducted of the other elements identified in the MOA that were previously agreed to by the RL-0013 and RL-0040. These include, in part, identification of any radioactive or hazardous chemical materials remaining after stabilization actions have been completed; associated funding for out-year targets to support the required surveillance and maintenance activities after transfer; other resource requirements (if any); and future liabilities.

A facility walkdown is conducted to verify the state of shutdown and deactivation. This is documented in a report.

After all required elements contained in the MOA have been validated, WESF can be transferred to the disposition program (PBS RL-0040). In those cases when actions have not been completed by RL-0013 at the scheduled time of transfer, the MOA should be modified to document the unexpected events, change in the transfer date, or other circumstances pertinent to the transfer of WESF. Alternate agreements beneficial to safety and transition goals can be negotiated and entered into the modified MOA or the transfer of WESF may be deferred.

A transfer memo signed by representatives of RL-0013 and RL-0040 must be prepared documenting the date of transfer and any other information pertinent to the transfer of management responsibility. The report documenting the results of the facility walk-down (including all associated activities) and validation and other appropriate documentation (if any) related to WESF's transfer should be considered as attachments to the final documentation.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**CWBS Number**  
RL-0013.02.50  

**CWBS Title**  
Waste Encapsulation Storage Facility Min Safe  

<table>
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<tr>
<th><strong>Scope</strong></th>
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<tr>
<td>The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreements. Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:&lt;br&gt;.1 facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;&lt;br&gt;.2 facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;&lt;br&gt;.3 keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;&lt;br&gt;.4 maintain controls consistent with its safety basis and safety support documents; and,&lt;br&gt;.5 protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.&lt;br&gt;&lt;br&gt;Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiological protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.&lt;br&gt;&lt;br&gt;Min-safe activities consists of:&lt;br&gt;• Surveillance&lt;br&gt;• Maintenance&lt;br&gt;• Quality Assurance,&lt;br&gt;• Training,&lt;br&gt;• Engineering,&lt;br&gt;• Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,&lt;br&gt;• Environmental compliance,&lt;br&gt;• Other support.&lt;br&gt;• Facility Supervision,&lt;br&gt;• Work Control, and&lt;br&gt;• Radiation protection.</td>
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**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<td>RL-0013.02.50</td>
<td>Waste Encapsulation Storage Facility Min Safe</td>
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<tr>
<td>Scope</td>
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| Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits. Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated. M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status. Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents. Surveillance includes:
• Routine recording of instrument reading or performance required by surveillance plans.
• Routine testing/checking/verification of environmental instruments.
• Routine testing/checking/verification of safety instruments.
• Routine testing/verification of facility equipment (e.g., HEPA filters, fans, rollup doors).
• Functional testing or calibration of instrumentation.
• Radiological surveys required by permits or DSA.
• Environmental surveys required by permits or DSA.
• Safety inspections required by integrated safety management plans or other.
• Fire inspections.
• Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).
Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time. Scope exclusion:
All maintenance activities, including repair to M and T E and any other surveillance instruments.
Preventive maintenance (PM) items. |
| Assumptions |
| Requirements |
1. See higher level WBS level for additional requirements.
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<tr>
<td>RL-0013.02.50.01</td>
<td>Waste Encapsulation Storage Facility Surveillance</td>
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<td>CWBS Number</td>
<td>CWBS Title</td>
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<tr>
<td>RL-0013.02.50.02</td>
<td>Waste Encapsulation Storage Facility Maintenance</td>
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**Scope**

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components. Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Maintenance consists of the following:

- All Corrective maintenance (CM) work (repairs).
- All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
- All repairs or replacement of failed or failing equipment or obsolete equipment.
- All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
- Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
- Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Assumptions

**Requirements**

1. See higher level WBS level for additional requirements.
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<td>RL-0013.02.50.03</td>
<td>Waste Encapsulation Storage Facility Quality Assurance</td>
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</table>
### Scope

The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:

- Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
- Training is provided on general employee training and site access. The training content may be provided by others.
- Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
- Training is provided on Integrated Safety Management System/Environmental Management.
- Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
- Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
- Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
- Maintaining of all facility training records.
- Facility personnel "seat time" during the training.
- Training course fees.
- Facility specific training curriculum updates.

**Exclusion:**

This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
**Scope**

Scope consists of:
- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

**Exclusion:**
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
<th>RL-0013.02.50.06</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>Waste Encapsulation Storage Facility RCRA Compliance Waste Management</td>
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</table>

**Scope**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
Scope
Support to facility management for implementation of the environmental program. The scope consists of:
• Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
  • Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
  • Compliance with all environmental permits and regulations applicable to the facility;
  • Compliance with all agreed orders issued to the facility or other direction.
• Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
• Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
• Providing corrective actions for adverse trends specific to the facility.
• Maintaining all required environmental records and permits.
• Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
• Sampling and sample analysis associated with the air operating permit.
• Trend analysis of the air operating permit sample analysis results.
• Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
• Participation in site work site assessments as required.
• Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
• Environmental Control Officer (ECO) or equivalent review and input to procedures.
• ECO’s radioactive emission calculations.
• Developing data for compliance reports
• Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

Exclusion:
All scope associated with RCRA compliance waste management enhancements.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
CWBS Number
RL-0013.02.50.08

CWBS Title
Waste Encapsulation Storage Facility Other Support

Scope
Other facility support scope consists of the following:
• Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
• Facility criticality controls and implementation, and oversight, as required.
• Implementation of safeguards and security requirements for material accountability, if applicable.
• All other facility safety basis implementation, and oversight, as required.
• Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implemention of the combustible control program, routine code interpretation, code enforcement, fire system design/modification review, and facility technical support. All as required.
• Administration of facility specific procurements.
• Industrial hygiene and occupational safety.
• All facility specific waste management activities.
• Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
• Facility staff and visitor time spend participating in emergency drills.
• Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
• Facility cost records maintenance and record keeping, except when performed by a central group.
• Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
• Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
• Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
• Facility assessments, including management assessments of the facility.
• Facility corrective action management.
• All contract issues bearing on the facility, unless performed by a central group.
• General housekeeping services.
• Hoist and rigging, except when provided by a central pool.
• Vehicle maintenance and provisioning, including supplying vehicles of any description, except when provided by a central pool.
• General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
• Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
• Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
• Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
• Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

Exclusions:
The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
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<tr>
<td>RL-0013.02.50.08</td>
<td>Waste Encapsulation Storage Facility Other Support</td>
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</table>
## Scope
Facility supervision scope is:
- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

## Assumptions

## Requirements
1. See higher level WBS level for additional requirements.
### Scope

Facility work control scope is:
- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
**Scope**

Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.

Facility scope consists of:

- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

**Assumptions**

- 1. See higher level WBS level for additional requirements.
**Scope**

Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status. Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents.

Surveillance includes:

- Routine recording of instrument reading or performance required by surveillance plans.
- Routine testing/checking/verification of environmental instruments.
- Routine testing/checking/verification of safety instruments.
- Routine testing/verification of facility equipment (e.g., HEPA filters, fans, rollup doors).
- Functional testing or calibration of instrumentation.
- Radiological surveys required by permits or DSA.
- Environmental surveys required by permits or DSA.
- Safety inspections required by integrated safety management plans or other.
- Fire inspections.
- Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:

All maintenance activities, including repair to M and T E and any other surveillance instruments.

However, following transfer of the cesium and strontium capsules to dry storage, WESF will be downgraded from a hazard category two to probably a radiological facility. As a result, 10 CFR 830 requirements for the safety basis will no longer apply. The facility will then be transitioned to decontamination and decommissioning and transferred to PBS RL-0040. As a result, there will be a significant reduction in the min-safe activities required to be performed. However, the degree of the reduction cannot be estimated at this time.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.02.51</th>
<th>CWBS Title</th>
<th>Waste Encapsulation Storage Facility During Transition Min Safe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assumptions</strong></td>
<td></td>
<td>A plan will be prepared that will detail the transition of the facility's min-safe activities and what scope will continue to be performed. The reduction in scope will be primarily in surveillance, maintenance, quality assurance, and engineering.</td>
<td></td>
</tr>
<tr>
<td><strong>Requirements</strong></td>
<td></td>
<td>1. See higher level WBS level for additional requirements.</td>
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</tbody>
</table>
Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status.

Surveillance includes:
- Routine recording of instrument readings or performance required by surveillance plans.
- Routine testing/checking/verification of environmental instruments.
- Routine testing/checking/verification of safety instruments.
- Routine testing/verification of facility equipment (e.g., HEPA filters, fans, rollup doors).
- Functional testing or calibration of instrumentation.
- Radiological surveys required by permits or DSA.
- Environmental surveys required by permits or DSA.
- Safety inspections required by integrated safety management plans or other.
- Fire inspections.
- Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:
- All maintenance activities, including repair to M and T E and any other surveillance instruments.
- Preventative maintenance (PM) items.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.02.51.01</td>
<td>Waste Encapsulation Storage Facility During Transition - Surveillance</td>
</tr>
</tbody>
</table>
Scope
The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.
Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs.
Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.
Maintenance consists of the following:
• All Corrective maintenance (CM) work (repairs).
• All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
• All repairs or replacement of failed or failing equipment or obsolete equipment.
• All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
• Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
• Safety related inspections.
Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.
Assumptions
Requirements
1. See higher level WBS level for additional requirements.
### Scope

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.
- Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design.

Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
<table>
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<th>CWBS Number</th>
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<tbody>
<tr>
<td>RL-0013.02.51.03</td>
<td>Waste Encapsulation Storage Facility During Transition - Quality Assurance</td>
</tr>
</tbody>
</table>
### Scope

The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:
- Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
- Training is provided on facility orientation.
- Training is provided on general employee training and site access. The training content may be provided by others.
- Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
- Training is provided on Integrated Safety Management System/Environmental Management.
- Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
- Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
- Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
- Maintaining of all facility training records.
- Facility personnel "seat time" during the training.
- Training course fees.
- Facility specific training curriculum updates.

### Exclusion:

This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
### Scope

Scope consists of:
- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

**Exclusion:**
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
<table>
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<th>CWBS Number</th>
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<tr>
<td>RL-0013.02.51.06</td>
<td>Waste Encapsulation Storage Facility During Transition - RCRA Compliance</td>
</tr>
</tbody>
</table>

**Scope**
- All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
**Scope**

Support to facility management for implementation of the environmental program. The scope consists of:

- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
  - Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
  - Compliance with all environmental permits and regulations applicable to the facility;
  - Compliance with all agreed orders issued to the facility or other direction.
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and in-put to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**

- All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Assumptions

- Scopes
  - Other facility support scope consists of the following:
    - Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
    - Facility criticality controls and implementation, and oversight, as required.
    - Implementation of safeguards and security requirements for material accountability, if applicable.
    - All other facility safety basis implementation, and oversight, as required.
    - Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/ modification review, and facility technical support. All as required.
    - Administration of facility specific procurements.
    - Industrial hygiene and occupational safety.
    - All facility specific waste management activities.
    - Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
    - Facility staff and visitor time spend participating in emergency drills.
    - Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
    - Facility cost records maintenance and record keeping, except when performed by a central group.
    - Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
    - Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
    - Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
    - Facility assessments, including management assessments of the facility.
    - Facility corrective action management.
    - All contract issues bearing on the facility, unless performed by a central group.
    - General housekeeping services.
    - Hoist and rigging, except when provided by a central pool.
    - Vehicle maintenance and provisioning, including supplying vehicles of any description, except when provided by a central pool.
    - General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
    - Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
    - Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
    - Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
    - Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.
- Exclusions:
  - The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

### Requirements

- Other facility support scope consists of the following:
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<tr>
<th>CWBS Number</th>
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<tbody>
<tr>
<td>RL-0013.02.51.08</td>
<td>Waste Encapsulation Storage Facility During Transition - Other Support</td>
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<tr>
<td>RL-0013.02.51.09</td>
<td>Waste Encapsulation Storage Facility During Transition - Supervision</td>
</tr>
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</table>

**Scope**
Facility supervision scope is:
- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
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<tr>
<td>RL-0013.02.51.10</td>
<td>Waste Encapsulation Storage Facility During Transition - Work Control</td>
</tr>
</tbody>
</table>

**Scope**

- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
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<tr>
<td>RL-0013.02.51.11</td>
<td>Waste Encapsulation Storage Facility During Transition - Rad Protection</td>
</tr>
</tbody>
</table>

**Scope**

Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.

Facility scope consists of:

- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
Canister Storage Building (CSB)

Scope

CSB provides a facility for receiving, sampling, monitoring, welding, staging, and interim storage of:

- MCOs
- Fuel and Scrap MCOs
- Knockout Pot (KOP) MCOs
- Shippingport Fuel Canister (SSFC) MCOs
- Found fuel containers (FFCs)
- Transuranic multiple burial containers (TMBCs).
- Fuel stored in the Interim Storage Area (ISA).

CSB is comprised of a steel-frame building that encloses the operating area, the load-in/load-out area, the sampling/weld area, and three, equally sized, below-grade concrete vaults covered by a concrete operating area deck. Support functions and equipment are housed in a steel-frame support area on the north side of the operations building. Only the northernmost vault (Vault 1) is equipped with steel tubes for staging of mechanically sealed MCOs and storage of welded MCOs (normally two in each storage tube). A mechanically sealed MCO can be safely staged for at least 40 years. Fifteen multi-canister overpacks (MCOs) remain to have their canister covers welded. In addition, although the CSB was originally constructed to support receipt of glass logs from the Waste Treatment Plant, that plan has changed. Current WTP planning reflects construction of a new facility to store the glass logs.

The CSB site includes CSB, the 200 Area ISA, and the facilities (mobile offices, buildings, and structures) listed below. ISA is a hazard category 2 facility, as described in HNF-40627, 200 Area Interim Storage Area Documented Safety Analysis. Except for CSB and ISA, none of the facilities listed in Table 2-1 are hazard category 1, 2, or 3 facilities per DOE-STD-1027-92, Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23.

- Canister Storage Building (Hazard Category 2)
- Interim Storage Building (Hazard Category 2)
- 2902HV82 (Fire Water Pump house)
- 2902HV83 (Water Utility Shed)
- TK-500-01 (Water Storage Tank)
- 2701HV (Security Building)
- 272HV (Office Building)
- MO155 (Mobile Office Building)
- MO254 (Mobile Office Building)
- MO434 (Mobile Office Building)
- MO723 (Mobile Office Building)

The CSB fence line forms the outer boundary of the CSB Facility.

The 200 Area ISA, a separate facility located inside the CSB yard, is a protected area for the storage of SNF and slightly irradiated fuel. The outer fence of the 200 Area ISA is the boundary between ISA and CSB facilities. The west gate of the CSB fence line is a security gate to control access near the 200 Area ISA. Some equipment to support the 200 Area ISA security systems is located inside the CSB yard but outside the 200 Area ISA boundary. This equipment is managed as part of the CSB facility and includes things such as Building 2701-HV (a hardened security station with a 500 gal propane generator), underground electrical conduit, stadium lighting, and vehicle barriers (e.g., ecology blocks).

The mission of the CSB is to safely store SNF (primarily N Reactor SNF from K Basins) in multi-canister overpacks (MCOs) while awaiting final disposition. This includes routine sampling and monitoring of the MCOs and maintenance of the facility in a ready-to-serve condition, including performance of minimum safe activities.

In addition to operating the CSB, the ISA provides the associated structures, operating systems and equipment, and monitoring systems within the departmental and environmental safety and health program. In addition, the ISA provides the operational personnel necessary to maintain the facility in a safe condition.

Corrective maintenance and engineering activities to maintain the safe operation of the facility through the contract period.

The 200 Area ISA is located within the Hanford Site 200 East Area. Its purpose is to store SNF from remediation activities throughout the Hanford Site until final disposition.
outside storage of the SNF, while protecting fuel integrity through the use of storage systems resistant to natural phenomena hazards. While the majority of the fuel to be stored within the ISA consists of Fast Flux Test Facility (FFTF) SNF, the ISA also stores other SNF from the Hanford Site, including Neutron Radiography Facility (NRF) TRIGA fuel; Oregon State University (OSU) TRIGA fuel; Material Characterization Center commercial light-water reactor (LWR) fuel; single-pass reactor (SPR/N Reactor) fuel in found fuel containers (FFC); plutonium and uranium oxide, nitride, and carbide fuels in Experimental Breeder Reactor II (EBR II) casks; plutonium and uranium oxide fuels in transuranic multiple burial containers (TMBC); and Los Alamos Molten Plutonium Reactor Experiment (LAMPRE) fuel in EBR II casks.

The different dry storage systems used at the 200 Area ISA are as follows:
- Interim storage cask (ISC) used for the FFTF SNF
- NRF TRIGA casks and DOT 6M containers within a Rad Vault storage vault used for NRF TRIGA SNF
- OSU TRIGA overpack containers within Rad Vaults used for OSU TRIGA SNF
- NAC 1 casks within International Organization for Standardization (ISO) containers used for commercial LWR SNF from the 300 Area
- FFCs containing SPR/N Reactor-type fuels within one or two Rad Vault(s)
- EBR II casks containing oxide and experimental fuels, including EBR II, FFTF, and commercial LWR fuel specimens, within five concrete vaults
- TMBCs containing ceramic oxide fuel specimens from General Electric (GE) Vallecitos Nuclear Center
- EBR II casks containing metal LAMPRE fuel within a concrete Outside Storage Unit.

An aboveground dry storage location (the ISA) is necessary for the spent fuel because other storage facilities are being shut down and deactivated. The spent fuel is being transferred to interim storage because there is no permanent repository storage currently available. Interim storage at the 200 Area ISA is intended until the materials are shipped to a disposal facility. Loaded containers are to be stored at the 200 Area ISA for a period of up to 40 years.

The ISA is nominally 600 ft by 400 ft surrounded by two 7 ft tall chain-link fences with an isolation area between them. Locked gates in the fence control access of vehicles and personnel. Light poles provide illumination. Within the fenced area are four concrete pads, three for placement of ISCs and one for the NAC 1 casks within ISO containers. Several Rad Vaults holding TRIGA fuel and FFCs, and the EBR II vaults are placed on graded, compacted gravel. The TMBCs are placed on the north end of the east ISC concrete pad, or may be placed on compacted gravel within the 200 Area ISA. The concrete Outside Storage Unit is located in the northwest corner of the ISA. All of the dry storage systems are located within the inner fenced area. There are no radiological materials stored in the isolation zone between the two security fences.

The 200 Area ISA facility components are classified as general service. All of the storage systems and components are also designated general service.

Assumptions
1. Refurbishment of the roll up doors will be required in the contract period of performance.
2. The Canister Storage Building (CSB) will not receive HLW glass logs from the Waste Treatment Plant during the contract period of performance.
3. In the event of severe weather impacts or settling events in the burial grounds, work may require placement of cover material over burial ground selected Contamination Areas with the purpose to progress toward conversion to Underground Radiological Material Areas. This includes 20 acres of 218-W-3AE (Large CA) (200 West) and 218-W-3A (North of RBA).

Requirements
1. See lower level WBS level for additional requirements.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. 10 CFR 63; Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada
4. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
5. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
6. 10 CFR 824; Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations
7. 10 CFR 835; Occupational Radiation Protection
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.03</td>
<td>Canister Storage Building (CSB)</td>
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</tbody>
</table>

8. 10 CFR 850; Chronic Beryllium Disease Prevention Program  
9. 10 CFR 851; Worker Safety and Health Program  
10. 10 CFR 1021; National Environmental Policy Act Implementing Procedures  
11. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses  
12. 29 CFR 1910; Occupational Safety And Health Standards  
13. 29 CFR 1926; Safety And Health Regulations For Construction  
14. 42 USC 7401; Clean Air Act  
15. 44 USC 3105; Safeguards  
16. WAC 173-400; General Regulations For Air Pollution Sources  
17. WAC 173-401; Operating Permit Regulation  
18. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide  
19. WAC 246-247; Radiation Protection -- Air Emissions  
20. 00-05-006; Air Operating Permit (AOP)  
21. Hanford Site Air Operating Permit  
22. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document  
23. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan  
24. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document  
25. RRD 005, Rev 3; Worker Safety  
26. RRD 007; Chronic Beryllium Disease Prevention Program  
27. RRD 008, Rev 3; Quality Assurance Program Requirements  
28. DOE/RW-0333P; DOE Office of Civilian Radioactive Waste Management, Quality Assurance Requirements and Description, Revision 18  
29. DOE/RW-0351; Waste Acceptance System Requirements Document, Revision 5, ICN 1  
30. DOE/RW-0511; Integrated Interface Control Document, Revision 4, ICN 1  
31. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
CPCC CWBS DICTIONARY SHEET

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<th>CWBS Number</th>
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<tr>
<td>RL-0013.03.50</td>
<td>Canister Storage Building Min Safe</td>
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**Scope**

The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

.1 facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;

.2 facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;

.3 keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;

.4 maintain controls consistent with its safety basis and safety support documents; and,

.5 protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consists of:

⦁ Surveillance
⦁ Maintenance
⦁ Quality Assurance,
⦁ Training,
⦁ Engineering,
⦁ Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
⦁ Environmental compliance,
⦁ Other support,
⦁ Facility Supervision,
⦁ Work Control, and
⦁ Radiation protection.

Excluded from this scope is:

Preparation of safety analysis documents (covered in a separate WBS element in general administration).

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
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<tr>
<td>RL-0013.03.50</td>
<td>Canister Storage Building Min Safe</td>
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</tbody>
</table>
CWBS Number  
RL-0013.03.50.01

CWBS Title  
Canister Storage Building Surveillance

Scope
Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status.

Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents.

Surveillance includes:
• Routine recording of instrument reading or performance required by surveillance plans.
• Routine testing/checking/verification of environmental instruments.
• Routine testing/checking/verification of safety instruments.
• Functional testing or calibration of instrumentation.
• Radiological surveys required by permits or DSA.
• Environmental surveys required by permits or DSA.
• Safety inspections required by integrated safety management plans or other.
• Fire inspections.
• Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:
All maintenance activities, including repair to M and TE and any other surveillance instruments.
Preventative maintenance (PM) items.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
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<tr>
<td>RL-0013.03.50.01</td>
<td>Canister Storage Building Surveillance</td>
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</tbody>
</table>
**Scope**

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs.

Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Maintenance consists of the following:

- All Corrective maintenance (CM) work (repairs).
- All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
- All repairs or replacement of failed or failing equipment or obsolete equipment.
- All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
- Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
- Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

**Assumptions**

**Requirements**
Scope

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.
- Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design.
- Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

Assumptions

Requirements
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.03.50.03</td>
<td>Canister Storage Building Quality Assurance</td>
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</tbody>
</table>
Scope

The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:
- Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
- Training is provided on facility orientation.
- Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
- Training is provided on Integrated Safety Management System/Environmental Management.
- Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
- Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
- Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
- Maintaining of all facility training records.
- Facility personnel "seat time" during the training.
- Training course fees.
- Facility specific training curriculum updates.

Exclusion:
This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

Assumptions

Requirements
### Scope

Scope consists of:

- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

### Assumptions

- Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.
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<th>CWBS Number</th>
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<tr>
<td>RL-0013.03.50.06</td>
<td>Canister Storage Building RCRA Compliance Waste Management Enhancements</td>
</tr>
</tbody>
</table>

**Scope**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**
**Scope**

Support to facility management for implementation of the environmental program. The scope consists of:

- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
- Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
- Compliance with all environmental permits and regulations applicable to the facility;
- Compliance with all agreed orders issued to the facility or other direction;
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and input to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**
CWBS Number
RL-0013.03.50.08

CWBS Title
Canister Storage Building Other Support

Scope
Other facility support scope consists of the following:
• Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
• Facility criticality controls and implementation, and oversight, as required.
• Implementation of safeguards and security requirements for material accountability, if applicable.
• All other facility safety basis implementation, and oversight, as required.
• Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/modification review, and facility technical support. All as required.
• Administration of facility specific procurements.
• Industrial hygiene and occupational safety.
• All facility specific waste management activities.
• Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
• Facility staff and visitor time spend participating in emergency drills.
• Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
• Facility cost records maintenance and record keeping, except when performed by a central group.
• Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
• Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
• Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
• Facility assessments, including management assessments of the facility.
• Facility corrective action management.
• All contract issues bearing on the facility, unless performed by a central group.
• General housekeeping services.
• Hoist and rigging, except when provided by a central pool.
• Vehicle maintenance and provisioning, including supplying vehicles of any description, except when provided by a central pool.
• General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
• Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
• Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
• Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
• Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

Exclusions:
The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

Assumptions

Requirements
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<th>CWBS Number</th>
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<tr>
<td>RL-0013.03.50.08</td>
<td>Canister Storage Building Other Support</td>
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<tr>
<td>CWBS Number</td>
<td>RL-0013.03.50.09</td>
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<tr>
<td>CWBS Title</td>
<td>Canister Storage Building Supervision</td>
</tr>
</tbody>
</table>

**Scope**

Facility supervision scope is:

- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

**Assumptions**

**Requirements**
## Scope

Facility work control scope is:

- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

## Assumptions

## Requirements
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<tr>
<th>Scope</th>
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<tbody>
<tr>
<td>Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.</td>
</tr>
<tr>
<td>Facility scope consists of:</td>
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<tr>
<td>• Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.</td>
</tr>
<tr>
<td>• Maintenance of facility radiation exposure records, unless performed by a central group.</td>
</tr>
<tr>
<td>• Conduct of routine radiation surveys, including air monitoring.</td>
</tr>
<tr>
<td>• Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.</td>
</tr>
<tr>
<td>• Documenting, storing, maintaining radiation surveys and review and approval of survey reports.</td>
</tr>
<tr>
<td>• Support to radioactive material handling, storing, and shipping.</td>
</tr>
<tr>
<td>• Development of facility radiation training and qualification materials.</td>
</tr>
<tr>
<td>• Monitoring of external and internal radiation exposure to facility staff.</td>
</tr>
<tr>
<td>• Establishment of respiratory protection for facility staff as required.</td>
</tr>
<tr>
<td>• Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.</td>
</tr>
<tr>
<td>• Establishment facility of radiation controls.</td>
</tr>
<tr>
<td>• Compliance with radioactive regulations at the facility.</td>
</tr>
<tr>
<td>• Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.</td>
</tr>
<tr>
<td>• Management of radiation protection activities.</td>
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<th>Assumptions</th>
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<th>Requirements</th>
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## Scope

The scope is:

- Move the MCO to be sampled to the selected sample pit (there are two sample pits).
- Prepare the Sample/Weld Pit #2 or Pit #7 Preparation.
- Prepare the CART-001 and BARR-002 for MCO Sampling.
- Connect CART-001 Connection and Purge.
- Prepare and leak-test CART-002.
- Sample the MCO
- Evaluate the sample results.
- Disconnect MCO from Sampling Equipment
- Replace the Cover Plate and perform leak test.
- Restore the pit to standby Return the MCO to its storage tube.

## Assumptions

## Requirements

1. See higher level WBS level for additional requirements.
CWBS Title
Mixed Low Level Waste Trenches (31 and 34)

Scope
This scope consists of disposal operations and maintenance in a ready-to-serve condition for the Mixed Low Level Waste (MLLW) Trenches. Specifically, scope is:

- Maintenance of the trenches in ready-to-serve condition so as to be able to receive and dispose of mixed low-level waste.
- Receipt of MLLW packages into the Mixed Waste Disposal Trenches for disposal once the package is determined to be meet the waste acceptance criteria.
- Pumping and disposal of leachate from the leachate collection system. Disposal consists only of transfer of the leachate to a tanker and transport of the tanker to a liquid disposal facility and return of the tanker. Disposal at the liquid disposal facility is not included.
- MLLW trench upgrades (if any).
- Maintenance of min-safe conditions for the MLLW trenches.

Background: MLLW is defined as waste that is contaminated with both radioactive and hazardous constituents, excluding Transuranic (TRU) and TRU Mixed (TRUM). For the purpose of this project, MLLW will include Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and/or the Toxic Substances Control Act (TSCA) Low Level Waste (LLW).

The MLLW trenches are maintained in a ready-to-serve status.

Base Operations (Ready to Serve) involves receipt and disposal of MLLW waste from onsite and offsite treatment/generators consistent with the Hanford Site Solid Waste Acceptance Criteria. Base operations also includes the tasks associated with receiving and efficiently disposing of waste within the MLLW trenches.

Min-Safe maintains the MLLW trenches in a safe, compliant, and cost-effective manner. Operate in accordance with DOE requirements, authorization basis documents, State and Federal regulation, the TPA, Washington state Department of Ecology permit conditions and acceptance criteria for MLLW waste. The scope includes those programs that through implementation result in safe and compliant facility operations. This WBS encompasses all activities needed in order to maintain the MLLW trenches in a minimum safe state described by the safety basis documents and in compliance with environmental regulations. Min-safe activities includes surveillance, maintenance, quality assurance, training, engineering, administration (including WESF management), Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements, environmental compliance, and other support.

Maintenance provides surveillance and maintenance of structures, systems, components, and processes to ensure operation within the approved safety and compliance requirements envelope, including preventive maintenance and calibrations, repair of failed and malfunctioning equipment, walk-down of safety systems, equipment and facility grounds (operational surveillance), and routine radiological surveys.

The MLLW may include receipt of waste from off-site, including from the U.S. Navy.

Scope also includes leachate pumping from collection tanks. This is generally rain water seepage through the trenches to the collection system. Leachate is pumped to a collection tank which in turn is pumped routinely to a tanker truck which then transports the leachate to effluent treatment. The number of transfers varies with the weather, but is approximately 50 tankers per year.

Excluded from this scope is:
- Preparation of safety analysis documents (covered in a separate WBS element in general administration).
- Washington state Department of Ecology permitting activities.

Assumptions
1. No treatment of MLLW currently contained in Trenches 31 or 34 will be needed.
2. No temporary cap will be needed on the MLLW Trenches 31 or 34 prior to 2030.

Requirements
1. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
2. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
3. 10 CFR 835; Occupational Radiation Protection
4. 10 CFR 850; Chronic Beryllium Disease Prevention Program
5. 10 CFR 851; Worker Safety and Health Program
6. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
7. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
8. 29 CFR 1910; Occupational Safety And Health Standards
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<tr>
<th>CWBS Number</th>
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<tr>
<td>RL-0013.04</td>
<td>Mixed Low Level Waste Trenches (31 and 34)</td>
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9. 29 CFR 1926; Safety And Health Regulations For Construction  
10. 40 CFR 61; National Emission Standards for Hazardous Air Pollutants  
11. 40 CFR 261; Identification and Listing of Hazardous Waste  
12. 40 CFR 262; Standards Applicable To Generators Of Hazardous Waste  
13. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities  
14. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities  
15. 40 CFR 268; Land Disposal Restrictions  
16. 40 CFR 302; Designation, Reportable Quantities, and Notification  
17. 40 CFR 355; Emergency Planning And Notification  
18. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know  
19. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know  
20. 40 CFR 763; Asbestos  
21. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs  
22. 49 CFR 130; Oil Spill Prevention and Response Plans  
23. 49 CFR 107; Hazardous Materials Program Procedures  
24. 49 CFR 171; General Information, Regulations, and Definitions  
26. 49 CFR 173; Shippers -- General Requirements for Shipments and Packagings  
27. 49 CFR 178; Specifications For Packagings  
28. 49 CFR 179; Specifications For Tank Cars  
29. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties  
30. 49 CFR 385; Safety Fitness Procedures  
31. 49 CFR 387; Minimum Levels Of Financial Responsibility For Motor Carriers  
32. 49 CFR 390; Federal Motor Carrier Safety Regulations: General  
33. 49 CFR 391; Qualifications of Drivers  
34. 49 CFR 392; Driving of Commercial Motor Vehicles  
35. 49 CFR 393; Parts and Accessories Necessary for Safe Operations  
36. 49 CFR 395; Hours Of Service Of Drivers  
37. 49 CFR 396; Inspection, Repair and Maintenance  
38. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules  
39. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976  
40. WAC 46-48; Transportation Of Hazardous Materials  
41. WAC 173-303; Dangerous Waste Regulations  
42. WAC 173-304; Minimum Function Standards for Solid Waste Handling  
43. WAC 173-340; Model Toxics Control Act -- Cleanup  
44. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document  
45. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document  
46. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan  
47. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document  
48. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment  
49. RRD 005, Rev 3; Worker Safety  
50. RRD 007; Chronic Beryllium Disease Prevention Program
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51. RRD 008, Rev 3: Quality Assurance Program Requirements
52. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
Mixed Waste Burial Grounds
### Scope
The scope of this work is to perform activities needed to keep the mixed low level waste (MLLW) trenches ready to receive mixed low-level or low-level waste for disposal, not related to maintaining minimum-safe conditions.
Ready-to-serve covers those tasks to maintain operations-related equipment needed to receive and dispose of waste within the MLLW trenches.
As waste is received, it is positioned into the selected areas of the trench and covered with dirt. MLLW trenches have capacity for approximately 4 levels. Gravel is then added as needed between the levels of waste. The trenches are currently at level 2.
Exclusion:
- Ready-to-serve does not contain work scope for maintaining of min-safe conditions.
- Ready-to-serve does not contain work scope for leachate management.
- Ready-to-serve does not contain work scope for treatment of mixed low-level or low-level waste.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
### Scope
This scope covers planned upgrades to the mixed low level waste (MLLW) trenches. There are no planned upgrades at this time.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
Scope

The current MLLW disposal trenches (218 W 5, Trenches 31 and 34) are compliant with RCRA requirements and other applicable environmental regulations. The principal design features of the current mixed waste disposal trenches include provisions for liquid collection systems using trench liners. Water infiltration into or from surrounding soils is anticipated to be very low due to the design of the liquid collection system.

The MLLW disposal trenches have a liner system that consists of admix, liner materials, and the leachate collection system. This liner system prevents hazardous constituents from migrating through the liner during the landfill’s 20-year operational life and 30 years post closure. The leachate collection system is capable of collecting and removing leachate such that a nominal hydraulic head on the liner is not exceeded. A low capacity pump handles average leachate flow. When adverse precipitation conditions require a higher capacity, such as for the assumed worst case precipitation event, a high capacity pump is available. The pumps and associated piping are compatible with the leachate. Either pump failure or a high collection tank level activates a rotating light beacon at Trenches 31 and 34.

The leachate storage tank discharge piping is designed to minimize or prevent overflow and leakage while evacuating the tank. Secondary containment is provided for the leachate tank. Leachate level sensors are used for monitoring both the primary and secondary collection systems. The sensor system consists of a transducer installed next to the pumps that transmits a signal, proportional to the water level, to a current sensitive relay in the control panel and can be used to switch the pumps on and off. Tanks provided for temporary leachate storage have a discharge nozzle on the bottom of the tank at one end and an influent fitting on the top. The tank has two openings to allow access for inspection and painting. The tank and piping are protected from freezing by insulation and heat tape.

Leachate is collected from the mixed waste lined trenches and is not expected to contain more than trace amounts of radioactive materials. The precipitation falling into a lined trench migrates through the layers of fill, past the containers, and to the liners. The slope of the bottom of the trench directs the precipitation to the leachate sump. It is pumped to a holding tank from the leachate sump. Precipitation falling on the surrounding area is directed away from the landfill to the storm drainage system. The leachate is collected in a tank placed in a secondary containment compliant with Federal regulations. The contents are periodically transported to permitted or interim status liquid receiving facility as operationally required. The transportation of collected leachate to a treatment, storage or disposal unit (TSDU) is considered to be a part of the bulk liquid waste transfer operations. This activity may be performed in any mode as authorized in the Technical Safety Requirements, Table 1, “SWOC Activities by Mode.” The liquid waste is characterized to the extent necessary to meet the receiving TSDU waste acceptance criteria.

Scope consists of collection of drainage (leachate) from within the mixed low-level waste trenches, pumping of that leachate to a collection tank, and then periodic pumping of that tank to a liquid trailer for transport to a liquid processing facility and return of the tanker to the mixed waste trench area. Leachate is generally rain or snow-melt water seepage through the trenches to the collection system. Leachate is pumped to a collection tank which in turn is pumped routinely to a tanker truck which then transports the leachate to effluent treatment.

Scope also includes repair or replacement of the pumping system, holding tank, the liner, alarm equipment, and maintenance of the tanker. A safety communication and indicator system is provided for the LLMW leachate collection system. A rotating light beacon on the roof of the control building is activated by either a pump failure or high collection tank level.

The number of transfers varies with the weather, but is approximately 50 tankers per year.

Exclusion: Treatment of leachate at the liquid receiving facility.

Assumptions

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>Scope</th>
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<tbody>
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The MLLW disposal trenches have a liner system that consists of admix, liner materials, and the leachate collection system. This liner system prevents hazardous constituents from migrating through the liner during the landfill’s 20-year operational life and 30 years post closure. The leachate collection system is capable of collecting and removing leachate such that a nominal hydraulic head on the liner is not exceeded. A low capacity pump handles average leachate flow. When adverse precipitation conditions require a higher capacity, such as for the assumed worst case precipitation event, a high capacity pump is available. The pumps and associated piping are compatible with the leachate. Either pump failure or a high collection tank level activates a rotating light beacon at Trenches 31 and 34. The leachate storage tank discharge piping is designed to minimize or prevent overflow and leakage while evacuating the tank. Secondary containment is provided for the leachate tank. Leachate level sensors are used for monitoring both the primary and secondary collection systems. The sensor system consists of a transducer installed next to the pumps that transmits a signal, proportional to the water level, to a current sensitive relay in the control panel and can be used to switch the pumps on and off. Tanks provided for temporary leachate storage have a discharge nozzle on the bottom of the tank at one end and an influent fitting on the top. The tank has two openings to allow access for inspection and painting. The tank and piping are protected from freezing by insulation and heat tape. |

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Scope consists of collection of drainage (leachate) from within the mixed low-level waste trenches, pumping of that leachate to a collection tank. Leachate is generally rain or snow-melt water seepage through the trenches to the collection system. Leachate is pumped to a collection tank. |

Scope also includes repair or replacement of the pumping system, holding tank, the liner, alarm equipment, heat tracing, other equipment required to pump leachate. |

Exclusion: Pumping the leachate from the collection tank to tank trailer. |

Treatment of leachate at the liquid receiving facility. |

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<td>RL-0013.04.06.01</td>
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Leachate is collected from the mixed waste lined trenches and is not expected to contain more than trace amounts of radioactive materials. The precipitation falling into a lined trench migrates through the layers of fill, past the containers, and to the liners. The slope of the bottom of the trench directs the precipitation to the leachate sump. It is pumped to a holding tank from the leachate sump. Precipitation falling on the surrounding area is directed away from the landfill to the storm drainage system. The leachate is collected in a tank placed in a secondary containment compliant with Federal regulations. The contents are periodically transported to permitted or interim status liquid receiving facility as operationally required. The transportation of collected leachate to a treatment, storage or disposal unit (TSDU) is considered to be a part of the bulk liquid waste transfer operations. This activity may be performed in any mode as authorized in the Technical Safety Requirements, Table 1, “SWOC Activities by Mode.” The liquid waste is characterized to the extent necessary to meet the receiving TSDU waste acceptance criteria.

A safety communication and indicator system is provided for the LLMW leachate collection system. A rotating light beacon on the roof of the control building is activated by either a pump failure or high collection tank level.

Scope consists of leachate from a collection tank to a liquid tank trailer for transport to a liquid processing facility and return of the tanker to the mixed waste trench area. Leachate is generally rain or snow-melt water seepage through the trenches to the collection system.

Scope also includes repair or replacement and maintenance of the tanker.

The number of transfers varies with the weather, but is approximately 50 tankers per year.

Exclusion: Treatment of leachate at the liquid receiving facility.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
Assumptions

Requirements

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<tr>
<td>RL-0013.04.50</td>
<td>Mixed Low Level Waste Trenches Min Safe</td>
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</table>
Scope

Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status.

Surveillance includes:
• Routine recording of instrument reading or performance required by surveillance plans.
• Routine testing/checking/verification of environmental instruments.
• Routine testing/checking/verification of safety instruments.
• Routine testing/verification of facility equipment (e.g., HEPA filters, fans, rollup doors).
• Functional testing or calibration of instrumentation.
• Radiological surveys required by permits or DSA.
• Environmental surveys required by permits or DSA.
• Safety inspections required by integrated safety management plans or other.
• Fire inspections.
• Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:
All maintenance activities, including repair to M and TE and any other surveillance instruments.
Preventative maintenance (PM) items.

Assumptions

Requirements

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<table>
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<th>CWBS Title</th>
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<tr>
<td>RL-0013.04.50.01</td>
<td>Mixed Low Level Waste Trenches Surveillance</td>
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</tbody>
</table>
Scope

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs.

Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.

Maintenance consists of the following:

• All Corrective maintenance (CM) work (repairs).
• All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
• All repairs or replacement of failed or failing equipment or obsolete equipment.
• All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
• Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
• Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
### Scope

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.
- Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design.
- Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

### Assumptions

### Requirements

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<table>
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<th>CWBS Number</th>
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<td>RL-0013.04.50.03</td>
<td>Mixed Low Level Waste Quality Assurance</td>
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Scope

The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:

• Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
• Training is provided on facility orientation.
• Training is provided on general employee training and site access. The training content may be provided by others.
• Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
• Training is provided on Integrated Safety Management System/Environmental Management.
• Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
• Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
• Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
• Maintaining of all facility training records.
• Facility personnel "seat time" during the training.
• Training course fees.
• Facility specific training curriculum updates.

Exclusion:
This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
## Scope
Scope consists of:
- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

### Exclusion:
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

## Assumptions

## Requirements
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<td>RL-0013.04.50.06</td>
<td>Mixed Low Level Waste RCRA Compliance Waste Management Enhancements</td>
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</table>

**Scope**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**Scope**

Support to facility management for implementation of the environmental program. The scope consists of:

1. Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
   - Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
   - Compliance with all environmental permits and regulations applicable to the facility;
   - Compliance with all agreed orders issued to the facility or other direction.
2. Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
3. Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
4. Providing corrective actions for adverse trends specific to the facility.
5. Maintaining all required environmental records and permits.
6. Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
7. Sampling and sample analysis associated with the air operating permit.
8. Trend analysis of the air operating permit sample analysis results.
9. Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
10. Participation in site work site assessments as required.
11. Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
12. Environmental Control Officer (ECO) or equivalent review and in-put to procedures.
13. ECO's radioactive emission calculations.
14. Developing data for compliance reports.
15. Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**Scope**

Other facility support scope consists of the following:

- Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
- Facility criticality controls and implementation, and oversight, as required.
- Implementation of safeguards and security requirements for material accountability, if applicable.
- All other facility safety basis implementation, and oversight, as required.
- Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/ modification review, and facility technical support. All as required.
- Administration of facility specific procurements.
- Industrial hygiene and occupational safety.
- All facility specific waste management activities.
- Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
- Facility staff and visitor time spend participating in emergency drills.
- Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
- Facility cost records maintenance and record keeping, except when performed by a central group.
- Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
- Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
- Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
- Facility assessments, including management assessments of the facility.
- Facility corrective action management.
- All contract issues bearing on the facility, unless performed by a central group.
- General housekeeping services.
- Hoist and rigging, except when provided by a central pool.
- Vehicle maintenance and provisioning, including supplying vehicles of any description, except when provided by a central pool.
- General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
- Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
- Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
- Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
- Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

**Exclusions:**
The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.04.50.08</td>
<td>Mixed Low Level Waste Other Support</td>
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<tr>
<td><strong>CWBS Number</strong></td>
<td><strong>CWBS Title</strong></td>
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<tr>
<td>RL-0013.04.50.09</td>
<td>Mixed Low Level Waste Supervision</td>
</tr>
</tbody>
</table>

**Scope**

Facility supervision scope is:
- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.04.50.10</td>
<td>Mixed Low Level Waste Work Control</td>
</tr>
</tbody>
</table>

**Scope**

Facility work control scope is:

- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.04.50.11</th>
<th>CWBS Title</th>
<th>Mixed Low Level Waste Radiation Protection</th>
</tr>
</thead>
</table>

### Scope

Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.

Facility scope consists of:
- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
Scope

Scope consists of maintaining a ready-to-serve condition and maintaining min-safe.

Base Operations (Ready to Serve):
• Receive and store low-level waste (LLW), mixed low-level waste (MLLW), and transuranic (TRU) waste from onsite and offsite generators consistent with the Hanford Site Solid Waste Acceptance Criteria.
• Repackage, treat, vent, sample, verify, assay, nondestructive examination, and perform other activities as required to process LLW and MLLW in support of final disposal onsite.
• Repackage, treat, vent, sample, verify, assay, nondestructive examination and perform other activities as required to process TRU waste in support of final disposal at WIPP.

Min-Safe Operations:
Maintain/Operate the WRAP facility in a safe, compliant, and cost-effective manner. Operate the complex in accordance with DOE requirements, authorization basis documents, State and Federal regulation, the TPA, permit conditions and acceptance criteria for LLW, MLLW, and TRU waste. The scope includes those programs that through implementation result in safe and compliant facility operations.
There are no planned upgrades for WRAP.

Assumptions

1. The Waste Receiving and Processing Facility (WRAP) will be used for CH TRU loading to ship to WIPP.

Requirements

1. See lower level WBS level for additional requirements.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. 10 CFR 71; Packaging And Transportation Of Radioactive Material
4. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
5. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
6. 10 CFR 824; Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations
7. 10 CFR 835; Occupational Radiation Protection
8. 10 CFR 850; Chronic Beryllium Disease Prevention Program
9. 10 CFR 851; Worker Safety and Health Program
10. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
11. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
12. 29 CFR 1910; Occupational Safety And Health Standards
13. 40 CFR 60.150; Standards Of Performance For New Stationary Sources
15. 40 CFR 261; Identification and Listing of Hazardous Waste
16. 40 CFR 262; Standards Applicable To Generators Of Hazardous Waste
17. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
18. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
19. 40 CFR 302; Designation, Reportable Quantities, and Notification
20. 40 CFR 355; Emergency Planning And Notification
21. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know
22. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know
23. 40 CFR 761; Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions
24. 40 CFR 763; Asbestos
25. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs
<table>
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<th>CWBS Title</th>
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<tr>
<td>RL-0013.07</td>
<td>Waste Receiving and Processing Facility (WRAP)</td>
</tr>
</tbody>
</table>

26. 49 CFR 130; Oil Spill Prevention and Response Plans  
27. 49 CFR 107; Hazardous Materials Program Procedures  
28. 49 CFR 171; General Information, Regulations, and Definitions  
30. 49 CFR 173; Shippers -- General Requirements for Shipments and Packaging  
31. 49 CFR 177; Carriage by Public Highway  
32. 49 CFR 178; Specifications For Packaging  
33. 49 CFR 179; Specifications For Tank Cars  
34. 49 CFR 180; Continuing Qualification And Maintenance Of Packaging  
35. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties  
36. 49 CFR 385; Safety Fitness Procedures  
37. 49 CFR 390; Federal Motor Carrier Safety Regulations; General  
38. 49 CFR 391; Qualifications of Drivers  
39. 49 CFR 392; Driving of Commercial Motor Vehicles  
40. 49 CFR 393; Parts and Accessories Necessary for Safe Operations  
41. 49 CFR 395; Hours Of Service Of Drivers  
42. 49 CFR 396; Inspection, Repair and Maintenance  
43. 42 USC 2011-2259; Atomic Energy Act of 1954, as amended  
44. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976  
45. 42 USC 7401; Clean Air Act  
46. 44 USC 3105; Safeguards  
47. WAC 46-48; Transportation Of Hazardous Materials  
48. WAC 173-303; Dangerous Waste Regulations  
49. WAC 173-304; Minimum Function Standards for Solid Waste Handling  
50. WAC 173-340; Model Toxics Control Act -- Cleanup  
51. WAC 173-400; General Regulations For Air Pollution Sources  
52. WAC 173-401; Operating Permit Regulation  
53. WAC 173-460; Controls for New Sources of Toxic Air Pollutants  
54. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide  
55. WAC 246-247; Radiation Protection -- Air Emissions  
56. 00-05-006; Air Operating Permit (AOP)  
57. Hanford Site Air Operating Permit  
58. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document  
59. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document  
60. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)  
61. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan  
62. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document  
63. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment  
64. RRD 005, Rev 3; Worker Safety  
65. RRD 007; Chronic Beryllium Disease Prevention Program  
66. RRD 008, Rev 3; Quality Assurance Program Requirements  
67. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
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<th>CWBS Title</th>
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### Waste Receiving and Processing (WRAP)
<table>
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<tr>
<th>CWBS Number</th>
<th>RL-0013.07.01</th>
<th>CWBS Title</th>
<th>Waste Recieving and Processing Facility Ready-to-Serve</th>
</tr>
</thead>
</table>

**Scope**

Base Operations (Ready to Serve) consists of ready-to-ship operations and ready to serve:

- Receive and store low-level waste (LLW), mixed low-level waste (MLLW), and transuranic (TRU) waste from onsite and offsite generators consistent with the Hanford Site Solid Waste Acceptance Criteria.
- Repackage, treat, vent, sample, verify, assay, nondestructive examination, and perform other activities as required to process LLW and MLLW in support of final disposal onsite.
- Repackage, treat, vent, sample, verify, assay, nondestructive examination and perform other activities as required to process TRU waste in support of final disposal at WIPP.
- Prepare waste for shipment either to WIPP or to ERDF or mixed low-level waste trenches. Actual shipment to WIPP is provided by WIPP under the Central Characterization Program (CCP).

This includes maintaining all systems required for the above operations, excluding those required for min-safe.

**Exclusion:**

Ready-to-serve does not contain work scope for maintaining of min-safe conditions.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Scope
The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

1. Facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;
2. Facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;
3. Maintain occupational radiation exposures within regulatory limits, and as low as reasonably achievable;
4. Maintain controls consistent with its safety basis and safety support documents; and,
5. Protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consists of:
- Surveillance
- Maintenance
- Quality Assurance,
- Training,
- Engineering,
- Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
- Environmental compliance,
- Other support.
- Facility Supervision,
- Work Control, and
- Radiation protection.

Excluded from this scope is:
Preparation of safety analysis documents (covered in a separate WBS element in general administration).

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
<table>
<thead>
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<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.07.50</td>
<td>Waste Recieving and Processing Facility Min Safe</td>
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Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.07.50.01</td>
<td>Waste Recovering and Processing Facility Surveillance</td>
</tr>
<tr>
<td>Scope</td>
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<tr>
<td>The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&amp;TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.</td>
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</table>

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Maintenance consists of the following:

• All Corrective maintenance (CM) work (repairs).
• All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
• All repairs or replacement of failed or failing equipment or obsolete equipment.
• All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
• Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
• Safety related inspections. |

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time. |

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<tr>
<th>Assumptions</th>
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Requirements

1. See higher level WBS level for additional requirements.
**Scope**

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.

Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.07.50.03</td>
<td>Waste Receiving and Processing Facility Quality Assurance</td>
</tr>
</tbody>
</table>
### Scope
The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:
- Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
- Training is provided on facility orientation.
- Training is provided on general employee training and site access. The training content may be provided by others.
- Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
- Training is provided on Integrated Safety Management System/Environmental Management.
- Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
- Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
- Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
- Maintaining of all facility training records.
- Facility personnel "seat time" during the training.
- Training course fees.
- Facility specific training curriculum updates.

### Exclusion:
This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.07.50.05</th>
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<tr>
<td>CWBS Title</td>
<td>Waste Recieving and Processing Facility Engineering</td>
</tr>
</tbody>
</table>

**Scope**

Scope consists of:
- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

Exclusion:
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.07.50.06</td>
<td>Waste Recieving and Processing Facility RCRA Compliance Waste Management</td>
</tr>
</tbody>
</table>

**Scope**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
## CWBS Number
RL-0013.07.50.07

## CWBS Title
Waste Receiving and Processing Facility Environmental Compliance

### Scope
Support to facility management for implementation of the environmental program. The scope consists of:

- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
- Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
- Compliance with all environmental permits and regulations applicable to the facility;
- Compliance with all agreed orders issued to the facility or other direction.
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and in-put to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**
All scope associated with RCRA compliance waste management enhancements.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
**Scope**

Other facility support scope consists of the following:

- Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
- Facility criticality controls and implementation, and oversight, as required.
- Implementation of safeguards and security requirements for material accountability, if applicable.
- All other facility safety basis implementation, and oversight, as required.
- Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/ modification review, and facility technical support. All as required.
- Administration of facility specific procurements.
- Industrial hygiene and occupational safety.
- All facility specific waste management activities.
- Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
- Facility staff and visitor time spend participating in emergency drills.
- Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility's records management process, if applicable.
- Facility cost records maintenance and record keeping, except when performed by a central group.
- Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
- Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
- Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
- Facility assessments, including management assessments of the facility.
- Facility corrective action management.
- All contract issues bearing on the facility, unless performed by a central group.
- General housekeeping services.
- Hoist and rigging, except when provided by a central pool.
- General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
- Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
- Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
- Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
- Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

**Exclusions:**

The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.07.50.08</td>
<td>Waste Recieving and Processing Facility Other Support</td>
</tr>
</tbody>
</table>


### Assumptions

1. See higher level WBS level for additional requirements.

### Scope

Facility supervision scope is:
- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.
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<th>RL-0013.07.50.10</th>
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<tr>
<td><strong>CWBS Title</strong></td>
<td>Waste Receiving And Processing Facility Work Control</td>
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</table>

**Scope**

- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Scope

Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.

Facility scope consists of:

- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
### CWBS Number

RL-0013.08

### CWBS Title

T-Plant

### Scope

Scope consists of maintaining a ready-to-serve condition, maintaining min-safe, and facility upgrades.

Base Operations (Ready to Serve):
- Receive and store low-level waste (LLW), mixed low-level waste (MLLW), and transuranic (TRU) waste from onsite and offsite generators consistent with the Hanford Site Solid Waste Acceptance Criteria.
- Repackage, treat, vent, sample, verify, assay, nondestructive examination, and perform other activities as required to process LLW and MLLW in support of final disposal onsite.
- Repackage, treat, vent, sample, verify, assay, nondestructive examination and perform other activities as required to process TRU waste in support of final disposal at WIPP.
- Receive and store K Basin sludge.

Min-Safe Operations:
Maintain/Operate T Plant in a safe, compliant, and cost-effective manner. Operate the complex in accordance with DOE requirements, authorization basis documents, State and Federal regulation, the TPA, permit conditions and acceptance criteria for LLW, MLLW, and TRU waste. The scope includes those programs that through implementation result in safe and compliant facility operations.

Facility Upgrades:
This activity provides for the upgrade of the T Plant Complex in order to ensure continuous safe, compliant, and cost-effective operations. Planned upgrades are:
- Tunnel air lock,
- Canyon fire system installation,
- Completion of the fire loop,
- Floor epoxy treatment, and
- Paving (roads).

### Assumptions

### Requirements

1. See lower level WBS level for additional requirements.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. 10 CFR 71; Packaging And Transportation Of Radioactive Material
4. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
5. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
6. 10 CFR 824; Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations
7. 10 CFR 835; Occupational Radiation Protection
8. 10 CFR 850; Chronic Beryllium Disease Prevention Program
9. 10 CFR 851; Worker Safety and Health Program
10. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
11. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
12. 29 CFR 1910; Occupational Safety And Health Standards
13. 36 CFR 60; National Register of Historic Places
14. 40 CFR 60.150; Standards Of Performance For New Stationary Sources
15. 40 CFR 61; National Emission Standards for Hazardous Air Pollutants
16. 40 CFR 261; Identification and Listing of Hazardous Waste
17. 40 CFR 262; Standards Applicable To Generators Of Hazardous Waste
18. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
19. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
20. 40 CFR 300-372; Comprehensive Environmental Response, Compensation, and Liability Act
21. 40 CFR 302; Designation, Reportable Quantities, and Notification
22. 40 CFR 355; Emergency Planning And Notification
23. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know
24. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know
25. 40 CFR 761; Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions
26. 40 CFR 763; Asbestos
27. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs
28. 49 CFR 130; Oil Spill Prevention and Response Plans
29. 49 CFR 107; Hazardous Materials Program Procedures
30. 49 CFR 171; General Information, Regulations, and Definitions
32. 49 CFR 173; Shippers -- General Requirements for Shipments and Packagings
33. 49 CFR 177; Carriage by Public Highway.
34. 49 CFR 178; Specifications For Packagings
35. 49 CFR 179; Specifications For Tank Cars
36. 49 CFR 180; Continuing Qualification And Maintenance Of Packagings
37. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties
38. 49 CFR 385; Safety Fitness Procedures
39. 49 CFR 387; Minimum Levels Of Financial Responsibility For Motor Carriers
40. 49 CFR 390; Federal Motor Carrier Safety Regulations: General
41. 49 CFR 391; Qualifications of Drivers
42. 49 CFR 392; Driving of Commercial Motor Vehicles
43. 49 CFR 393; Parts and Accessories Necessary for Safe Operations
44. 49 CFR 395; Hours Of Service Of Drivers
45. 49 CFR 396; Inspection, Repair and Maintenance
46. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules
47. 42 USC 2011-2259; Atomic Energy Act of 1954, as amended
48. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976
49. 42 USC 7401; Clean Air Act
50. 44 USC 3105; Safeguards
51. WAC 46-48; Transportation Of Hazardous Materials
52. WAC 173-303; Dangerous Waste Regulations
53. WAC 173-304; Minimum Function Standards for Solid Waste Handling
54. WAC 173-340; Model Toxics Control Act -- Cleanup
55. WAC 173-360; Underground Storage Tank Regulations
56. WAC 173-400; General Regulations For Air Pollution Sources
57. WAC 173-401; Operating Permit Regulation
58. WAC 173-460; Controls for New Sources of Toxic Air Pollutants
59. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide
60. WAC 246-247; Radiation Protection -- Air Emissions
61. 00-05-006; Air Operating Permit (AOP)
62. Hanford Site Air Operating Permit
63. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<td>RL-0013.08</td>
<td>T-Plant</td>
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64. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document
65. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)
66. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan
67. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document
68. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment
69. RRD 005, Rev 3; Worker Safety
70. RRD 007; Chronic Beryllium Disease Prevention Program
71. RRD 008, Rev 3; Quality Assurance Program Requirements
72. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
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<td>T-Plant</td>
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**T Plant**
Scope
This activity provides for the operations of the T Plant Complex in a safe, compliant, and cost-effective manner in accordance with DOE requirements, authorization basis documents, State and Federal regulations, the TPA, permit conditions, and acceptance criteria for LLW, MLLW, and TRU waste. This element includes those activities that through continuous implementation will maintain the facility's ability to receive, store, process, and ship waste.

Base Operations (Ready to Serve) scope is:
• Receive and store low-level waste (LLW), mixed low-level waste (MLLW), and transuranic (TRU) waste from onsite and offsite generators consistent with the Hanford Site Solid Waste Acceptance Criteria.
• Repackage, treat, vent, sample, verify, assay, nondestructive examination, and perform other activities as required to process LLW and MLLW in support of final disposal onsite.
• Repackage, treat, vent, sample, verify, assay, nondestructive examination and perform other activities as required to process TRU waste in support of final disposal at WIPP.
• Receive and store K Basin sludge.

Base Operations (Ready to Serve) consists of ready-to-ship operations and ready to serve:
Ready to serve also includes maintenance of equipment and systems to ship waste out of the facility that are not related to min-safe equipment.

Exclusion:
Ready-to-serve does not contain work scope for maintaining of min-safe conditions.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
### CWBS Number
RL-0013.08.03

### CWBS Title
T Plant Upgrades

#### Scope
Upgrades are defined as replacement of existing equipment with newer better equipment that performs the same basic function, or installation of new equipment not previously in the facility. The mission of the T Plant is to safely store waste, process/repack waste, and treat selected waste until final disposition. This WBS element contains life extension upgrades for T Plant to assure continued safe, cost-effective, compliant operations throughout the operating life of the facility, and through Deactivation & Decommissioning (D&D). These projects are one-time upgrades that will be done only once prior to D&D of the facility.

The following criteria will be used to identify the upgrades needed:
- Reduce DSA hazard conditions,
- Upgrade obsolete equipment that will be needed for the life of the facility,
- Refurbish infrastructure that will be needed for the life of the facility, or
- Establish a strong configuration baseline, including documentation of capsule information.

T Plant may perform the following upgrades during the contract period. The disposition or the plan for dispositioning these activities is noted below:
- **Tunnel Airlock.**
- **T Plant Canyon Fire System.** The T Plant Canyon lacks a fire suppression system (e.g., sprinklers). Phase Two sludge treatment may require a fire suppression system in order to mitigate fire accidents during treatment operations.
- **T Plant Epoxy Floor.** Floors in the Electrical, Piping, and Operating Galleries need to have Epoxy paint applied to seal the floors and to make decontamination easier in the event of radioactive spills and spread of contamination from routine and planned operations (e.g., Phase Two sludge treatment).
- **T Plant Paving.** Access roads around T Plant require repaving.
- **Complete Fire Loop.** Fire protection water delivered to T Plant is a "dead-end" delivery and is not supplied by a fire loop (i.e., water is available from two separate directions in the event one line is inoperable. Phase Two sludge treatment may require a fire loop system in order to mitigate fire accidents during treatment operations.

Other minor upgrades to electrical equipment, canyon crane, ventilation equipment, and monitoring equipment may be necessary:
- **Exhaust Ventilator Fans(2) in 291-T** may need replacement.
- **Exhaust Ventilator Fans(2) in 2706-T/TA** may need replacement.
- **Ventilator Fans/Heaters (6) General Service** may need replacement.
- The electrical power supply for T Plant is original (1943). It is unknown how long it will continue to last. Replacement parts and spares are not available. Removal and replacement of the main facility’s electrical power will be required. Replacement of power at 291-T, and an upgrade of lower voltage equipment will be required. Replace the power supply with a 13.8KV supply and upgrade low voltage equipment.
- **Main T-Plant building roof installed in 2007.** Assume repairs every 10 years by existing roof repair crews.
- **Fire Alarms (2 Fire Alarm Control Panel and 2 Remote Fire Alarm R):** Assume both need to be replaced within the next 10 years.
- **Canyon crane:** Assume all wire ropes, hoists, bearings, wheels, and brakes will need to be replaced over the next 15 years. Assume full electrical upgrade is required within 5 years.

#### Assumptions

#### Requirements
1. See higher level WBS level for additional requirements.
<table>
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<td>RL-0013.08.03</td>
<td>T Plant Upgrades</td>
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Scope

T Plant uses a portable drum venting system that consists of a lid restraint structure, a remotely operated air drill, a camera, and a ventilation hood. The lid restraint structure captures the lid should flammable gas deflagrate during drilling operations. The remotely operated air drill eliminates the spark potential inherent to an electrically operated drill and removes personnel from the potentially hazardous vicinity adjacent to the drilling operation. The camera allows the operator to view the operation, and the exhauster/hood configuration controls the potential release of radiological contamination after the lid is penetrated and before the filter is installed. Once the drum lid has been penetrated, the operator installs the filter manually. The system is sized for two different drum sizes: 55 gal and 85 gal. The restraint system configuration and drill attachment vary between the two sizes, but the basic function and approach are unchanged. This system was developed for use at T Plant but may be used at other locations within the SWOC.

This scope of work includes revising the JCO and T-Plant operation procedures, purchasing bore scopes, personal protective equipment (PPE), drill bits and venting filters, Beryllium sampling of some drums (based on knowledge of source, drum origin and sampling plan), penetrating, venting, installing filters in the unvented drums. For those unvented liner drums not already at T-Plant, they will be shipped from storage, vented and shipped back to storage to be processed for repackaging at a later date. The process involves penetrating, venting and installing filters in the unvented drums. Also there are 150 drums not yet characterized. An estimated 10 percent of these drums will be Beryllium sampled to establish a negative exposure. Unvented bulging drums, and drums containing greater than or equal to 33 DE-Ci with the potential of generating flammable gas above the LFL, arrive at T Plant in vented 85-gal overpacks. Upon receipt, the overpacked drums are offloaded and segregated as needed, based on DE-Ci inventory. Venting may occur in the 2706-T building, 221-T Canyon, or tunnel. Process elements include a drilling apparatus; provisions for electrical continuity between the assembly elements, an overpack as required, remote operation of the drill; and the required 10.7-m (35-ft) separation zone during drilling. The drum penetrators, consisting of either nonsparking drill bits or cold drilling hardware with grounding and bonding, are relied upon for venting waste containers. Upon completion of drilling, the drum is staged in a storage area until the conclusion of the abatement period. SWOC uses a drum venting system that consists of a lid restraint structure, a remotely operated air drill, a camera, and a glovebag or hood. The lid restraint structure retains the lid should flammable gas deflagrate during drilling operations. The remotely operated air drill eliminates the spark potential inherent to an electrically operated drill and removes personnel from the potentially hazardous vicinity adjacent to the drilling operation. A camera allows the operator to view the operation. A glovebag or hood controls the potential release of radiological contamination after the lid is penetrated and before the filter is installed. The filters, some with a sample septum, are manually installed after the lid is penetrated. The system is capable of installing vents in 55 gal and 85 gal drums. The restraint system configuration and drill attachment vary between the two sizes, but the basic function and approach are unchanged. The FRP and metal box vent systems are similar to the portable Drum Venting System. The drill assembly, motor, and bit type will functionally remain the same. The system uses a cold drilling technique. The venting system is placed on the top or side of the container and held in place with straps, clamps, or screws throughout the drilling and filter installation operation. The system will be remotely activated and operated. Contamination control techniques will be used during container venting and filter installation evolutions.

After venting, containers determined to contain elevated flammable gas content are allowed to diffuse or are purged. Subsequent handling is minimized until sufficient diffusion has taken place. If necessary, filtered vents may be manually tightened to ensure proper seating. Thus, in summary, the venting process is:

• Loading and Shipping from Central Waste Complex to 2706-T
• Preparing drilling equipment, tools and materials
• Special personnel requirements
• Performance documents
• Pre start items
• Drum preparation and placement
• Drilling verification/preparation
• Remote drilling process
• Re-Entry for adjustment of drill bit stops
• Drilling of inner drum and liner
• Second drilling attempt of inner drum and liner
• Drilling complete
• Re-entry process
• Over packed drum venting obstruction resolution
• Filter Installation and drum removal
• Drum abatement
<table>
<thead>
<tr>
<th>Assumptions</th>
</tr>
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<tr>
<td>Requirements</td>
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1. See higher level WBS level for additional requirements.
Scope

The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

1. Facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;
2. Facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;
3. Keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;
4. Maintain controls consistent with its safety basis and safety support documents; and,
5. Protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consists of:

- Surveillance
- Maintenance
- Quality Assurance,
- Training,
- Engineering,
- Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
- Environmental compliance,
- Other support.
- Facility Supervision,
- Work Control, and
- Radiation protection.

Excluded from this scope is:

Preparation of safety analysis documents (covered in a separate WBS element in general administration).

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<th>CWBS Title</th>
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<td>RL-0013.08.50</td>
<td>T Plant Min Safe</td>
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Scope

Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status.

Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents.

Surveillance includes:

• Routine recording of instrument reading or performance required by surveillance plans.
• Routine testing/checking/verification of environmental instruments.
• Routine testing/checking/verification of safety instruments.
• Radiological surveys required by permits or DSA.
• Environmental surveys required by permits or DSA.
• Safety inspections required by integrated safety management plans or other.
• Fire inspections.
• Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:

All maintenance activities, including repair to M and TE and any other surveillance instruments.
Preventative maintenance (PM) items.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<td>RL-0013.08.50.01</td>
<td>T Plant Surveillance</td>
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Scope

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs.

Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.

Maintenance consists of the following:

• All Corrective maintenance (CM) work (repairs).
• All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
• All repairs or replacement of failed or failing equipment or obsolete equipment.
• All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
• Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
• Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Assumptions

Requirements
The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met. The quality assurance scope consists of:

• The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
• Supplier (vendor) surveillance activities,
• Quality assurance surveillance and monitoring programs,
• Quality assurance assessments, trend analyses, and occurrence reports.
• Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
• Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
• Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
• Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
• Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
• Assuring that items are identified and controlled to prevent use of incorrect or defective items.
• Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
• Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
• Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
• Assuring that Quality Assurance Program requirements apply to design control.

Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design. Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

Assumptions
Requirements
1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.08.50.03</td>
<td>T Plant Quality Assurance</td>
</tr>
</tbody>
</table>
Scope

The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:

• Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
• Training is provided on facility orientation.
• Training is provided on general employee training and site access. The training content may be provided by others.
• Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
• Training is provided on Integrated Safety Management System/Environmental Management.
• Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
• Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
• Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
• Maintaining of all facility training records.
• Facility personnel "seat time" during the training.
• Training course fees.
• Facility specific training curriculum updates.

Exclusion:

This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
## Scope

Scope consists of:

- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

### Exclusion:
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

## Assumptions

## Requirements

1. See higher level WBS level for additional requirements.
### CWBS DICTIONARY SHEET

<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.08.50.06</th>
</tr>
</thead>
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<tr>
<td>CWBS Title</td>
<td>T Plant RCRA Compliance Waste Management Enhancements</td>
</tr>
</tbody>
</table>

#### Scope
- All scope associated with RCRA compliance waste management enhancements.

#### Assumptions

#### Requirements
1. See higher level WBS level for additional requirements.
**CWBS Number**  
RL-0013.08.50.07  

**CWBS Title**  
T Plant Environmental Compliance

<table>
<thead>
<tr>
<th>Scope</th>
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<tbody>
<tr>
<td>Support to facility management for implementation of the environmental program. The scope consists of:</td>
</tr>
<tr>
<td>• Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:</td>
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<tr>
<td>• Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;</td>
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<tr>
<td>• Compliance with all environmental permits and regulations applicable to the facility;</td>
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<tr>
<td>• Compliance with all agreed orders issued to the facility or other direction.</td>
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<tr>
<td>• Developing policy and resolving issues pertaining to environmental compliance specific to the facility;</td>
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<tr>
<td>• Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and</td>
</tr>
<tr>
<td>• Providing corrective actions for adverse trends specific to the facility.</td>
</tr>
<tr>
<td>• Maintaining all required environmental records and permits.</td>
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<tr>
<td>• Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.</td>
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<tr>
<td>• Sampling and sample analysis associated with the air operating permit.</td>
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<tr>
<td>• Trend analysis of the air operating permit sample analysis results.</td>
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<tr>
<td>• Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.</td>
</tr>
<tr>
<td>• Participation in site work site assessments as required.</td>
</tr>
<tr>
<td>• Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.</td>
</tr>
<tr>
<td>• Environmental Control Officer (ECO) or equivalent review and input to procedures.</td>
</tr>
<tr>
<td>• ECO’s radioactive emission calculations.</td>
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<tr>
<td>• Developing data for compliance reports</td>
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<tr>
<td>• Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.</td>
</tr>
<tr>
<td>Exclusion:</td>
</tr>
<tr>
<td>• All scope associated with RCRA compliance waste management enhancements.</td>
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<td>1. See higher level WBS level for additional requirements.</td>
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<td>CWBS Number</td>
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<td>RL-0013.08.50.08</td>
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</tbody>
</table>

### Scope

Other facility support scope consists of the following:

- Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
- Facility criticality controls and implementation, and oversight, as required.
- Implementation of safeguards and security requirements for material accountability, if applicable.
- All other facility safety basis implementation, and oversight, as required.
- Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/modification review, and facility technical support. All as required.
- Administration of facility specific procurements.
- Industrial hygiene and occupational safety.
- All facility specific waste management activities.
- Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
- Facility staff and visitor time spend participating in emergency drills.
- Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
- Facility cost records maintenance and record keeping, except when performed by a central group.
- Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
- Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
- Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
- Facility assessments, including management assessments of the facility.
- Facility corrective action management.
- All contract issues bearing on the facility, unless performed by a central group.
- General housekeeping services.
- Hoist and rigging, except when provided by a central pool.
- Vehicle maintenance and provisioning, including supplying vehicles of any description, except when provided by a central pool.
- General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
- Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
- Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
- Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
- Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

Exclusions:
The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<td>RL-0013.08.50.08</td>
<td>T Plant Other Support</td>
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<td>CWBS Number</td>
<td>RL-0013.08.50.09</td>
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<tr>
<td>CWBS Title</td>
<td>T-Plant Supervision</td>
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</table>

**Scope**

Facility supervision scope is:
- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.08.50.10</td>
<td>T-Plant Work Control</td>
</tr>
</tbody>
</table>

**Scope**

Facility work control scope is:
- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.08.50.11</th>
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<tr>
<td>CWBS Title</td>
<td>T-Plant Rad Protection</td>
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</table>

**Scope**
Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.
Facility scope consists of:
- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
The CWC is located in the 200W Area. It is on the west side of Dayton Avenue and is bounded by the following description: beginning at a point 130 m south and 15 m west of the edge of the Dayton and 23rd Streets (approximate alignment of existing CWC fence), proceeding west approximately 105 m, proceeding southwest 85 m, proceeding south 50 m, proceeding west 115 m, proceeding south 75 m, proceeding west 110 m, proceeding south 935 m, proceeding west 350 m, proceeding south 190 m (approximately 21 m north of existing fence), proceeding east 740 m to a point approximately 15 m from the edge of Dayton and 23rd Streets, and proceeding north 1310 m to point of beginning. The facility was designed and authorized to receive and store primarily CH LLMW, CH LLW not meeting disposal criteria, CH TRU waste packages, and a limited number of RH TRU waste packages. The primary types of wastes processed or stored are LLW, LLMW (including alkali metal and low flashpoint waste), TRU waste, and TRUM waste.

The CWC is a treatment and storage facility with the necessary accompanying activities, which may include but are not limited to container shipping, container venting, waste treatment, receiving, handling, and staging. Other activities may be conducted within the CWC, provided applicable reviews are satisfactorily completed against the safety basis and environmental and fire hazard analysis documentation.

The CWC main structures include the 2402 series (excluding 2402-W and 2402-WC), 2403 series, and 2404 series buildings. Other CWC facilities include the Low Flash Point Storage Modules (FS-1 to FS-3, FS-5 to FS-7, FS-9 to FS-12, and FS-14 to FS-27), Alkali Metal Waste Modules (AMW-1 to AMW-4) the Waste Receiving and Staging Area, the Mixed Waste Storage Pad, and the 2420-W Cask Storage Pad. Additional buildings may be added to those managed by CWC, such as 2404-WB, 2404-WC, and the High Energy Real Time Radiography (HERTR) unit currently managed by WRAP. Portable APLs may be utilized for waste characterization and processing. The APLs are planned to operate within the SWOC. Glovebox APL details have not been finalized, therefore, these operations are not authorized.

Other outside areas within CWC are used for storing or staging waste to be shipped to the LLBG or other facilities for treatment or disposal.

The Waste Receiving and Staging Area is an open-air facility used to receive, inspect, and stage containers of radioactively contaminated waste before disposition. This area is designed for receiving and staging waste that is in transit between shipping and storage.

The Mixed Waste Storage Pad (MWSP) provides staging and storage for LLW and TRU containers. The pad is constructed for secondary containment of liquids and has a RCRA permitted capacity of approximately 1,700 drums.

The low flashpoint mixed waste (LFMW) storage modules are designed to store compatible hazardous and radioactive waste containers. Low level and TRU radioactively contaminated flammable waste can be stored in any of the storage modules. Individual modules contain compatible wastes. Currently, there are 24 modules of various capacities with RCRA permitted total storage capacity of 946 drums. Each module has a vented catch sump under the storage floor deck that provides spill containment.

Currently, there are four alkali metal waste (AMW) storage modules (AMW-1, AMW-2, AMW-3, and AMW-4) near the LFMW storage modules that are used for low-level radioactive alkali metal mixed waste storage. The primary hazardous material stored is contaminated sodium metal. The AMW modules are pre-engineered hazardous material storage lockers similar to the LFMW modules. Each AMW module can store thirty-two 208-L (55-gal) overpack drums or a similar volume of boxes. LFMW Storage Module FS-19 is of similar design and construction as the AMWs, and has an internal storage area of approximately 16.4 m² (176 ft²). Venting is achieved using natural convection, with vents at the floor and ceiling levels to prevent buildup of flammable gases. Modules are designed with a spill containment capacity of 2,839 L (750 gal) under the floor decks.

The mixed waste storage buildings are steel structures with concrete floors. The 2403-W-series buildings slope to a central collection sump in each quarter, and the 2404-W-series buildings slope to a sump in each half. A ramp is available at each building for shipping and receiving. Storage is as follows:

- The 2402-W Mixed Waste Storage Building series consists of 12 RCRA-permitted buildings currently storing combinations of compatible hazardous and radioactive wastes (e.g., toxic, oxidizers, acid, caustic, combustible, polychlorinated biphenyl [PCB], low-level, and TRU wastes). Each building will accommodate up to 1,070 drums. 2402-W and 2402-WC are not used for waste storage.
- The 2403-W Mixed Waste Storage Building series consists of four RCRA-permitted buildings. Each is designed to meet all of the requirements for storing hazardous, mixed, and radioactive waste. The four buildings will accommodate up to 52,300 drums.
- The 2404-W Mixed Waste Storage Building series consists of three RCRA-permitted buildings meeting all of the requirements for storing containers of LLW, LLMW, PCBs, TRU waste, suspect TRU waste, and TRUM waste.
<table>
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<tr>
<th>CWBS Number</th>
<th>RL-0013.09</th>
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</thead>
<tbody>
<tr>
<td><strong>CWBS Title</strong></td>
<td>Central Waste Complex (CWC)</td>
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</table>

Waste, and TRUM waste. The three buildings will accommodate up to 13,800 drums. The 2420-W Cask Storage Pad provides interim storage of casks containing vitrified RH TRU waste and spent fuel segments, pieces, and fragments. A concrete apron adjoining the pad on the east is intended for storing empty casks and impact limiters used in transporting the casks. It is an open air facility that slopes outward to prevent precipitation from accumulating.

Currently, eight South Alkali Metal (SAM) Storage Modules (SAM-1 through SAM-8) are storing radioactively contaminated alkali metal. The primary hazardous material is contaminated sodium metal from reactor research that is stored pending reuse. The SAM modules are pre-engineered hazardous material storage lockers similar to the LFMW modules. Each module can store up to twenty-one 322 L (85 gal) 17-E steel overpack drums or an equivalent volume of boxes. Each module sits on skids about 10.2 cm (4 in.) above the asphalt pad. Venting is achieved by using natural convection, through vents at the floor and ceiling levels, to prevent buildup of flammable gases. Modules are designed with a spill containment capacity of 2,839 L (750 gal) under the floor decks.

Arrays of waste containers may be stored in outside locations within the CWC Facility boundary. Containers in these locations may include large combustible boxes that cannot be stored within the CWC structures and large non-combustible containers that will not fit into the CWC structures. The outside storage arrays shall comply with all MDSA, fire hazard analysis, and environmental requirements for waste arrays.

ERDF Ready for Use Container Maintenance Support Area. This maintenance support area, located north of the South Alkali Metal Storage Modules, is used for the routine inspection, maintenance, and repair of the roll-on/roll-off (RO/RO) waste containers in the ERDF Ready for Use container fleet.

Activities at the CWC for all types of wastes packages include the following:
- Shipping and receiving waste
- Waste container handling
- Waste staging and storage
- Noninvasive survey and inspection
- Nondestructive Analysis (NDA)
- Waste transfers
- Container venting
- Waste treatment
- Decontamination
- Packaging and repackaging (overpacking)
- Waste Verification
- Head Space gas Sampling (HSGS).
- Surveillance and maintenance of required equipment.
- All support functions, including facility management.
- Facility upgrades
- Planned, corrective, and routine maintenance
- Surveys, inspections
- Support functions.

Work scope does not include:
- Transition to D&D
- Demolition of CWC.
### Assumptions

1. See lower level WBS level for additional requirements.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. 10 CFR 71; Packaging And Transportation Of Radioactive Material
4. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
5. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
6. 10 CFR 824; Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations
7. 10 CFR 835; Occupational Radiation Protection
8. 10 CFR 850; Chronic Beryllium Disease Prevention Program
9. 10 CFR 851; Worker Safety and Health Program
10. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
11. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
12. 29 CFR 1910; Occupational Safety And Health Standards
13. 40 CFR 60.150; Standards Of Performance For New Stationary Sources
15. 40 CFR 761; Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions
16. 40 CFR 763; Asbestos
17. 40 CFR 130; Oil Spill Prevention and Response Plans
18. 40 CFR 171; General Information, Regulations, and Definitions
20. 49 CFR 390; Federal Motor Carrier Safety Regulations: General
21. 49 CFR 391; Carriage By Rail
22. 49 CFR 392; Carriage by Public Highway.
23. 49 CFR 398; Specifications For Packagings
24. 49 CFR 399; Specifications For Tank Cars
25. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties
26. 49 CFR 385; Safety Fitness Procedures
27. 49 CFR 387; Minimum Levels Of Financial Responsibility For Motor Carriers
28. 49 CFR 390; Federal Motor Carrier Safety Regulations: General
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL-0013.09</td>
<td>Central Waste Complex (CWC)</td>
</tr>
</tbody>
</table>

40. 49 CFR 391; Qualifications of Drivers
41. 49 CFR 392; Driving of Commercial Motor Vehicles
42. 49 CFR 393; Parts and Accessories Necessary for Safe Operations
43. 49 CFR 395; Hours Of Service Of Drivers
44. 49 CFR 396; Inspection, Repair and Maintenance
45. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules
46. 42 USC 2011-2259; Atomic Energy Act of 1954, as amended
47. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976
48. 42 USC 7401; Clean Air Act
49. 44 USC 3105; Safeguards
50. WAC 46-48; Transportation Of Hazardous Materials
51. WAC 173-303; Dangerous Waste Regulations
52. WAC 173-304; Minimum Function Standards for Solid Waste Handling
53. WAC 173-340; Model Toxics Control Act -- Cleanup
54. WAC 173-360; Underground Storage Tank Regulations
55. WAC 173-400; General Regulations For Air Pollution Sources
56. WAC 173-401; Operating Permit Regulation
57. WAC 173-460; Controls for New Sources of Toxic Air Pollutants
58. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide
59. WAC 246-247; Radiation Protection -- Air Emissions
60. 00-05-006; Air Operating Permit (AOP)
61. Hanford Site Air Operating Permit
62. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document
63. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document
64. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)
65. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan
66. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document
67. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment
68. RRD 005, Rev 3; Worker Safety
69. RRD 007; Chronic Beryllium Disease Prevention Program
70. RRD 008, Rev 3; Quality Assurance Program Requirements
71. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL-0013.09</td>
<td>Central Waste Complex (CWC)</td>
</tr>
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Central Waste Complex (CWC)
## Scope

This WBS provides for the safe, compliant operation of the Central Waste Complex (CWC) located in the 200 West Area of the Hanford Reservation. CWC consists of a series of buildings, storage pads, and storage modules designed and built for receiving, treating and storing Low Level Waste (LLW), Low Level Mixed Waste (LLMW) (including alkali metal and low-flashpoint waste), and TRU Waste. The CWC is located in the 200W Area. It is on the west side of Dayton Avenue and is bounded by the following description: beginning at a point 130 m south and 15 m west of the edge of the Dayton and 23rd Streets (approximate alignment of existing CWC fence), proceeding west approximately 105 m, proceeding southwest 85 m, proceeding south 50 m, proceeding west 115 m, proceeding south 75 m, proceeding west 110 m, proceeding south 935 m, proceeding west 350 m, proceeding south 190 m (approximately 21 m north of existing fence), proceeding east 740 m to a point approximately 15 m from the edge of Dayton Street, and proceeding north 1310 m to point of beginning. The facility was designed and authorized to receive and store primarily CH LLMW, CH LLW not meeting disposal criteria, CH TRU waste packages, and a limited number of RH TRU waste packages. The primary types of wastes processed or stored are LLW, LLMW (including alkali metal and low flashpoint waste), TRU waste, and TRUM waste. The CWC is a treatment and storage facility with the necessary accompanying activities, which may include but are not limited to container shipping, container venting, waste treatment, receiving, handling, and staging. Other activities may be conducted within the CWC, provided applicable reviews are satisfactorily completed against the safety basis and environmental and fire hazard analysis documentation. There is no rail access for CWC.

The CWC main structures include the 2402 series (excluding 2402-W and 2402-WC), 2403 series, and 2404 series buildings. Other CWC facilities include the Low Flash Point Storage Modules (FS-1 to FS-3, FS-5 to FS-7, FS-9 to FS-12, and FS-14 to FS-27), Alkali Metal Waste Modules (AMW-1 to AMW-4) the Waste Receiving and Staging Area, the Mixed Waste Storage Pad, and the 2420-W Cask Storage Pad. Additional buildings may be added to those managed by CWC, such as 2404-WB, 2404-WC, and the High Energy Real Time Radiography (HERTR) unit currently managed by WRAP. CWC is maintained in a ready-to-serve status to provide for the interim storage of LLW, MLLW, TRU waste and waste receipts from DOE-RL approved generators. This activity provides for the operation of the CWC in a safe, compliant, and cost-effective manner. Operation of the CWC shall be in accordance with DOE requirements, authorization basis documents, State and Federal regulation, the TPA, permit conditions, and acceptance criteria for LLW, MLLW, and TRU waste.

Base operations (Ready-to-serve) encompasses the capability to perform these activities at the CWC for all types of wastes packages. Scope is:

- Shipping and receiving
- Waste container handling
- Waste staging and storage
- Waste container overpacking
- Nonintrusive survey and inspection
- Nondestructive assay (NDA)
- Waste transfers
- Container venting
- Waste treatment
- Decontamination
- Packaging and repackaging (overpacking)
- Waste Verification
- Headspace gas sampling (HSGS)

Waste may be received in drums, standard waste boxes (SWBs), standard large box 2, or fiberglass reinforced packages.

The waste volume processed by CWC depends on when the Waste Isolation Pilot Plant (WIPP) resumes receipt of waste (WIPP was shut-down as of September, 2016). The TRU retrieval program once resumed will impact CWC.

Ready to serve also includes maintenance of equipment and systems to ship waste out of the facility that are not related to min-safe equipment.

**Assumptions**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
</tr>
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<tbody>
<tr>
<td>RL-0013.09.01</td>
<td>Central Waste Complex Ready-to-Serve</td>
</tr>
</tbody>
</table>
Assumptions

Requirements

1. See higher level WBS level for additional requirements.
**Scope**

The Contractor shall maintain the facility as described in the safety basis within applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

1. Facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;
2. Facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;
3. Keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;
4. Maintain controls consistent with its safety basis and safety support documents; and,
5. Protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations include facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations include upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also include weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consist of:

- Surveillance
- Maintenance
- Quality Assurance,
- Training,
- Engineering,
- Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
- Environmental compliance,
- Other support.
- Facility Supervision,
- Work Control, and
- Radiation protection.

Excluded from this scope is:

- Preparation of safety analysis documents (covered in a separate WBS element in general administration).

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.09.50</td>
<td>Central Waste Complex Min Safe</td>
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</tbody>
</table>
Scope

Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status. Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents.

Surveillance includes:
- Routine recording of instrument reading or performance required by surveillance plans.
- Routine testing/checking/verification of environmental instruments.
- Routine testing/checking/verification of safety instruments.
- Routine testing/verification of facility equipment (e.g., HEPA filters, fans, rollup doors).
- Functional testing or calibration of instrumentation.
- Radiological surveys required by permits or DSA.
- Environmental surveys required by permits or DSA.
- Safety inspections required by integrated safety management plans or other.
- Fire inspections.
- Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:
- All maintenance activities, including repair to M and T E and any other surveillance instruments.
- Preventative maintenance (PM) items.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
### CPCC CWBS DICTIONARY SHEET

<table>
<thead>
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.09.50.01</td>
<td>Central Waste Complex Surveillance</td>
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</tbody>
</table>
**Scope**

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.

Maintenance consists of the following:

- All Corrective maintenance (CM) work (repairs).
- All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
- All repairs or replacement of failed or failing equipment or obsolete equipment.
- All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
- Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
- Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.09.50.03</th>
</tr>
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<tr>
<td>CWBS Title</td>
<td>Central Waste Complex Quality Assurance</td>
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</table>

**Scope**

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.
- Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design.
- Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
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<th>CWBS Title</th>
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<tr>
<td>RL-0013.09.50.03</td>
<td>Central Waste Complex Quality Assurance</td>
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</table>
## Scope

The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:

- Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
- Training is provided on facility orientation.
- Training is provided on general employee training and site access. The training content may be provided by others.
- Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
- Training is provided on Integrated Safety Management System/Environmental Management.
- Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
- Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
- Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
- Maintaining of all facility training records.
- Facility personnel "seat time" during the training.
- Training course fees.
- Facility specific training curriculum updates.

Exclusion:

This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

## Assumptions

## Requirements

1. See higher level WBS level for additional requirements.
## CWBS Dictionary Sheet

<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.09.50.05</th>
</tr>
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<tr>
<td>CWBS Title</td>
<td>Central Waste Complex Engineering</td>
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</table>

### Scope
Scope consists of:
- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculation/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

### Exclusion:
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
## CPCC CWBS DICTIONARY SHEET

<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.09.50.06</th>
<th>CWBS Title</th>
<th>Central Waste Complex RCRA Compliance Waste Management Enhancements</th>
</tr>
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</table>

### Scope
All scope associated with RCRA compliance waste management enhancements.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
**Scope**

Support to facility management for implementation of the environmental program. The scope consists of:

- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
  - Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
  - Compliance with all environmental permits and regulations applicable to the facility;
  - Compliance with all agreed orders issued to the facility or other direction.
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and input to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports.
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**
### CWBS Title
Central Waste Complex Other Support

#### Scope
Other facility support scope consists of the following:

- Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
- Facility criticality controls and implementation, and oversight, as required.
- Implementation of safeguards and security requirements for material accountability, if applicable.
- All other facility safety basis implementation, and oversight, as required.
- Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/modification review, and facility technical support. All as required.
- Administration of facility specific procurements.
- Industrial hygiene and occupational safety.
- All facility specific waste management activities.
- Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
- Facility staff and visitor time spend participating in emergency drills.
- Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
- Facility cost records maintenance and record keeping, except when performed by a central group.
- Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
- Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
- Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
- Facility assessments, including management assessments of the facility.
- Facility corrective action management.
- All contract issues bearing on the facility, unless performed by a central group.
- General housekeeping services.
- Hoist and rigging, except when provided by a central pool.
- General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
- Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
- Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
- Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
- Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

**Exclusions:**
The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

#### Assumptions

#### Requirements

1. See higher level WBS level for additional requirements.
<table>
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<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.09.50.08</td>
<td>Central Waste Complex Other Support</td>
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<td>CWBS Number</td>
<td>RL-0013.09.50.09</td>
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**Scope**

Facility supervision scope is:

- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<th>CWBS Title</th>
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<td>RL-0013.09.50.10</td>
<td>Central Waste Complex Work Control</td>
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**Scope**

- Facility work control scope is:
  - Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
  - Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
  - Maintenance of all work control records, including work packages, unless performed by a central group.
  - Facility baseline development and maintenance as required.
  - Work performance record keeping, including earned value analysis and record keeping.
  - Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### CWBS Number
RL-0013.09.50.11

### CWBS Title
Central Waste Complex Rad Protection

### Scope
Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.
Facility scope consists of:
- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
Scope

The Hanford Site Environmental Restoration Disposal Facility (ERDF) is a 4.1 km2 (1.6 mi2) engineered mixed waste disposal landfill with associated support facilities that is regulated by the U.S. Environmental Protection Agency (EPA) through a 1995 Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) record of decision (ROD) (with amendments). ERDF supplies the haul trucks to bring the disposal material to ERDF as well as containers (roll-on/roll-off) for dumping (disposing waste in the cells). Scope is:

- Operate ERDF in the most efficient manner possible.
- Maintain the roads at ERDF for transport trucks' access.
- Expand ERDF as required.
- Maintain the permits, waste acceptance criteria, and safety basis of ERDF. This includes all revisions and up-dates.
- Manage the staff needed to operate ERDF, including training, procedures.
- Maintain the trucks and containers used.
- Operate the haul trucks.
- Maintain equipment needed to operate ERDF, e.g., air monitors, lysimeter).
- Operate and maintain the leachate collection system.
- Relocate wells as needed for monitoring groundwater around ERDF.
- Operate sample and analyze water from the ground water monitoring wells around ERDF.
- Maintain ERDF infrastructure (e.g., staff trailers, housekeeping, etc)

Key Features of ERDF:

- The ERDF was constructed to permanently dispose of all wastes generated by remediation of Hanford Site past-practice and CERCLA waste sites in an environmentally protective manner.
- Disposal of contaminated material at ERDF is the preferred remedy for much of the waste excavated from numerous Hanford waste sites.
- The ERDF was constructed on the Central Plateau portion of the Hanford Site between the 200 West and 200 East Areas. The principal design features of the facility serve to:
  - minimize the infiltration of water through disposal units;
  - ensure integrity of disposal unit covers;
  - provide for the structural stability of backfill, waste, and covers; and
  - provide a barrier against intrusion.

ERDF is constructed in a modular fashion so that additional disposal space can be built as needed.

- The first eight disposal cells were built in pairs located at the west end of ERDF. Each cell is approximately 152 m by 152 m (500 ft. by 500 ft.) at the bottom, approximately 21 m (70 ft.) deep, and has a 3:1 (horizontal to vertical ratio) side slope that extends 64 m (210 ft.) horizontally from the base of the cells.
- The latest cell construction toward the east (SuperCells 9 and 10) combines the cell pairings into one larger cell, approximately the same size as each cell pair.
- Note: as of February 2016, ERDF instigated a vertical expansion of 20 ft. The above mentioned depth of 70 ft. will changed to 90 ft. as the vertical expansion is put into place across the width and length of the existing cells. This will provide approximately the same disposal capacity as a new SuperCell without incurring the construction costs.

- The ERDF cells are constructed with a double-liner system for the purpose of collecting liquids, or leachate. These liquids are typically generated from natural precipitation and the application of dust control water that percolates downward through the disposed waste materials and collects on the surface of the lining material.

Rubble and/or soil is loaded into ERDF transport containers and staged for hauling/disposal by the Waste Operations project. For large or special waste forms, waste is transported to ERDF by the D4 project. Loadout to other transport containers or disposal to alternate disposition facilities is included in this task.

This scope covers work necessary to operate the Environmental Restoration and Disposal Facility (ERDF), expand ERDF facility as needed, and maintain the equipment needed for operation. There is no specific min-safe work scope for ERDF.

Leachate collection system:
• The primary (upper) and secondary (lower) liners each are designed to deliver leachate to sump areas.
• Sumps for the upper liners are independent from the sumps associated with the lower liners.
• The upper and lower sumps at each of the cells are routinely evacuated, and the leachate is collected (approximately two millions gallons annually) in holding tanks prior to transfer to the treatment facility—either 200 West Pump and Treat Facility (200 WPTF) or the Effluent Treatment Facility (ETF).

• The ERDF side slope and floor is lined with the double composite (i.e., primary geomembranes and secondary geomembrane) liner system for leak detection and to minimize the percolation of liquids into the subsurface.

• The primary liner is designed to keep leachate from leaking into the underlying primary leak detection recovery system.
• The secondary liner provides a means of identifying a leak from the primary system and provides an enhanced absorptive capacity for contaminants.
• The ERDF side slope liner comprises six layers:
  1. 0.9-m (3-ft) operations layer (sandy loam/silty sand),
  2. primary geocomposite drainage layer with a 3:1 (horizontal to vertical) drainage slope,
  3. primary 60-mil high-density polyethylene (HDPE) geomembrane liner,
  4. secondary geocomposite drainage layer with a 3:1 drainage slope,
  5. secondary 60-mil HDPE geomembrane liner, and
  6. 0.9-m (3-ft)-thick compacted admix layer with a minimum saturated hydraulic conductivity of 1×10^{-7} cm/s.

• The ERDF floor liner comprises 10 layers:
  1. 0.9-m (3-ft) operations layer (sandy loam/silty sand),
  2. geotextile separator,
  3. primary gravel drainage layer,
  4. geotextile cushion,
  5. primary 60-mil HDPE geomembrane liner,
  6. geotextile cushion,
  7. secondary gravel drainage layer,
  8. geotextile cushion,
  9. secondary 60-mil HDPE geomembrane liner, and
  10. 0.9-m (3-ft)-thick compacted admix layer with a minimum saturated hydraulic conductivity of 1×10^{-7} cm/s.

Assumptions
1. Groundwater ZP-1 facility (200 West pump and treat facility) will remain available to receive leachate via the ERDF transfer line.
2. No additional collection tanks will be needed.
3. No upgrades of the leachate collection system will be performed. This does not preclude tie-in of Supercell 11 to the collection system.

Requirements
1. See lower level WBS level for additional requirements.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. 10 CFR 71; Packaging And Transportation Of Radioactive Material
4. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
5. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
6. 10 CFR 835; Occupational Radiation Protection
7. 10 CFR 850; Chronic Beryllium Disease Prevention Program
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8. 10 CFR 851; Worker Safety and Health Program  
9. 10 CFR 1021; National Environmental Policy Act Implementing Procedures  
10. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses  
11. 29 CFR 1910; Occupational Safety And Health Standards  
12. 29 CFR 1926; Safety And Health Regulations For Construction  
13. 40 CFR 60.150; Standards Of Performance For New Stationary Sources  
15. 40 CFR 261; Identification and Listing of Hazardous Waste  
16. 40 CFR 300-372; Comprehensive Environmental Response, Compensation, and Liability Act  
17. 40 CFR 302; Designation, Reportable Quantities, and Notification  
18. 40 CFR 355; Emergency Planning And Notification  
19. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know  
20. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know  
21. 40 CFR 761; Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions  
22. 40 CFR 763; Asbestos  
23. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs  
24. 49 CFR 130; Oil Spill Prevention and Response Plans  
25. 49 CFR 107; Hazardous Materials Program Procedures  
26. 49 CFR 171; General Information, Regulations, and Definitions  
28. 49 CFR 173; Shippers -- General Requirements for Shipments and Packagings  
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30. 49 CFR 177; Carriage by Public Highway.  
31. 49 CFR 178; Specifications For Packagings  
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33. 49 CFR 180; Continuing Qualification And Maintenance Of Packagings  
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40. 49 CFR 393; Parts and Accessories Necessary for Safe Operations  
41. 49 CFR 395; Hours Of Service Of Drivers  
42. 49 CFR 396; Inspection, Repair and Maintenance  
43. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules  
44. 42 USC 7401; Clean Air Act  
45. WAC 46-48; Transportation Of Hazardous Materials  
46. WAC 246-247; Radiation Protection -- Air Emissions  
47. 00-05-006; Air Operating Permit (AOP)  
48. Hanford Site Air Operating Permit  
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50. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document  
51. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan  
52. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document  
53. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment  
54. RRD 005, Rev 3; Worker Safety  
55. RRD 007; Chronic Beryllium Disease Prevention Program  
56. RRD 008, Rev 3; Quality Assurance Program Requirements  
57. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
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<td>Environmental Restoration and Disposal Facility Cell Expansion</td>
</tr>
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**Assumptions**

1. See higher level WBS level for additional requirements.

**Requirements**

**Scope**

This activity provides for expansion of ERDF cells to meet the needs for PRC waste disposal; including haul road expansion and monitoring well relocation.

Scope is:

- Design the new cell.
- Obtain revised permitting for the cell.
- Award the construction contract.
- Procure the equipment needed (liner, leachate pumps, piping, etc)
- Perform the construction, which includes installation of the liner and leachate pumping.
- Connect the leachate systems to the existing leachate system.
- Perform acceptance testing and turnover to operating staff.

Support and management of the cell construction is included.
### CWBS Dictionary Sheet

**CWBS Number**  
RL-0013.10.01.01

**CWBS Title**  
Construct ERDF Supercell 11

### Scope

This activity provides for expansion of ERDF cells to meet the needs for PRC waste disposal: including haul road expansion.

**Scope is:**
- Design the new cell.
- Obtain revised permitting for the cell.
- Award the construction contract.
- Procure the equipment needed (liner, leachate pumps, piping, etc)
- Perform the construction, which includes installation of the liner and leachate pumping.
- Connect the leachate systems to the existing leachate system.
- Perform acceptance testing and turnover to operating staff.
- Expand the haul road as required to allow truck and container access to the cell.

Support and management of the cell construction is included.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
**Scope**

This activity provides for expansion of ERDF cells by monitoring well relocation.

Scope is:
- Determine where to drill new monitoring well(s).
- Deactivate existing wells no longer needed.
- Drill new monitoring well(s).
- Perform acceptance testing on the well(s) and turn over to operations.

Support and management of the well reloaction is included.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
This scope covers all work required to maintain the Environmental Restoration and Disposal Facility (ERDF) as a status to receive disposal waste from Hanford sites. ERDF is a CERCLA licensed facility.

**Scope**

- Receive and dispose of waste. This includes all support functions needed and infrastructure for ERDF operation.
- Operation of haul trucks. This includes maintenance of the trucks, maintenance of containers, and purchase of new trucks/containers as needed.
- Equipment maintenance.
- Leachate collection operations, specifically collection sampling, analysis, and pumping to treatment facilities.
- Lysimeter operation.
- Road maintenance.
- Air monitoring operation.
- Groundwater monitoring well sampling and analysis.

This containers are:
- ERDF Cans,
- ERDF roll off "flats".

Trucks are:
- Shuttle trucks (for hauling the ERDF Cans from the D4 facilities and waste sites to ERDF)
- "Super' dump trucks to support our non-DOT regulated streams that will be shipped to ERDF.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**Scope**
This scope covers all work required for receipt of waste delivered to ERDF and subsequent disposal of that waste at ERDF. ERDF is a CERCLA licensed facility.

Scope:
- Receipt and dispose of waste. This includes receipt surveys, record keeping, and all other administrative functions.
- Operation of compaction equipment at ERDF.
- Operation of all back-fill equipment.
- Obtaining back-fill material. Back-fill material is typically soil (preferably contaminated soil) dumped in along with the waste to cover it over. Backfill is typically one-to-one in volume with the waste, except when the waste is large steel debris (e.g., piping) in which the backfill is two-to-one, fill to waste volume.
- Operation of all compaction measuring instruments.
- All support functions. This includes:
  - Environmental permit maintenance and revision,
  - Safety basis implementation,
  - All procedure preparation and implementation,
  - Management,
  - Field supervision,
  - Work control,
  - Safety personnel: health physics technicians, industrial hygiene staff, etc.
  - Radiation protection support (health physics, surveys, reports, exposure records, etc),
  - All training specific to the facility,
  - Procurement activities.
- Maintenance of trucks.
- Maintenance of containers.
- Purchase of new trucks or containers as needed.
- Infrastructure for ERDF operation (maintenance of office trailers, water, sanitation, electrical distribution within the facility, etc).

This contains are:
- ERDF Cans,
- ERDF roll off "flats".

Trucks are:
- Shuttle trucks (for hauling the ERDF Cans from the D4 facilities and waste sites to ERDF), or
- "Super" dump trucks to support our non-DOT regulated streams that will be shipped to ERDF.

**Exclusions:**
- ERDF road maintenance.
- Operation of the leachate collection system.
- Operation of the monitoring wells.
- Lysimeter operation.
- Operation of air monitors.

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
<table>
<thead>
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<th>CWBS Title</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>CWBS Number</td>
<td>CWBS Title</td>
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<tr>
<td>RL-0013.10.02.02</td>
<td>Waste Transport to ERDF</td>
</tr>
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**Scope**

This scope covers all work to transport waste to ERDF. ERDF is a CERCLA licensed facility.

Scope is the operation of the haul trucks:
- Operation of haul trucks to deliver waste from other areas to ERDF. This includes:
  - Obtaining drivers licensed to transport waste to ERDF.
  - Fuel for the trucks.
  - Dumping the container contents into ERDF.
  - Dumping backfill material needed for compaction.

This containers are:
- ERDF Cans,
- ERDF roll off "flats".

Trucks are:
- Shuttle trucks (for hauling the ERDF Cans from the D4 facilities and waste sites to ERDF)
- Super dump trucks to support our non-DOT regulated streams that will be shipped to ERDF.

Exclusion:
- Maintenance of the trucks.
- Maintenance of the containers.
- Loading the containers with waste.
- Compaction of the waste debris after dumping.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
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<th>CWBS Number</th>
<th>RL-0013.10.02.03</th>
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<tbody>
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<td>CWBS Title</td>
<td>ERDF Equipment Maintenance</td>
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</table>

**Scope**

This scope covers maintenance of ERDF equipment, corrective maintenance, and surveillance and planned maintenance of ERDF equipment, including that required by environmental permits. ERDF is a CERCLA licensed facility.

**Scope:**
- Performance of all surveillance activities required.
- Performance of all preventative maintenance required.
- Performance of all corrective maintenance.
- Repairs to all monitoring equipment, including air monitors, groundwater monitoring wells, and lysimeters.
- Repairs to leachate collection system equipment.

**Exclusions:**
- ERDF road maintenance.
- ERDF Truck maintenance.
- ERDF Container maintenance.
- ERDF upgrades, if any.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Scope
This scope covers all operation of the leachate collection system. ERDF is a CERCLA licensed facility.

ERDF cells are lined. Underneath the cell liners is a web of collection piping to collect liquid draining down through the cell. The drainage is pumped out by liner sump pumps and is routed through heat traced piping to collection tanks. The collected leachate is then sampled periodically before the collections tanks are full. If the leachate meets acceptance criteria, the liquid is pumped to the 200 West pump and treat system. There, it passes through filters and ion exchange columns and eventually pumped into the ground.

**Scope:**
- Operation of the leachate pumps and collection tanks.
- Leachate sampling and analysis.
- Leachate collection pump and treat.

**Exclusions:**
- Leachate pump maintenance.
- Repairs to leachate collection equipment, collection tanks, and instruments.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
**Scope**

This scope covers operation of ERDF lysimeter.

ERDF is a CERCLA licensed facility.

**Scope:**
- Operation of the Lysimeter, including routine readings.
- Additional Lysimeter, should that ever be required.
- Relocation of the existing lysimeter.

**Exclusions:**
- Repair to the ERDF lysimeter.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**Scope**

This scope covers maintenance of all roads within the ERDF facility. ERDF is a CERCLA licensed facility.

- Maintain access roads within the ERDF facility.
- Maintain ramp road down into the active cell.

**Exclusions:**
- Maintenance of any road outside of the ERDF "fence" (facility boundary).

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<tr>
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<th>RL-0013.10.02.07</th>
<th>CWBS Title</th>
<th>ERDF Air Monitoring</th>
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</table>

**Scope**
This scope covers operation of ERDF air monitor(s). ERDF is a CERCLA licensed facility.
Scope:
• Operation of the air monitors, including routine readings.
• Additional air monitors, should that ever be required.
• Relocation of the existing monitors.
Exclusions:
• Repair to the ERDF air monitors.

**Assumptions**
**Requirements**
1. See higher level WBS level for additional requirements.
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<td>RL-0013.10.02.08</td>
<td>ERDF Groundwater Monitoring Wells Sampling and Analysis</td>
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</tbody>
</table>

**Scope**
This scope covers operation of ERDF air monitor(s). ERDF is a CERCLA licensed facility.

Scope:
- Operation of the ERDF wells, including routine readings, if any
- Installation of additional wells around existing cells, should that ever be required.
- Sampling well water and analysis of the sample.

Exclusions:
- Repair to monitoring wells.
- Drilling of monitor wells around a new cell added to ERDF (e.g., Supercell 11).

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
Scope

Perform all activities necessary to dispose of waste at IDF. The Contractor shall maintain the facility in a ready-to-serve status to execute the work scope and to receive/treat/dispose waste in support of Hanford remediation activities consistent with the waste acceptance criteria. 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 proposed waste volume projections and service provider approach shall be subject to periodic DOE review and approval.

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.

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.

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 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.

Assumptions

1. ORP will be responsible for preparation and approval of the performance assessment (PA) and disposal authorization statement.
2. IDF will be ready for disposal such that LAW treatment operations will not be impacted.
3. Both IDF pits will be licensed under RCRA.
5. Once IDF begin operations approximately 300 ILAW containers of non-rad hazardous waste generated during LAW Vitrification Facility Cold Commissioning would be disposed of at IDF.
6. Starting in FY2022, vitrified waste will be generated at a rate of 3.5 containers per day, 365 days a years, and will be disposed of at IDF in ILAW Containers (1.22 meter diameter X 2.3 meter height).
7. Approximately 675 m3/year of grouted Liquid Waste from LERF/ETF will be disposed as MLLW at IDF in 55 gallon drums (.257 m3/drum).
8. Approximately 1500 m3 of treated debris MLLW and LLW from WTP operations, Tank Farms, and other on-site RCRA generated waste will be disposed of at IDF annually in assorted drums and boxes. This includes debris waste such as HEPA Filters, LAW Carbon beds, worker’s personal protective equipment, tools, pumps, etc.
9. LAW melters from WTP will be treated and disposed of as MLLW at IDF. One melter will be disposed every 2.5 years.
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42. 42 USC 7401; Clean Air Act
43. WAC 46-48; Transportation Of Hazardous Materials
44. WAC 173-303; Dangerous Waste Regulations
45. WAC 173-304; Minimum Function Standards for Solid Waste Handling
46. WAC 173-340; Model Toxics Control Act -- Cleanup
47. WAC 173-400; General Regulations For Air Pollution Sources
48. WAC 173-401; Operating Permit Regulation
49. WAC 173-460; Controls for New Sources of Toxic Air Pollutants
50. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide
51. WAC 246-247; Radiation Protection -- Air Emissions
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<tr>
<td>• Hire staff to operate the IDF.</td>
</tr>
<tr>
<td>• Train the staff hired.</td>
</tr>
<tr>
<td>• Complete modifications needed to accept glass logs and waste and melters from the Office of River Protection.</td>
</tr>
<tr>
<td>• Revise regulatory permits, etc to allow intended purpose of the IDF.</td>
</tr>
<tr>
<td>• Perform facility startup. This includes an operational readiness review.</td>
</tr>
<tr>
<td>IDF will primarily be used for Immobilized Low Activity Waste from the Waste Treatment Plant. This includes but is not limited to obtaining and training staff, preparation and approval of regulatory and nuclear safety documentation (RCRA permit, DSA/TSRs/SER, PA and disposal authorization statement), preparation and approval of operation/maintenance/other procedures, and performing an operational readiness review.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Assumptions</th>
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<tbody>
<tr>
<td>Requirements</td>
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<tr>
<td>1. See higher level WBS level for additional requirements.</td>
</tr>
</tbody>
</table>
**CWBS Number**
RL-0013.12.01.01

**CWBS Title**
Integrated Disposal Facility Staff Ramp-Up

### Scope
Project staff at the time IDF operations will commence will be inadequate to perform the IDF scope. Therefore, additional staff must be brought in to perform the work. The new staff may or may not have significant radiological work experience. In any event, the IDF staff will have to be hired. The scope consists of:

- Obtain personnel for IDF activities.
- The staff may be direct-hired, or
- The work is sub-contracted and the subcontractor hires or supplies their own staff to perform the IDF work.
- Train personnel so that they can be Hanford workers trained for IDF operations.

After hiring, the additional staff hired must be trained for waste IDF operations. This training scope is:

- General Hanford access training (Hanford general employee training or equivalent). This allows access to the Hanford site.
- Training for IDF work scope. This involves:
  - IDF procedures training. This covers waste IDF and how it is operated.
  - Hazardous worker training.
  - IDF equipment training so the staff can operate the IDF equipment.
  - Waste handling training.
  - Record keeping training so that staff can record the waste and its disposition.
  - Work control training (compliance with work packages, supervisor and organizational hierarchy, etc.
  - Other related training as required.
  - Facility training (IDF familiarization).
  - Emergency procedures and response training.
  - Abnormal occurrence training (e.g., what to do with a waste container not in the condition typical).
  - Work process training. This covers work packages compliance, radiation protection compliance, industrial hygiene compliance, etc.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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</thead>
<tbody>
<tr>
<td>RL-0013.12.01.02</td>
<td>Integrated Disposal Facility Operational Readiness Review</td>
</tr>
</tbody>
</table>

**Scope**
Perform facility startup. This includes an operational readiness review.

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
Scope
The scope consists of:
• Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
  • compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
  • compliance with all environmental permits and regulations applicable to the facility;
  • compliance with all agreed orders issued to the facility or other direction.
• Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
• Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
• Providing corrective actions for adverse trends specific to the facility.
• Maintaining all required environmental records and permits.
• Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
• Sampling and sample analysis associated with the air operating permit.
• Trend analysis of the air operating permit sample analysis results, if applicable.
• Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
• Participation in site work site assessments as required.
• Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
• Environmental Control Officer (ECO) or equivalent review and input to procedures.
• ECO's radioactive emission calculations.
• Developing data for compliance reports
• Compliance with waste acceptance criteria (WAC), performance assessment (PA), and the waste incidental to Reprocessing (WIR).
Exclusion:
• All min-safe work (WBS 013.12.50).

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.12.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWBS Title</td>
<td>Integrated Disposal Facility Ready-to-Serve</td>
</tr>
</tbody>
</table>

**Scope**

This provides IDF activities necessary to actually receive waste beyond the Min Safe scope (WBS 013.12.50). The scope is:

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
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<tbody>
<tr>
<td>RL-0013.12.04</td>
<td>Integrated Disposal Facility Upgrades</td>
</tr>
</tbody>
</table>

**Scope**

This provides upgrades to IDF to address the operability of the facility, provide operational layers, and/or expand IDF. However, the specific upgrades have not been identified yet. Scope also includes any upgrades to support IDF disposal operations (e.g., trailers, parking, utilities, receiving/storage areas). The specific upgrades of this have not been identified yet, either.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.12.04.01</td>
<td>Integrated Disposal Facility Occupancy (Trailers, Parking, Utilities, etc)</td>
</tr>
</tbody>
</table>

**Scope**

Scope also includes any upgrades to support IDF disposal operations (e.g., trailers, parking, utilities, receiving/storage areas). The specific upgrades of this have not been identified. At least one trailer will need to be put into place.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Assumptions
1. See higher level WBS level for additional requirements.

### Requirements

### Scope
This provides upgrades to IDF to address the operability of the facility, provide operational layers, and/or expand IDF. However, the specific upgrades have not been identified yet.
Scope

The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

1. Facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;
2. Facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;
3. Keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;
4. Maintain controls consistent with its safety basis and safety support documents; and,
5. Protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consists of:
- Surveillance
- Maintenance
- Quality Assurance,
- Training,
- Engineering,
- Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
- Environmental compliance,
- Other support.
- Facility Supervision,
- Work Control, and
- Radiation protection.

Excluded from this scope is:
Preparation of safety analysis documents (covered in a separate WBS element in general administration).

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.12.50</td>
<td>Integrated Disposal Facility Min Safe</td>
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</tbody>
</table>
**CWBS Number**
RL-0013.12.50.01

**CWBS Title**
Integrated Disposal Facility Surveillance

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**Scope**

Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status.

Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents.

Surveillance includes:

- Routine recording of instrument reading or performance required by surveillance plans.
- Routine testing/checking/verification of environmental instruments.
- Routine testing/checking/verification of safety instruments.
- Functional testing or calibration of instrumentation.
- Radiological surveys required by permits or DSA.
- Environmental surveys required by permits or DSA.
- Safety inspections required by integrated safety management plans or other.
- Fire inspections.
- Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

**Scope exclusion:**

- All maintenance activities, including repair to M and T E and any other surveillance instruments.
- Preventative maintenance (PM) items.

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**Assumptions**

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**Requirements**

1. See higher level WBS level for additional requirements.
<table>
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<th>CWBS Number</th>
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<tbody>
<tr>
<td>RL-0013.12.50.01</td>
<td>Integrated Disposal Facility Surveillance</td>
</tr>
</tbody>
</table>
## Scope

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.

Maintenance consists of the following:

- All Corrective maintenance (CM) work (repairs).
- All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
- All repairs or replacement of failed or failing equipment or obsolete equipment.
- All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
- Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
- Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

## Assumptions

## Requirements

1. See higher level WBS level for additional requirements.
**Scope**

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met. The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.
- Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design.

Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
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<th>CWBS Number</th>
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<tbody>
<tr>
<td>RL-0013.12.50.03</td>
<td>Integrated Disposal Facility Quality Assurance</td>
</tr>
</tbody>
</table>
Scope
The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:
• Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
• Training is provided on facility orientation.
• Training is provided on general employee training and site access. The training content may be provided by others.
• Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
• Training is provided on Integrated Safety Management System/Environmental Management.
• Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
• Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
• Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
• Maintaining of all facility training records.
• Facility personnel "seat time" during the training.
• Training course fees.
• Facility specific training curriculum updates.

Exclusion:
This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
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<th><strong>CWBS Number</strong></th>
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<tr>
<td>RL-0013.12.50.05</td>
<td>Integrated Disposal Facility Engineering</td>
</tr>
</tbody>
</table>

**Scope**

Scope consists of:

- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

**Exclusion:**

Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0013.12.50.06</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>Integrated Disposal Facility RCRA Compliance Waste Management Enhancements</td>
</tr>
</tbody>
</table>

### Scope
All scope associated with RCRA compliance waste management enhancements.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
## Scope
Support to facility management for implementation of the environmental program. The scope consists of:

- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
  - Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
  - Compliance with all environmental permits and regulations applicable to the facility;
  - Compliance with all agreed orders issued to the facility or other direction.
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and input to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports.
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

### Exclusion:
All scope associated with RCRA compliance waste management enhancements.

## Assumptions

## Requirements
1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.12.50.08</td>
<td>Integrated Disposal Facility Other Support</td>
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</table>

**Scope**

Other facility support scope consists of the following:

- Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
- Facility criticality controls and implementation, and oversight, as required.
- Implementation of safeguards and security requirements for material accountability, if applicable.
- All other facility safety basis implementation, and oversight, as required.
- Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/modification review, and facility technical support. All as required.
- Administration of facility specific procurements.
- Industrial hygiene and occupational safety.
- All facility specific waste management activities.
- Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
- Facility staff and visitor time spend participating in emergency drills.
- Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
- Facility cost records maintenance and record keeping, except when performed by a central group.
- Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
- Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
- Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
- Facility assessments, including management assessments of the facility.
- Facility corrective action management.
- All contract issues bearing on the facility, unless performed by a central group.
- General housekeeping services.
- Hoist and rigging, except when provided by a central pool.
- Vehicle maintenance and provisioning, including supplying vehicles of any description, except when provided by a central pool.
- General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
- Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
- Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
- Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
- Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

**Exclusions:**

The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<thead>
<tr>
<th>CWBS Number</th>
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<tr>
<td>RL-0013.12.50.08</td>
<td>Integrated Disposal Facility Other Support</td>
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<tr>
<td>CWBS Number</td>
<td>Integrated Disposal Facility Supervision</td>
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<td>RL-0013.12.50.09</td>
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</table>

**Assumptions**

Requirements

1. See higher level WBS level for additional requirements.

**Scope**

Facility supervision scope is:

- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.
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<tr>
<th>CWBS Number</th>
<th>RL-0013.12.50.10</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>Integrated Disposal Facility Work Control</td>
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</tbody>
</table>

**Scope**

Facility work control scope is:

- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
## Scope
Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.

**Facility scope consists of:**
- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment of radiation controls.
- Compliance with radioactive regulations at the facility.
- HealthPhysicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

## Assumptions

## Requirements
1. See higher level WBS level for additional requirements.
Assumptions
1. Maintaining non-destructive examination and assay systems within the 2336-W Building will be part of Waste Receiving and Processing Facility (WRAP) operations.
2. Maintaining Super HENC (Super High Energy Neutron Counter) capabilities will be part of Waste Receiving and Processing Facility (WRAP) operations.
3. Maintaining High Energy Real Time Radiography (HERTR) capabilities will be part of Waste Receiving and Processing Facility (WRAP) operations.
4. Maintaining loading capabilities within the 2336-W Building will be part of Waste Receiving and Processing Facility (WRAP) operations.
5. RH TRU Waste will be loaded into RH-72Bs for shipment to WIPP.
6. CH TRU Waste will be loaded into TRUPACT-IIs for shipment to WIPP.

Requirements
1. 10 CFR 71; Packaging And Transportation Of Radioactive Material
2. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
3. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
4. 10 CFR 824; Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations
5. 10 CFR 835; Occupational Radiation Protection
6. 10 CFR 850; Chronic Beryllium Disease Prevention Plan
7. 10 CFR 851; Worker Safety and Health Program
8. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
9. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
10. 29 CFR 1910; Occupational Safety And Health Standards
11. 40 CFR 60.150; Standards Of Performance For New Stationary Sources
12. 40 CFR 61; National Emission Standards for Hazardous Air Pollutants
13. 40 CFR 261; Identification and Listing of Hazardous Waste
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<td>14. 40 CFR 262; Standards Applicable To Generators Of Hazardous Waste</td>
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<td>15. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities</td>
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<td>16. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities</td>
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<td>17. 40 CFR 302; Designation, Reportable Quantities, and Notification</td>
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<td>18. 40 CFR 355; Emergency Planning And Notification</td>
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<td>19. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know</td>
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<td>20. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know</td>
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<td>21. 40 CFR 761; Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and use Prohibitions</td>
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<td>22. 40 CFR 763; Asbestos</td>
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<td>23. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs</td>
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<td>24. 49 CFR 107; Hazardous Materials Program Procedures</td>
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<td>25. 49 CFR 130; Oil Spill Prevention and Response Plans</td>
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<td>26. 49 CFR 171; General Information, Regulations, and Definitions</td>
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<td>28. 49 CFR 173; Shippers -- General Requirements for Shipments and Packagings</td>
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<td>29. 49 CFR 177; Carriage by Public Highway.</td>
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<td>30. 49 CFR 178; Specifications For Packagings</td>
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<td>31. 49 CFR 179; Specifications For Tank Cars</td>
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<td>32. 49 CFR 180; Continuing Qualification And Maintenance Of Packagings</td>
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<td>33. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties</td>
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<td>34. 49 CFR 385; Safety Fitness Procedures</td>
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<td>35. 49 CFR 387; Minimum Levels Of Financial Responsibility For Motor Carriers</td>
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<td>36. 49 CFR 390; Federal Motor Carrier Safety Regulations: General</td>
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<td>40. 49 CFR 395; Hours Of Service Of Drivers</td>
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<td>41. 49 CFR 396; Inspection, Repair and Maintenance</td>
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<td>42. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules</td>
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<td>43. 42 USC 2011-2259; Atomic Energy Act of 1954, as amended</td>
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<td>44. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976</td>
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<td>45. 42 USC 7401; Clean Air Act</td>
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<td>46. 44 USC 3105; Safeguards</td>
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<td>47. WAC 46-48; Transportation Of Hazardous Materials</td>
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<td>48. WAC 173-303; Dangerous Waste Regulations</td>
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<td>49. WAC 173-304; Minimum Function Standards for Solid Waste Handling</td>
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<td>50. WAC 173-340; Model Toxics Control Act -- Cleanup</td>
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<td>51. WAC 173-400; General Regulations For Air Pollution Sources</td>
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<td>54. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide</td>
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56. 00-05-006; Air Operating Permit (AOP)
57. Hanford Site Air Operating Permit
58. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document
59. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document
60. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)
61. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan
62. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document
63. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment
64. RRD 005, Rev 3; Worker Safety
65. RRD 007; Chronic Beryllium Disease Prevention Program
66. RRD 008, Rev 3; Quality Assurance Program Requirements
67. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
68. DOE O 435.1, Radioactive Waste Management, latest version.
71. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
72. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
73. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
74. RL SER for the latest implemented revision of HNF-11724.
75. Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement), M-091 milestone series.
### CWBS Number
RL-0013.15.01

### CWBS Title
Central Characterization Project (CCP) Support

### Scope
Provide support to the Carlsbad Field Office (CBFO)/Central Characterization Project (CCP) to certify TRU waste (contact-handled (CH) – approximately 18,800 m³, remote-handled (RH) – approximately 3,750 m³. Provide support to CBFO/CCP to load transportation containers (e.g., TRUPACT-IIs, RH-72Bs) and make approximately 2,800 CH TRU waste shipments and 3,650 RH TRU waste shipments to the Waste Isolation Pilot Plant (WIPP).

Volume and shipment figures are based on 09/30/16 estimates. Support includes:
- Providing characterization data to CPP including acceptable knowledge and sampling/analysis data.
- Performing head-space gas sampling and analysis.
- Physical movement of TRU waste.
- Loading CH and RH TRU waste into shipping containers (e.g., TRUPACT-IIs, RH-72Bs).

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
5. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
6. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
7. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
8. RL SER for the latest implemented revision of HNF-11724.
## Scope

Provide support to the Carlsbad Field Office (CBFO)/Central Characterization Project (CCP) to certify contact-handled (CH) TRU waste (approximately 18,800 m³). Provide support to CBFO/CCP to load transportation containers (e.g., TRUPACT-IIs) and make approximately 2,800 CH TRU waste shipments to the Waste Isolation Pilot Plant (WIPP).

Volume and shipment figures are based on 09/30/16 estimates. Support includes:

- Providing characterization data to CPP including acceptable knowledge and sampling/analysis data
- Performing head-space gas sampling and analysis
- Physical movement of TRU waste
- Loading CH TRU waste into shipping containers (e.g., TRUPACT-IIs).

## Assumptions

1. See higher level WBS level for additional requirements.
5. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
6. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
7. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
8. RL SER for the latest implemented revision of HNF-11724.
### CWBS Number
RL-0013.15.01.02

### CWBS Title
Central Characterization Project Support for Remote Handled TRU

### Scope
Provide support to the Carlsbad Field Office (CBFO)/Central Characterization Project (CCP) to certify RH TRU waste (approximately 3,750 m³). Provide support to CBFO/CCP to load transportation containers (e.g., RH-72Bs) and make approximately 3,650 RH TRU waste shipments to the Waste Isolation Pilot Plant (WIPP).

Volume and shipment figures are based on 09/30/16 estimates. Support includes:
- Providing characterization data to CPP including acceptable knowledge and sampling/analysis data.
- Performing head-space gas sampling and analysis as necessary.
- Physical movement of RH TRU waste.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
5. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
6. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
7. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
8. RL SER for the latest implemented revision of HNF-11724.
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<td>Establish Loading to Ship Capability</td>
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**Scope**

Scope: Obtain additional contact-handled (CH) TRU waste loading capabilities to meet Tri-Party Agreement (TPA) and other commitments. Obtain remote-handled (RH) TRU waste loading capabilities to meet TPA and other commitments. There will be approximately 2,800 CH TRU waste shipments and 3,650 RH TRU waste shipments to the Waste Isolation Pilot Plant (WIPP).

Volume and shipment figures are based on 09/30/16 estimates.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
5. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
6. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
7. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
8. RL SER for the latest implemented revision of HNF-11724.
11. DOE Order 425.1D, Verification of Readiness to Start-Up or Restart Nuclear Facilities.
# Establish Remote Handled Shipping Capability to WIPP

**Scope**

Obtain remote-handled (RH) TRU waste loading capabilities to meet TPA and other commitments. There will be approximately 3,650 RH TRU waste shipments to the Waste Isolation Pilot Plant (WIPP). Volume and shipment figures are based on 09/30/16 estimates.

**Assumptions**

1. See higher level WBS level for additional requirements.
5. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
6. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
7. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
8. RL SER for the latest implemented revision of HNF-11724.
11. DOE Order 425.1D, Verification of Readiness to Start-Up or Restart Nuclear Facilities.
**CWBS Number**
RL-0013.15.02.02

**CWBS Title**
Additional Contact Handled (CH) Shipping Capability to WIPP

**Scope**
Obtain additional contact-handled (CH) TRU waste loading capabilities to meet Tri-Party Agreement (TPA) and other commitments. There will be approximately 2,800 CH TRU waste shipments to the Waste Isolation Pilot Plant (WIPP).

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
5. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
6. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
7. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
8. RL SER for the latest implemented revision of HNF-11724.
11. DOE Order 425.1D, Verification of Readiness to Start-Up or Restart Nuclear Facilities.
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<tr>
<td>CWBS Title</td>
<td>Certification Failure Processing</td>
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**Scope**

There will be approximately 2,800 CH TRU waste shipments and 3,650 RH TRU waste shipments to the Waste Isolation Pilot Plant (WIPP). A certain percentage of drums or containers, whether contact- or remote-handled, will fail certification. These drums/containers must then be transported back to a processing facility to be re-processed so that they can be certified and then shipped to WIPP. The percentage of failures may be as high as 25% of the TRU drums/containers.

Scope is as follows:
- Segregate the failed drum/container from the others.
- Transport the drum/container to a processing facility.
- Repackage or treat the drum/container's contents.
- Survey the drum/container again to determine if it complies with the WIPP waste acceptance criteria.
- Transport the drum/container back to the shipping facility.
- Repeat the certification process with the drum/container.

Volume and shipment figures are based on 09/30/16 estimates.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
5. Technical Safety Requirements (TSRs) for the Solid Waste Operations Complex, HNF 15280, latest revision.
6. RL Safety Evaluation Report (SER) for the latest revisions of the MDSA and the TSRs.
7. CH2M HILL Plateau Remediation Company Safety Management Programs, HNF-11724, latest implemented revision.
8. RL SER for the latest implemented revision of HNF-11724.
Scope

This WBS provides for the safe, complaint operation and maintenance of the Low Level Burial Grounds (LLBG) in the 200 East and 200 West areas of the Hanford Nuclear Reservation. Specifically, burial grounds:
- 218-W-4C
- 218-W-4B
- 218-W-3A
- 218-W-3AE
- 218-W-5
- 218-W-6
- 218-E-10, and
- 218-E-12B.

None of these burial grounds receives new waste. The only activity is maintaining min-safe conditions.

Work may include placement of cover material over burial ground selected Contamination Areas with the purpose to progress toward conversion to Underground Radiological Material Areas. This includes 20 acres of 218-W-3AE (Large CA) (200 West) and 218-W-3A (North of RBA).

The generic low-level waste (LLW) flat-bottom trench nominally ranges from 5.2 m (17 ft) to 20 m (65 ft) deep. An engineering analysis is performed for trenches over 6.1 m (20 ft) deep to ensure that the slopes will remain stable during the trench’s operational life. Bottom dimensions range from 4.9 m (16 ft) to over 30 m (100 ft) wide. Trench slopes are normally 1.5H:1V to avoid sloughing of the trench walls.

LLW and mixed low-level waste (MLLW) were generally received, packaged in 208 L (55-gal) steel drums and wood or steel boxes. Concrete burial vaults, other inherently stable waste packages, and low-activity bulk wastes were also be disposed of. Concrete drag-off boxes have been used for wastes that exceed 200 mrem/hr surface radiation dose rate. The drag-off boxes, which were up to approximately 61.5 m3 (2,170 ft3) in volume, were transported to a trench by a flatbed railroad car or truck. These operations are not currently performed in the LLBG, with the exceptions noted above.

Exclusions:
Scope specifically excluded is the two mixed waste trenches (31 and 34) and the Naval reactor compartment disposal trench (Trench 94).

Assumptions

Requirements

1. See lower level WBS level for additional requirements.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
4. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
5. 10 CFR 835; Occupational Radiation Protection
6. 10 CFR 850; Chronic Beryllium Disease Prevention Program
7. 10 CFR 851; Worker Safety and Health Program
8. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
9. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
10. 29 CFR 1910; Occupational Safety And Health Standards
11. 29 CFR 1926; Safety And Health Regulations For Construction
12. 40 CFR 60.150; Standards Of Performance For New Stationary Sources
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<td>CWBS Title</td>
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13. 40 CFR 61; National Emission Standards for Hazardous Air Pollutants
15. 40 CFR 262; Standards Applicable To Generators Of Hazardous Waste
16. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
17. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
18. 40 CFR 268; Land Disposal Restrictions
19. 40 CFR 302; Designation, Reportable Quantities, and Notification
20. 40 CFR 355; Emergency Planning And Notification
21. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know
22. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know
23. 40 CFR 763; Asbestos
24. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs
25. 49 CFR 130; Oil Spill Prevention and Response Plans
26. 49 CFR 107; Hazardous Materials Program Procedures
27. 49 CFR 171; General Information, Regulations, and Definitions
29. 49 CFR 173; Shippers -- General Requirements for Shipments and Packagings
30. 49 CFR 178; Specifications For Packagings
31. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties
32. 49 CFR 385; Safety Fitness Procedures
33. 49 CFR 387; Minimum Levels Of Financial Responsibility For Motor Carriers
34. 49 CFR 390; Federal Motor Carrier Safety Regulations: General
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38. 49 CFR 395; Hours Of Service Of Drivers
39. 49 CFR 396; Inspection, Repair and Maintenance
40. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules
41. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976
42. 42 USC 7401; Clean Air Act
43. WAC 46-48; Transportation Of Hazardous Materials
44. WAC 173-303; Dangerous Waste Regulations
45. WAC 173-304; Minimum Function Standards for Solid Waste Handling
46. WAC 173-340; Model Toxics Control Act -- Cleanup
47. WAC 173-400; General Regulations For Air Pollution Sources
48. WAC 173-401; Operating Permit Regulation
49. WAC 173-460; Controls for New Sources of Toxic Air Pollutants
50. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide
51. WAC 246-247; Radiation Protection -- Air Emissions
52. 00-05-006; Air Operating Permit (AOP)
53. Hanford Site A Operating Permit
54. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document
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55. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document  
56. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)  
57. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan  
58. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document  
59. DOE/RL-09-89, Rev 0; Transportation Hazards Survey and Emergency Planning Hazards Assessment  
60. RRD 005, Rev 3; Worker Safety  
61. RRD 007; Chronic Beryllium Disease Prevention Program  
62. RRD 008, Rev 3; Quality Assurance Program Requirements  
63. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure
Assumptions
Requirements
1. See higher level WBS level for additional requirements.
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**Scope**

The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

1. Facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;
2. Facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;
3. Keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;
4. Maintain controls consistent with its safety basis and safety support documents; and,
5. Protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consists of:

- Surveillance
- Maintenance
- Quality Assurance,
- Training,
- Engineering,
- Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
- Environmental compliance,
- Other support,
- Facility Supervision,
- Work Control, and
- Radiation protection.

Excluded from this scope is:
Preparation of safety analysis documents (covered in a separate WBS element in general administration).

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
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<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.20.50</td>
<td>Low Level Burial Grounds Min Safe</td>
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</tbody>
</table>
Scope

Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer’s recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status.

Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents. Surveillance includes:

- Routine recording of instrument reading or performance required by surveillance plans.
- Routine testing/checking/verification of environmental instruments.
- Routine testing/checking/verification of safety instruments.
- Routine testing/verification of facility equipment (e.g., HEPA filters, fans, rollup doors).
- Functional testing or calibration of instrumentation.
- Radiological surveys required by permits or DSA.
- Environmental surveys required by permits or DSA.
- Safety inspections required by integrated safety management plans or other.
- Fire inspections.
- Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:

- All maintenance activities, including repair to M and TE and any other surveillance instruments.
- Preventative maintenance (PM) items.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.20.50.01</td>
<td>Low Level Burial Grounds Surveillance</td>
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</tbody>
</table>
## Scope

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.

Maintenance consists of the following:

- All Corrective maintenance (CM) work (repairs).
- All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
- All repairs or replacement of failed or failing equipment or obsolete equipment.
- All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
- Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
- Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

## Assumptions

## Requirements

1. See higher level WBS level for additional requirements.
Scope

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.
- Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design.
- Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<tr>
<td>RL-0013.20.50.03</td>
<td>Low Level Burial Grounds Quality Assurance</td>
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</table>
**CWBS Number**
RL-0013.20.50.04

**CWBS Title**
Low Level Burial Grounds Training

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**Scope**

The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:

- Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
- Training is provided on facility orientation.
- Training is provided on general employee training and site access. The training content may be provided by others.
- Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
- Training is provided on Integrated Safety Management System/Environmental Management.
- Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
- Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
- Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
- Maintaining of all facility training records.
- Facility personnel "seat time" during the training.
- Training course fees.
- Facility specific training curriculum updates.

**Exclusion:**

This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

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**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<tbody>
<tr>
<td><strong>CWBS Title</strong></td>
<td><strong>Low Level Burial Grounds Engineering</strong></td>
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</table>

### Scope
Scope consists of:
- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

Exclusion:
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
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<tr>
<th><strong>CWBS Number</strong></th>
<th>RL-0013.20.50.06</th>
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<tbody>
<tr>
<td><strong>CWBS Title</strong></td>
<td>Low Level Burial Grounds RCRA Compliance Waste Management Enhancements</td>
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</table>

**Scope**
- All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
### CWBS Number
RL-0013.20.50.07

### CWBS Title
Low Level Burial Grounds Environmental Compliance

#### Scope
Support to facility management for implementation of the environmental program. The scope consists of:
- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
  - Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
  - Compliance with all environmental permits and regulations applicable to the facility;
  - Compliance with all agreed orders issued to the facility or other direction.
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and input to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**
All scope associated with RCRA compliance waste management enhancements.

#### Assumptions

#### Requirements
1. See higher level WBS level for additional requirements.
CWBS Number
RL-0013.20.50.08

CWBS Title
Low Level Burial Grounds Other Support

Scope
Other facility support scope consists of the following:
• Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
• Facility criticality controls and implementation, and oversight, as required.
• Implementation of safeguards and security requirements for material accountability, if applicable.
• All other facility safety basis implementation, and oversight, as required.
• Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazards analysis implementation (FHA development/preparation is by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/modification review, and facility technical support. All as required.
• Administration of facility specific procurements.
• Industrial hygiene and occupational safety.
• All facility specific waste management activities.
• Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
• Facility staff and visitor time spend participating in emergency drills.
• Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
• Facility cost records maintenance and record keeping, except when performed by a central group.
• Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
• Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
• Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
• Facility assessments, including management assessments of the facility.
• Facility corrective action management.
• All contract issues bearing on the facility, unless performed by a central group.
• General housekeeping services.
• Hoist and rigging, except when provided by a central pool.
• Vehicle maintenance and provisioning, including supplying vehicles of any description, except when provided by a central pool.
• General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
• Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
• Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
• Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
• Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

Exclusions:
The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

Assumptions

Requirements
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<td>RL-0013.20.50.08</td>
<td>Low Level Burial Grounds Other Support</td>
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<td>RL-0013.20.50.09</td>
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<tr>
<td>CWBS Title</td>
<td>Low Level Burial Grounds Supervision</td>
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**Scope**

Facility supervision scope is:
- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**Scope**

Facility work control scope is:
- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

**Assumptions**

**Requirements**

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<table>
<thead>
<tr>
<th>Scope</th>
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<tbody>
<tr>
<td>Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.</td>
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<tr>
<td>Facility scope consists of:</td>
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<tr>
<td>• Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.</td>
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<tr>
<td>• Maintenance of facility radiation exposure records, unless performed by a central group.</td>
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<tr>
<td>• Conduct of routine radiation surveys, including air monitoring.</td>
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<tr>
<td>• Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.</td>
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<tr>
<td>• Documenting, storing, maintaining radiation surveys and review and approval of survey reports.</td>
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<tr>
<td>• Support to radioactive material handling, storing, and shipping.</td>
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<tr>
<td>• Development of facility radiation training and qualification materials.</td>
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<tr>
<td>• Monitoring of external and internal radiation exposure to facility staff.</td>
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<tr>
<td>• Establishment of respiratory protection for facility staff as required.</td>
</tr>
<tr>
<td>• Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.</td>
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<tr>
<td>• Establishment facility of radiation controls.</td>
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<tr>
<td>• Compliance with radioactive regulations at the facility.</td>
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<tr>
<td>• Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.</td>
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<tr>
<td>• Management of radiation protection activities.</td>
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</table>
**Scope**

The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

1. Facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;
2. Facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;
3. Keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;
4. Maintain controls consistent with its safety basis and safety support documents; and,
5. Protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consists of:
- Surveillance
- Maintenance
- Quality Assurance,
- Training,
- Engineering,
- Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
- Environmental compliance,
- Other support.
- Facility Supervision,
- Work Control,
- Radiation protection.

Excluded from this scope is:
Preparation of safety analysis documents (covered in a separate WBS element in general administration).

**Assumptions**

**Requirements**

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<td>Capsule Storage Area (CSA) Min Safe</td>
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CWBS Number
RL-0013.25.50.01

CWBS Title
Capsule Storage Area Surveillance

Scope
Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status. Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents.

Surveillance includes:
• Routine recording of instrument reading or performance required by surveillance plans.
• Routine testing/checking/verification of environmental instruments.
• Routine testing/checking/verification of safety instruments.
• Functional testing or calibration of instrumentation.
• Radiological surveys required by permits or DSA.
• Environmental surveys required by permits or DSA.
• Safety inspections required by integrated safety management plans or other.
• Fire inspections.
• Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:
All maintenance activities, including repair to M and T E and any other surveillance instruments.
Preventative maintenance (PM) items.

Assumptions

Requirements
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<td>Capsule Storage Area Surveillance</td>
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CWBS Number
RL-0013.25.50.02

CWBS Title
Capsule Storage Area Maintenance

Scope
The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs.

Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.

Maintenance consists of the following:
• All Corrective maintenance (CM) work (repairs).
• All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
• All repairs or replacement of failed or failing equipment or obsolete equipment.
• All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
• Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
• Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
### Scope

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures. Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.25.50.03</td>
<td>Capsule Storage Area Quality Assurance</td>
</tr>
<tr>
<td>Scope</td>
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<tr>
<td>The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.</td>
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<tr>
<td>Scope consists of:</td>
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<tr>
<td>• Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.</td>
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<tr>
<td>• Training is provided on facility orientation.</td>
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<tr>
<td>• Training is provided on general employee training and site access. The training content may be provided by others.</td>
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</tr>
<tr>
<td>• Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.</td>
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<tr>
<td>• Training is provided on Integrated Safety Management System/Environmental Management.</td>
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<tr>
<td>• Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.</td>
<td></td>
</tr>
<tr>
<td>• Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.</td>
<td></td>
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<tr>
<td>• Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.</td>
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</tr>
<tr>
<td>• Maintaining of all facility training records.</td>
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<tr>
<td>• Facility personnel &quot;seat time&quot; during the training.</td>
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<tr>
<td>• Training course fees.</td>
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<tr>
<td>• Facility specific training curriculum updates.</td>
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</tbody>
</table>

Exclusion: This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

<table>
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<tr>
<th>Assumptions</th>
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<td>Requirements</td>
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</table>

1. See higher level WBS level for additional requirements.
**CWBS Number**
RL-0013.25.50.05

**CWBS Title**
Capsule Storage Area Engineering

**Scope**
Scope consists of:
- Configuration management of the facility, including maintaining all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

**Exclusion:**
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Assumptions

1. See higher level WBS level for additional requirements.

### Requirements

All scope associated with RCRA compliance waste management enhancements.
CPCC CWBS DICTIONARY SHEET

<table>
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<tr>
<th>CWBS Number</th>
<th>RL-0013.25.50.07</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>Capsule Storage Area Environmental Compliance</td>
</tr>
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</table>

**Scope**

Support to facility management for implementation of the environmental program. The scope consists of:

- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
  - Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
  - Compliance with all environmental permits and regulations applicable to the facility;
  - Compliance with all agreed orders issued to the facility or other direction.
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and input to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Assumptions

1. See higher level WBS level for additional requirements.
<table>
<thead>
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<td>Capsule Storage Area Other Support</td>
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<tr>
<td>CWBS Number</td>
<td>RL-0013.25.50.09</td>
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<tr>
<td>CWBS Title</td>
<td>Capsule Storage Area Supervision</td>
</tr>
</tbody>
</table>

**Scope**

Facility supervision scope is:
- Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).
- Maintaining of employment records, except when provided by a central pool.
- Time sheet preparation, maintenance, record-keeping, and approvals.
- Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.
- Field work supervision.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Scope
Facility work control scope is:
- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
  Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
## CWBS Number
RL-0013.25.50.11

## CWBS Title
Capsule Storage Area Radiation Protection

### Scope
Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.

Facility scope consists of:

- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
**CWBS Number**
RL-0013.26

**CWBS Title**
Naval Reactors (NR) Burial

**Scope**
Hanford serves as a burial site for Naval reactor compartments removed from decommissioned ships and submarines. The reactor compartments are set in Burial Ground 218-E-12B, Trench 94 in 200 East. The Department of the Navy and its contractors perform the RC transport and placement operations. The reactors are received in a barge brought up the Columbia River and unloaded at a facility in north Richland. The compartment is then transported by truck and flat bed or other means from the barge slip to the disposal trench. Once there, the compartment is off-loaded into the proper location in Trench 94. Defueled RCs are composed of various types of steel and contains approximately 392 tons of lead shielding.

This WBS provides for disposal of U.S. Navy reactor compartment, other Naval equipment (e.g., reactor coolant pumps) and for the safe and compliant survey and maintenance of Burial Ground 218-E-12B, Trench 94 so as to be in a ready-to-serve status to 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.

ROD 69 FR 39449 did not affect disposal of the RCs. The trench is currently managed as a dangerous waste management unit by agreement with the Washington State Department of Ecology. The reactor compartments or other equipment require no maintenance. They may be painted at the expense of the military using local painters.

Trench improvements and support to the compartment moves (e.g., security, health physicists support, dust suppression) is also performed, but at the expense of the Navy.

**Mngt & Coordination (Navy & other Hanford support orgs)**
- Maintain list of on-call personnel for Hanford support organizations.
- Ensure Hanford boat is inspected once per year by Coast Guard Auxiliary.

**Prep for Delivery**
- Receive schedule from Navy and coordinate that schedule with Hanford organizations
- Review Navy's Landhaul Contractor planned work and safety procedures
- Prepare, approve, file, and maintain waste acceptance documentation
- Provide charge codes to Hanford organizations
- Prepare work control schedule
- Complete Preparation Checklist
- Obtain badges for Navy and Navy Contractor personnel
- Distribute Reactor Compartment receipt documentation (to Navy and Hanford organizations)
- Obtain oversized load permit
- Notify Hanford Patrol, HFD, Benton County Sheriff, POB, and DOE of transport and related road restrictions
- Obtain concurrence on transport route inspection documentation prior to transport
- Coordinate with MSA and the Tri-City Railroad to move rail-crossing lights on 4S
- Contract for portable toilets (1 north of Wye barricade and 2 at Trench 94)
- Verify Waste Specification Record is approved and issued
- Coordinate review of waste package to be within scope of Waste Specification Sheet and Waste Specification Record
- Ensure Hanford boat operator is compliant with AJHA # 662 General Boat Operations
- Contract with PNNL to have access to PNNL boat if needed
- Ensure transport is scheduled and Work Release has been issued
- Provide copy of PSNS radiological survey report to RAD Control
- Obtain a hot-work permit
- Prepare ORSR to authorize transport
- Arrange for scaffolding at Trench 94
- Remove debris from road medians along transport route
- Groom transport rout and Trench 94 ramp
- USQ - Work release for transport
- Determine Readiness and transmit notice to DOE
<table>
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<tr>
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<td>Naval Reactors (NR) Burial</td>
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</table>

**Transport & Receive**
- Boat Escort
- Provide communications equipment, safety vests, PPE, etc to Navy and Navy Contractor personnel
- Provide SWSD Contractor Facility Emergency and hazards Identification class (FEHIC) to Navy and Navy Contractor personnel
- Provide access control at POB
- Provide safety oversight at POB
- At POB, perform verification survey of Reactor Compartment and complete ORSR to authorize transport across Hanford
- Perform verification survey of the barge
- Verify proper labeling and placarding of waste package and transporter
- Establish traffic control
- Provide escort vehicle to transporter
- Provide a water truck to escort transporter
- Provide industrial safety oversight during transport
- Conduct Receipt Survey of Reactor Compartment by RAD Control
- Down-post RA/RMA at Trench 94
- Provide RAD Con escort of Navy and Navy Contractor personnel while at Trench 94
- Provide industrial safety oversight during placement in Trench 94 including inspection of scaffolding
- Receive and place Shear Blocks
- Receive and place Closure Head
- Receive and place Debris with lead dust
- Receive and place Misc drummed waste
- Sweep transport route to remove gravel scatted by passage of transporter
- Obtain concurrence on post-transport route inspection documentation
- On-call Safeguards and Security manager
- On-call Road Maintenance manager
- On-call Transportation manager

**Operate & Min Safe Burial Trench 94**
- Operate burial trench and provide operations support
- Provide housekeeping of Trench (no time limit specified)
- Perform visual inspection of Reactor Compartments in trench and identify if labels are weathered or missing and re-label if necessary. Re-install signs and changes if needed.
- Conduct Monthly Custodian Inspections
- Weekly RCRA Inspection
- Monthly RCRA Fire Extinguisher Inspection
- Monthly RCRA Telephone Inspection
- Monthly RCRA Windsock Inspection
- RCRA Significant Storm Event Inspection
- SW-W001, SW-W003, & SW-W050 Lag Storage, Trench 94 and ERDF Container RMA Weekly Dose Rate and Contamination Survey
- SW-W008 Navy Core Basket RMA Weekly Dose Rate and Contamination Survey
- SW-A005 Annual Routine Survey of Trench 94
- DSA Annual Update
- Technical Safety Requirements Annual Update
- Fire Hazard Analysis Annual Update
Assumptions

1. Trench 94 (Naval Reactors) transition and closeout does not occur prior to FY 2030.

Requirements

1. See lower level WBS level for additional requirements.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. 10 CFR 820; Procedural Rules For DOE Nuclear Activities
4. 10 CFR 830; Nuclear Safety Management (including DOE-STD-3009 CN-3, DOE-STD-1186, and DOE-STD-1189)
5. 10 CFR 835; Occupational Radiation Protection
6. 10 CFR 850; Worker Safety and Health Program
7. 10 CFR 851; Worker Safety and Health Program
8. 10 CFR 1021; National Environmental Policy Act Implementing Procedures
9. 29 CFR 1904; Recording And Reporting Occupational Injuries And Illnesses
10. 29 CFR 1910; Occupational Safety And Health Standards
11. 29 CFR 1926; Safety And Health Regulations For Construction
12. 40 CFR 60.150; Standards Of Performance For New Stationary Sources
13. 40 CFR 61; National Emission Standards for Hazardous Air Pollutants
15. 40 CFR 262; Standards Applicable To Generators Of Hazardous Waste
16. 40 CFR 264; Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
17. 40 CFR 265; Interim Status Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
18. 40 CFR 268; Land Disposal Restrictions
19. 40 CFR 302; Designation, Reportable Quantities, and Notification
20. 40 CFR 355; Emergency Planning And Notification
21. 40 CFR 370; Hazardous Chemical Reporting: Community Right-To-Know
22. 40 CFR 372; Toxic Chemical Release Reporting: Community Right-To-Know
23. 40 CFR 763; Asbestos
<table>
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<td>Naval Reactors (NR) Burial</td>
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24. 49 CFR 40; Procedures For Transportation Workplace Drug Testing Programs  
25. 49 CFR 130; Oil Spill Prevention and Response Plans  
26. 49 CFR 107; Hazardous Materials Program Procedures  
27. 49 CFR 171; General Information, Regulations, and Definitions  
29. 49 CFR 173; Shippers -- General Requirements for Shipments and Packagings  
30. 49 CFR 178; Specifications For Packagings  
31. 49 CFR 383; Commercial Driver's License Standards, Requirements and Penalties  
32. 49 CFR 385; Safety Fitness Procedures  
33. 49 CFR 387; Minimum Levels Of Financial Responsibility For Motor Carriers  
34. 49 CFR 390; Federal Motor Carrier Safety Regulations: General  
35. 49 CFR 391; Qualifications of Drivers  
36. 49 CFR 392; Driving of Commercial Motor Vehicles  
37. 49 CFR 393; Parts and Accessories Necessary for Safe Operations  
38. 49 CFR 395; Hours Of Service Of Drivers  
39. 49 CFR 396; Inspection, Repair and Maintenance  
40. 49 CFR 397; Transportation of Hazardous Materials, Driving and Parking Rules  
41. 42 USC 6962; Resource Conservation And Recovery Act (RCRA) Of 1976  
42. 42 USC 7401; Clean Air Act  
43. WAC 46-48; Transportation Of Hazardous Materials  
44. WAC 173-303; Dangerous Waste Regulations  
45. WAC 173-304; Minimum Function Standards for Solid Waste Handling  
46. WAC 173-340; Model Toxics Control Act -- Cleanup  
47. WAC 173-400; General Regulations For Air Pollution Sources  
48. WAC 173-401; Operating Permit Regulation  
49. WAC 173-460; Controls for New Sources of Toxic Air Pollutants  
50. WAC 173-480; Ambient Air Quality Standards and Emission Limits for Radionuclide  
51. WAC 246-247; Radiation Protection -- Air Emissions  
52. 00-05-006; Air Operating Permit (AOP)  
53. Hanford Site Air Operating Permit  
54. DOE/RL-2001-0036, REV. 1E; Hanford Sitewide Transportation Safety Document  
55. DOE/RL-2002-12, Rev 1; Hanford Radiological Health and Safety Document  
56. DOE/RL-89-10; Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)  
57. DOE/RL-94-02, Rev 6; Hanford Emergency Management Plan  
58. DOE/RL-96-68, Rev 4; Hanford Analytical Services Quality Assurance Requirements Document  
59. RRD 005, Rev 3; Worker Safety  
60. RRD 007; Chronic Beryllium Disease Prevention Program  
61. RRD 008, Rev 3; Quality Assurance Program Requirements  
62. DOE-0336, Rev 2A; Hanford Site Lockout/Tagout Procedure  
64. DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets.
Naval Reactors; Burial Ground 218-E-12B, Trench 94
**Scope**

The Contractor shall maintain the facility as described in the safety basis within the applicable safety basis documents and all environmental permits, licenses, and agreed orders.

Minimum safe operations are those activities specific to facilities that are required to be done in order to maintain or preserve the facility's ready-to-serve functions or normal operational functions while meeting all requirements of its environmental permits, agreed orders, and/or licenses, operational safety, radiological control, maintenance requirements, and safety basis. Minimum safe operations must therefore:

1. Facilitate safe deactivation, decommissioning, decontamination, and demolition at the end of facility life;
2. Facilitate inspections, testing, maintenance, repair, and replacement of safety-structure, systems, and components (safety SSCs) as part of a reliability, maintainability, and availability program with the objective of maintaining the facility in a safe state as defined in its safety basis and safety program documents;
3. Keep occupational radiation exposures within regulatory limits, and as low as reasonably achievable;
4. Maintain controls consistent with its safety basis and safety support documents; and,
5. Protect against chemical hazards and toxicological hazards consistent with its safety basis, environmental basis and permits, and all safety program documents.

Minimum safe operations includes facility surveillance, maintenance, quality control and assurance, training, engineering, supervision, work control, environmental compliance, radiation and industrial hygiene protection, and other support necessary to perform the above functions. Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed. Minimum safe also includes weather preparedness, biologic controls (insects infestation, animals, or weeds), fire hazards (tumbleweeds), and emergency response/drill programs.

Min-safe activities consists of:

- Surveillance
- Maintenance
- Quality Assurance,
- Training,
- Engineering,
- Resource Conservation and Recovery Act (RCRA) compliance waste management enhancements,
- Environmental compliance,
- Other support.
- Facility Supervision,
- Work Control, and
- Radiation protection.

Excluded from this scope is:

Preparation of safety analysis documents (covered in a separate WBS element in general administration).

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0013.26.50</td>
<td>Naval Reactors Min Safe</td>
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### Scope

Work scope covers all surveillance activities required to maintain the facility in compliance with its approved documented safety analysis (DSA) or other safety basis and all environmental regulations and permits applicable to the facility. This ensures that instruments and equipment used for verifying conformance to requirements, monitoring processes, or collecting data are controlled, calibrated at specified intervals, and maintained to required accuracy limits.

Facility staff performs in-service surveillance that includes program elements that ensure equipment is maintained operational and operations are performed in a safe and compliant manner. The in-service surveillance program includes provision for testing and calibration of maintenance equipment and the control and calibration of test equipment utilized for those calibrations. Operations personnel during rounds and surveillances take readings and report when equipment parameters are out of the specified range. Those results are evaluated including the need for calibrations. Trending of surveillance test results is performed to provide an accurate history of equipment operation and assure operations are performed in accordance with regulatory requirements. Programmatic reviews are conducted to assure the maintenance program remains effective and personnel are trained for the activity. Measuring and test equipment (M and TE) or installed instrumentation used in the performance of in-service surveillance is calibrated.

M&TE used to verify conformance to requirements, collect data, is controlled, and calibrated at specified intervals and maintained to required accuracy limits. Calibrations performed use approved procedures in order to control the performance of calibrations, provide repeatable calibrations, and provide correct acceptance criteria. The calibration frequency for each device is established based on the type of equipment, manufacturer's recommendations or specifications, inherent stability, required accuracy, intended use (including environmental conditions), assigned tolerances, calibration history, or other factors as appropriate. A recall list for devices requiring calibration is maintained. Calibrations of M&TE are performed using reference or working standards traceable to the National Institute of Standards and Technology or other approved standards. Calibrated equipment has a label affixed showing the calibration status or employs other alternative methods to identify calibration status.

Calibration of equipment, including M&TE used to verify conformance to requirements as part of any testing program, is governed by maintenance requirements and identified sub-tier documents.

Surveillance includes:
- Routine recording of instrument reading or performance required by surveillance plans.
- Routine testing/checking/verification of environmental instruments.
- Routine testing/checking/verification of safety instruments.
- Functional testing or calibration of instrumentation.
- Radiological surveys required by permits or DSA.
- Environmental surveys required by permits or DSA.
- Safety inspections required by integrated safety management plans or other.
- Fire inspections.
- Emergent surveillance required as a result of safety condition (e.g., unreviewed safety question compensatory actions).

Surveillance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of surveillance work will no longer be necessary. However, a minimum amount will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

Scope exclusion:
- All maintenance activities, including repair to M and TE and any other surveillance instruments.
- Preventative maintenance (PM) items.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
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<th>CWBS Title</th>
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<td>RL-0013.26.50.01</td>
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</table>
### Scope

The facility maintenance program establishes a balance between corrective and preventive maintenance that provides a high degree of confidence that facility equipment degradation is identified and corrected, that equipment life is optimized, and that the maintenance program is optimized. Maintenance procedures and other work related documents are prepared and used to provide appropriate work direction and to ensure that maintenance is performed safely and efficiently. Maintenance is planned, scheduled, and coordinated to improve efficiency and reduce exposure to radiation and other hazards ALARA for those potentially exposed. Post maintenance testing is performed to verify that components fulfill their design function when returned to service after maintenance. Measurement and test equipment (M&TE) is controlled, calibrated, and maintained as specified by the QA program. Maintenance history and trending is performed where appropriate to document data, provide historical information for maintenance planning, and support performance trending of facility systems and components.

Scope of work covers all maintenance performed within the facility, including repair to safety equipment required to be operational by the documented safety analysis (DSA) or other safety basis, required for normal operations, and required for compliance with environmental regulations and permits. This would include such things as roof repairs, electrical repairs, and door repairs.

Maintenance includes lubrication and inspection of required equipment, even if a decision has been made to run the equipment to failure rather than to replace or upgrade that equipment. Minimum safe operations includes upkeep, repair or replacement of equipment, instruments and systems needed to maintain or preserve the facility's ready-to-serve functions or normal operational functions. Replacement includes replacing obsolete or unrepairable equipment, instruments and systems with new equipment, instruments and systems that perform the same or similar functions, as needed.

Maintenance consists of the following:
- All Corrective maintenance (CM) work (repairs).
- All preventative maintenance (PM) work. There are approximately 550 surveillances and PMs each year, covering both safety and environmental equipment.
- All repairs or replacement of failed or failing equipment or obsolete equipment.
- All servicing/repair/maintenance of radiation detection instruments and equipment, unless performed by a central group.
- Inspection of critical (e.g., safety elated, important to safety, or important operational) equipment to assure availability when required.
- Safety related inspections.

Maintenance will need to keep the facility current and operational in terms of safety related components until the removal of cesium and strontium capsules by FY 2024. After that, the facility will become a radiological facility and the bulk of preventative maintenance work will no longer be necessary. However, a minimum number of PMs will be needed until such time as transition is begun. Upon conclusion of transition, the facility will enter a minimal custodial condition (fire protection and structural integrity only) until demolition. Electrical power and other utilities may be secured at that time.

### Assumptions

**Requirements**

1. See higher level WBS level for additional requirements.
Scope

The facility quality assurance program provides a high degree of confidence that facility equipment surveillance and maintenance is performed correctly, that equipment life is optimized, that spare parts are correct, and that facility oversight and evaluation is correct. Facility line management is responsible for implementation of the quality system. The project quality assurance manager is responsible for establishing and communicating the overall Quality Assurance Program policy. Each project facility has an assigned quality assurance engineer who works for the project quality assurance manager to verify compliance to relevant assigned facility requirements. Compliance with facility operating procedures is required. Organizational responsibilities and interfaces are defined in project-specific procedures.

Effective implementation of the Quality Assurance Program requirements involves management and provides tools to support the principles and functions of the Integrated Environment, Safety and Health Management System (ISMS). The fundamental quality expectation is that all work meets established requirements. The ISMS fundamental expectation is that all work be performed safely. In this regard, the quality management system described in this section ensures compliance with the approved standards so the expectation for safe and environmentally protective work within its controls is met.

The quality assurance scope consists of:

- The process for identifying conditions for corrective action or improvement through review and trending of nonconformance reports,
- Supplier (vendor) surveillance activities,
- Quality assurance surveillance and monitoring programs,
- Quality assurance assessments, trend analyses, and occurrence reports.
- Corrective action is planned, documented, and controlled. Documentation of corrective actions includes identification of the causes of the deficiency, actions taken to prevent recurrence, and verification of corrective actions.
- Assuring that work is performed using technical standards and administrative and other hazard controls in accordance with approved policies and procedures.
- Assuring that administrative controls are provided for the preparation, review, approval, distribution, and change of work defining documents.
- Assuring that quality-affecting instructions, procedures, and drawings allow personnel to ensure that activities are properly performed.
- Assuring that equipment or tools used for activities affecting quality (such as data collection and process monitoring) are calibrated and controlled in accordance with established administrative controls.
- Assuring that items are identified and controlled to prevent use of incorrect or defective items.
- Assuring that process monitoring or data collection instruments are controlled, calibrated, and maintained.
- Assuring that computer software used in applications important to safety, health, environmental, and quality aspects of work (if any) is subject to appropriate controls, including configuration management throughout the software life cycle.
- Nonconforming items, services, or processes that do not meet established requirements are identified, controlled, and corrected using approved procedures to prevent inadvertent installation or use.
- Assuring that Quality Assurance Program requirements apply to design control.

Documents that specify quality requirements or prescribe activities affecting quality are controlled to ensure that the requirements are implemented. Documents are approved, issued, and used to prescribe processes, specify requirements, or establish design.

Records that furnish documentary evidence of quality are specified, prepared, maintained, and stored. Specified records are protected from access by unauthorized personnel and damage caused by water, extreme temperatures, physical contact, and infestation of insects or rodents.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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</thead>
<tbody>
<tr>
<td>RL-0013.26.50.03</td>
<td>Naval Reactors Quality Assurance</td>
</tr>
</tbody>
</table>
Scope
The training program provides workers with the knowledge and skills to support the mission of safely restoring or remediating the Hanford Site by completing complex and high-risk tasks efficiently and effectively while protecting themselves, coworkers, the public, and the environment. Personnel are trained to perform assigned tasks in accordance with Federal or state laws, DOE directives, agreements, and management directed training drivers. Training courses are reviewed and approved by the cognizant interpretive/technical authority to ensure that the training program appropriately addresses regulatory and corporate requirements.

Scope consists of:
• Training is provided on facility-specific procedures that include normal, abnormal, emergency operations, surveillance testing, and maintenance processes, including facility specific lock and tagging.
• Training is provided on facility orientation.
• Training is provided on general employee training and site access. The training content may be provided by others.
• Training is provided on lessons-learned, including those from the Occurrence Reporting and Processing System and those received from other external sources. It also discusses generating lessons-learned documents about events and conditions at the Hanford Site so those documents can be used in the U.S. Department of Energy (DOE) and contractor lessons-learned programs. The lessons-learned document is routed to the training manager or designee who reviews each lessons-learned document for training application and takes appropriate action.
• Training is provided on Integrated Safety Management System/Environment Management.
• Training is provided on radiation protection (general and facility-specific). General radiation protection training content may be provided by others.
• Training is provided on hazardous material (general and facility-specific). This also covers handling of hazardous material, communication of hazardous materials, and spill responses. General hazardous material training content may be provided by others.
• Facility qualification, including preparation of all required facility tests and their administration. This includes hazardous waste qualification. This also includes all facility access requirements qualifications.
• Maintaining of all facility training records.
• Facility personnel "seat time" during the training.
• Training course fees.
• Facility specific training curriculum updates.

Exclusion:
This scope excludes training scheduling, curriculum evaluation, trainer evaluations, training records management, and cross-cutting training program management which are in RL-0000.01.15.09 Training and Procedures.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
### CWBS Title
Naval Reactors Engineering

### Assumptions

<table>
<thead>
<tr>
<th>Requirements</th>
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<tbody>
<tr>
<td>1. See higher level WBS level for additional requirements.</td>
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</tbody>
</table>

### Scope
Scope consists of:
- Configuration management of the facility, including maintaining of all required or needed records and design documents.
- Unreviewed safety question screening support to the safety analysis group (actual screening is performed by the safety analysis group).
- Assistance in repairs to facility operating equipment, systems (e.g., air, water, sanitation, electrical), instruments, or the facility itself (e.g., repairs to the roof or floor).
- Assistance in revision of safety basis or revised analysis.
- Walk-down of facility systems as required to ensure no degradation.
- Preparation of design drawings and as-built drawings of the facility.
- Performance of design reviews, alternate or design or safety calculations, and performance of qualification testing.
- Review of procedures.
- Fall protection/calculations/validations/walk-downs.
- Participation or review of lock-out/tag-out boundaries.
- Electrical hazard analyses.
- Engineering evaluations (including critical lifts, HEPA filter service life assessments, operability and technical evaluations, arc flash evaluations, permit evaluations, etc).
- Abnormal Container Management Program (ACMP) (as applicable).
- Engineering Management.

**Exclusion:**
Design modifications to the facility. These will be identified in facility upgrades, if any. However, new modifications currently not anticipated may be required in the future. Design change scope will be incorporated into WBS element created for the modification, upgrade, or design change.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.26.50.06</td>
<td>Naval Reactors RCRA Compliance Waste Management Enhancements</td>
</tr>
</tbody>
</table>

**Scope**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**Scope**

Support to facility management for implementation of the environmental program. The scope consists of:

- Implementing policies, plans, procedures, environmental codes, standards, regulations, and orders pertaining to the facility. This includes:
- Compliance with Tri-Party Agreement (TPA) milestones applicable to the facility;
- Compliance with all environmental permits and regulations applicable to the facility;
- Compliance with all agreed orders issued to the facility or other direction.
- Developing policy and resolving issues pertaining to environmental compliance specific to the facility;
- Tracking, monitoring, and directing progress of environmental deliverables specific to the facility; and
- Providing corrective actions for adverse trends specific to the facility.
- Maintaining all required environmental records and permits.
- Preparing changes to permits or TPA milestones, as required. This includes all comment resolution.
- Sampling and sample analysis associated with the air operating permit.
- Trend analysis of the air operating permit sample analysis results.
- Environmental activity screening of planned work activities to ensure adequate controls for compliance and completion of the standard form for Environmental Activity Screening.
- Participation in site work site assessments as required.
- Records Management support to gather data prior to regulator inspections as well as respond to data requests as part of the follow up to an inspection.
- Environmental Control Officer (ECO) or equivalent review and input to procedures.
- ECO’s radioactive emission calculations.
- Developing data for compliance reports
- Sample collection and analysis costs associated with the water sampling for the RCRA Discharge Permit (per MOU between ETF WESF, and T-Plant), if required.

**Exclusion:**

All scope associated with RCRA compliance waste management enhancements.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
Scope

Other facility support scope consists of the following:

- Facility hazardous waste management, procedures, handling, labeling, inspections, staging, treatment, segregating and processing (if performed), control, transport, shipping/receiving, and record-keeping.
- Facility criticality controls and implementation, and oversight, as required.
- Implementation of safeguards and security requirements for material accountability, if applicable.
- All other facility safety basis implementation, and oversight, as required.
- Facility fire protection services, including fire marshal, fire protection such as burn permits and inventory controls, fire hazard analysis implementation (FHA development/preparation by others), oversight/support/implementation of the combustible control program, routine code interpretation, code enforcement, fire system design/modification review, and facility technical support. All as required.
- Administration of facility specific procurements.
- Industrial hygiene and occupational safety.
- All facility specific waste management activities.
- Facility emergency preparedness and response, including emergency management plans, emergency planning procedures, project building emergency plans, and emergency drills. The facility emergency preparedness personnel ensure that facility and site responses are integrated to the extent required.
- Facility staff and visitor time spend participating in emergency drills.
- Records Management Specialist support to processing surveillance data sheets, OCRWM records support, assistance in locating documents in IDMS or other engineering and facility data systems, and oversight of the facility’s records management process, if applicable.
- Facility cost records maintenance and record keeping, except when performed by a central group.
- Facility support to Waste Isolation Pilot Plant (WIPP) characterization and certification compliance, as required.
- Facility spare parts inventory and other equipment inventory (e.g., storage casks), as required.
- Preparation, revision, and administration of all facility specific procedures, records, and documents (except as maintained by others—e.g., training records, engineering drawings), or other such information.
- Facility assessments, including management assessments of the facility.
- Facility corrective action management.
- All contract issues bearing on the facility, unless performed by a central group.
- General housekeeping services.
- Hoist and rigging, except when provided by a central pool.
- General facility cleanup and maintenance (e.g., tumbleweed removal, insect spraying), except when performed by a central pool.
- Project Interface (facility management efforts to coordinate the facility’s operation with the rest of the Hanford site).
- Chemical Management including pre-acquisition screening for existing availability, Chemical Inventory Tracking System input and management, ensuring MSDS is current, inventory inspection and tracking, and disposition of excess or expired products.
- Compliance with Occupational Safety and Health requirements including performing safety and health inspections, trend analysis and IH field oversight of facility activities.
- Material coordinator support to HAMTC crafts including effort to purchase, creation of catalogue ID (if tracked in Asset Suite) and input and tracking if in eBOM system, reconciliation of P-Card transactions, and receiving, storing, and distribution depending on the item.

Exclusions:
The transportation safety packaging design authority also provides support to facility waste management, but that scope is not included.

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
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<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0013.26.50.08</td>
<td>Naval Reactors Other Support</td>
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</table>
**CWBS Number**  RL-0013.26.50.09  
**CWBS Title**  Naval Reactors Supervision

<table>
<thead>
<tr>
<th>Scope</th>
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</thead>
<tbody>
<tr>
<td>Facility supervision scope is:</td>
</tr>
<tr>
<td>• Supervision of facility staff (supervision is defined as giving instructions for the day’s work, assessing employee performance, etc.).</td>
</tr>
<tr>
<td>• Maintaining of employment records, except when provided by a central pool.</td>
</tr>
<tr>
<td>• Time sheet preparation, maintenance, record-keeping, and approvals.</td>
</tr>
<tr>
<td>• Supervision-staff liaisons, including union interface, development seminars, retreats, functions, etc.</td>
</tr>
<tr>
<td>• Field work supervision.</td>
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</tbody>
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<tr>
<th>Assumptions</th>
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<table>
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<tr>
<th>Requirements</th>
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</table>

1. See higher level WBS level for additional requirements.
**CWBS Number**  
RL-0013.26.50.10

**CWBS Title**  
Naval Reactors Work Control

### Scope
Facility work control scope is:
- Preparation of all work packages for facility maintenance, repair, modification, or upgrade.
- Administering and maintaining facility specific procedures of any type or facility procedures that implement general project procedures. This includes drafting, revising, and implementation.
- Maintenance of all work control records, including work packages, unless performed by a central group.
- Facility baseline development and maintenance as required.
- Work performance record keeping, including earned value analysis and record keeping.
- Planning, conducting, and attending Plan-Of-The-Day, Daily Safety Meetings, Schedule Coordination Meetings, etc.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
**CWBS Number**
RL-0013.26.50.11

**CWBS Title**
Naval Reactors Radiation Protection

---

**Scope**

Facility specific radiation protection assists facility management in implementing as low as reasonably achievable practices, technical radiation control issue resolution, and surveillance for compliance with project radiation protection requirements.

Facility scope consists of:

- Facility-specific assessments of workplace air monitoring, and internal and external dosimetry.
- Maintenance of facility radiation exposure records, unless performed by a central group.
- Conduct of routine radiation surveys, including air monitoring.
- Conduct of non-routine radiation surveys, including air monitoring as a result of unexpected occurrence or other emergency, accident, or abnormal event.
- Documenting, storing, maintaining radiation surveys and review and approval of survey reports.
- Support to radioactive material handling, storing, and shipping.
- Development of facility radiation training and qualification materials.
- Monitoring of external and internal radiation exposure to facility staff.
- Establishment of respiratory protection for facility staff as required.
- Control of radiation detection instruments and equipment. Servicing/maintenance of such equipment is excluded.
- Establishment facility of radiation controls.
- Compliance with radioactive regulations at the facility.
- Health Physicist support to radiation work planning, trend analysis, field oversight, performance of technical evaluations, supporting ALARA meetings, and supporting dosimetry reporting.
- Management of radiation protection activities.

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**Assumptions**

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**Requirements**

1. See higher level WBS level for additional requirements.
CWBS Dictionary
RL-0030
Soil and Groundwater Remediation Project
RL-0030

WBS Level Definition for Groundwater

WBS Level 1 is the Program Baseline Summary (PBS)

WBS Level 2 breaks out the work by Program Management, Groundwater Monitoring and Operable Units

WBS Level 3 breaks out the work by well drilling, sampling and data evaluation, decision documents for GW and Source Operable Units, GW remedy implementation and GW monitoring specific to an operable unit.

WBS Level 4 contains each regulatory decision document for groundwater and source operable units, and the installation and operation of groundwater remedies. Source operable unit remedies are implemented in PBS 40 and PBS 41.

WBS Level 5 contains the work, in an operable unit, to implement and operate the selected groundwater remedy.
**Scope**

The mission of the RL-0030 Soil and Groundwater Project is to protect the Columbia River and remediate contaminated groundwater resulting from legacy plutonium production operations at the Hanford site. The RL-0030 Project also implements the CERCLA Superfund Cleanup Process in conjunction with RCRA TSD Closure Process to obtain Records of Decisions (ROD) for Central Plateau soil operable units and all groundwater operable units on the Hanford Site.

Past operations in the Central Plateau have resulted in facilities, waste sites, and groundwater being contaminated with hazardous and radioactive materials. Wells are used at the Hanford Site to extract, treat and re-inject groundwater, monitor groundwater quality, delineate existing groundwater plumes, and to meet regulatory requirements associated with CERCLA, RCRA, and DOE directives.

Waste sites are grouped into process-based OUs identified in Appendix C of the TPA for remedial investigation and remedial action decision making purposes. Operable Units for groundwater are identified geographically. Interim and final remedial actions are being implemented for groundwater Operable Units (OUs), systems are being implemented that are necessary to implement the remedial actions identified in RODs, and characterization activities and preparation of remedial action decision documents are in progress. As the remediation of the river corridor is well underway, part of the Groundwater Project focus is now on the characterization of source units (near surface and vadose zone soil column) on the Central Plateau and the need to develop remedial decisions for source units on the Central Plateau.

The components of the PBS 30 WBS are as follows:

Level 1: PBS

Level 2: Function/Operable Unit (e.g. Program Management, 200-WA-1)

Level 3: Operable Unit Work (Decision Documents, Remedies, Monitoring)

Level 4: Field Work/Document Preparation (Characterization, RI/FS, ROD)

Level 5: Groundwater Remedy Implementation (Pump & Treat, Monitored Natural Attenuation)

### Assumptions

### Requirements
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<tr>
<th><strong>CWBS Number</strong></th>
<th><strong>RL-0030.01</strong></th>
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<tbody>
<tr>
<td><strong>CWBS Title</strong></td>
<td><strong>Groundwater Program Management</strong></td>
</tr>
</tbody>
</table>

**Scope**

Groundwater program management covers general planning, management direction, coordination, evaluation, and management system outputs.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
7. Comply with 36 CRF 800 (Protection of Historic Properties), the implementing regulations for Section 106 of the National Historic Preservation Act (NHPA) 16 U.S.C. 470 et seq.)
8. Costs need to be tracked by operable unit for well trips.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0030.01.01</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>Groundwater Program Management</td>
</tr>
</tbody>
</table>

**Scope**
Scope for this WBS element allows for general planning, management direction, coordination, evaluation, and management system outputs. It is inclusive of overall project management and direction, project controls, cross-cutting technical, administrative, environmental, quality assurance, and infrastructure support. These are typical functions required for routine operation of the Soil & Groundwater Remediation Project (S&GRP); and necessary to support the other functions, staff, and control accounts within the project. This account further includes activities and efforts necessary to support development, integration, investigation, analysis, optimization, and recommendation of remediation alternatives remedial decisions.

**Assumptions**

**Requirements**

**TPA Milestones**

N/A
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0030.01.02</th>
<th>CWBS Title</th>
<th>Integration &amp; Assessments</th>
</tr>
</thead>
</table>

**Scope**
Integration and assessments includes activities and efforts necessary to support development, integration, investigation, analysis, optimization, and recommendation of remediation alternatives remedial decisions.

**Assumptions**

**Requirements**

**TPA Milestones**
## CWBS Number
RL-0030.01.02.01

## CWBS Title
Strategic Integration

### Scope
DOE has established a foundational clean-up strategy that includes a set of cross-cutting cleanup principles and parameters which form the basis for this activity. The scope of SI applies broadly to all remediation activities and requires proactive leadership to: a) implement DOE’s strategy and ensure the application of cleanup principles; b) define the remedial path-forward by anticipating and identifying issues that impact decisions, and c) facilitate resolution of issues that are relevant to the successful implementation of DOE’s strategy; help prioritize activities, integrate schedules, and drive cleanup progress. SI is to embrace all relevant aspects of CERCLA, RCRA (including RCRA/CERCLA integrations), the Nuclear Waste Policy Act and DOE Orders that apply in the assessment, evaluation and decision processes to support remedy selection. A key aspect of SI support is for management to drive scoping requirements to define an alternative points of compliance and to establish the boundary of a groundwater waste management area that will inform risk assessments, remedial alternatives development and evaluation processes and for remedy selection; and developing the framework for a Cumulative Impact Evaluation (CIE). SI support includes periodic review and, as necessary, supporting DOE in updating the strategy to be consistent with DOE’s remediation decision logic and priorities.

### Assumptions

### Requirements

### TPA Milestones

#N/A
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<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0030.01.02.02</td>
<td>Technical Integration</td>
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</table>

**Scope**
TI applies broadly to all remediation and cleanup activities and requires proactive leadership to insure that technical evaluations utilize DOE technical cleanup principles as well as applicable regulatory and DOE directive requirements. TI supports DOE in executing several activities in a coordinated fashion including field investigations, risk assessments, and alternative development/evaluation including associated documentation associated with CERCLA remediation and RCRA cleanup through the completion of an integrated CERCLA/RCRA CAD/ROD. The TI function includes coordinating and optimizing the development and collection of consistent geological, hydrogeological, and geophysical data, and conceptual models to support the risk and alternative assessment process, and remedial decisions. Management is responsible for ensuring data quality requirements are achieved (including data quality objectives, and technical evaluations and documentation quality) and that consistency in data is maintained across program efforts. Document quality is a critical component in effectively communicating and documenting technical evaluations and decisions that require management involvement at the highest levels to ensure document quality requirements are being achieved. TI is to identify opportunities to reduce the cost and time required to complete characterization efforts and risk assessments in accordance to DOE’s Inner Area principles. The principles outline that characterization and risk assessments will conform to CERCLA requirements, including characterizing to determine a basis for action on each waste site through direct characterization or regulator-agreed analogy. TI will support DOE in executing its lead federal agency role with regulators and stakeholders in the preparation, submission, approval, and defense of modeling, risk assessment and supporting documentation as well as remedial alternative evaluations. A key aspect to achieve TI is to develop and conduct a CIE and to integrate the results of studies performed as part of RST.

**Assumptions**

**Requirements**

**TPA Milestones**
No TPA Milestone
### Scope
RDS activities require management support in the application of an integrated systems approach within broad geologic cleanup regions of the Hanford site (e.g.: Inner Area, Outer Area, and River Corridor). RDS includes being an advocate for the formulation of remedial decisions that will ensure the selection of cost-effective remedial decisions that achieve applicable risk mitigation consistent with relevant land use and attendant cleanup requirements as well as the objectives of DOE’s cleanup principles. RDS includes identifying means to improve cost-effectiveness of remedies such as a groundwater waste management area and alternative points of compliance. RDS embraces the need for achieving consistency in CERCLA and RCRA decisions and actions. This activity also requires legal and regulatory analysis support, including assisting in discussions involving regulatory disagreements on interpretation of guidance and regulations. RDS also includes support to DOE in executing its lead federal agency role with regulators and stakeholders in the preparation, submission, approval, and defense of proposed plans and decision documents.

### Assumptions

### Requirements

### TPA Milestones
No TPA Milestone
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0030.01.02.04</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>Remediation Science and Technology</td>
</tr>
</tbody>
</table>

**Scope**

The scope requires management supports in prioritizing the identification and development of new technologies that result in cost-effective characterization and cost-effective remedial actions, performing field and laboratory tests on innovative technologies, and acquiring new data that hold promise to accelerate, improve, or reduce the cost and time to accomplish work. RST includes developing and/or executing evaluations of field-collected data to justify or reject critical aspects of regulatory decision making. Studies can be a one-time evaluation or iterative investigations/assessment that are updated as new data become available. Such studies can help define the depth of contamination which may interact with biota and be mobilized to the soil surface, and develop a comprehensive groundwater and vadose zone interactive model to determine the cumulative impacts of contamination in groundwater over time. These tasks will lead to improved remediation and closure decisions and development of final remedies.

**Assumptions**

**Requirements**

**TPA Milestones**

No TPA Milestone
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0030.01.02.05</td>
<td>Sample Management &amp; Reporting</td>
</tr>
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</table>

**Scope**

The Sample Management and Reporting organization provides centralized management, planning, development, and oversight of sampling and analytical activities for the Groundwater Monitoring program.

**Assumptions**

**Requirements**

**TPA Milestones**

No TPA Milestone
The purpose of Environmental Database Management (EDM) is to develop and/or maintain both the programs and the documentation for managing and administering Hanford environmental databases and Hanford environmental data integration. In addition to maintaining these data as Hanford Site accessible databases, they also contain information necessary to fulfill configuration control and quality assurance requirements. Therefore, these data bases can be used for various modeling efforts across the range of CERCLA and RCRA processes.
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<th>CWBS Number</th>
<th>RL-0030.01.02.08</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>Systematic Planning Integration</td>
</tr>
</tbody>
</table>

**Scope**

This WBS element is perform The Systematic Planning and Integration (SPI) function of the S&GRP coordinates and focuses on the application and utilization of Systematic Planning to soil, vadose zone, and groundwater cleanup. Its objective is to ensure consistent and technically defensible products and decisions by Operable Unit personnel throughout the CERCLA process. The following activities are performed:

- Integration Planning and Management
- Integration of Systematic Development of Tools and Processes to Support Standardization of Documentation
- Systematic Use of Peer Review

Specific tasks of SPI include:

- Maintaining documentation standards and templates.
- Maintaining cost estimating software and procedures.
- Maintaining the capability for a systematic and consistent CERCLA document review process, and the capability for cost estimating.
- Supporting DOE-RL with upgrades to the Tri-Party Agreement (TPA) Administrative Record database.

**Assumptions**

**Requirements**

**TPA Milestones**
**Assumptions**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.

**Scope**

Groundwater monitoring covers groundwater monitoring and performance assessments to manage activities that support the monitoring and characterization of groundwater and soil. Data and information developed by these activities are used to evaluate and map contaminant concentrations, trends, and distributions and are critical for evaluating the performance of ongoing remedial actions.
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<tbody>
<tr>
<td>RL-0030.02.01</td>
<td>Geophysical Sciences &amp; Logging</td>
</tr>
</tbody>
</table>

**Scope**

This work element includes management, deployment and use of geophysical technologies and data interpretation and evaluation. Work involves procurement, management and utilization or subcontractors for borehole and surface geophysical logging at the Hanford Site. The work scope also includes quality assurance, safety, radcon, industrial hygiene, and waste management support for geophysical logging. Subcontracted logging services include spectral gamma (SGLS) and neutron moisture logging (NMLS) services in support of Groundwater Program activities. Additional Logging services may include pulsed neutron logging systems (PNLS), high rate logging systems (HRLS) and neutron capture logging systems as needed. Spectral gamma and neutron-moisture logging services will be provided on an “as needed” basis to support the installation of new RCRA groundwater monitoring wells as part of the Groundwater Monitoring Program. Scope does not include small diameter logging tools. The geophysical logging subcontractor also provides programmatic planning support, data interpretation, and maintains a database of geophysical logs on the Hanford site. Work includes equipment replacement every 10 years beginning in 2021.

**Assumptions**

**Requirements**

**TPA Milestones**

No TPA Milestone
**Scope**

This WBS element planning, coordinating, sampling, preparation, packaging, and shipping samples to the laboratory. Developing specific sampling design, analytical requirement, and QC requirement to ensure that sampling and analysis activities are carried out in accordance with the Sampling Analysis Plan (SAP). The Sample Management and Reporting organization oversees offsite analytical laboratories, coordinates laboratory analytical work to ensure that laboratories conform to the requirements and verifies that laboratories are qualified for performing Hanford Site analytical work. The SMR group generates field sampling documents, labels and instructions for field sampling personnel and develops Sampling Authorization form (SAF), which provides information and instruction to the analytical laboratory. The analytical laboratory analyze samples, in accordance with established procedures and the requirement of each plan, and provide necessary data packages containing analytical and QC results. Laboratories provide explanation of results to support data review and in response to resolution of analytical issues. Statements of work flow down qualify requirements consistent with HASQARD (DOE/RL-98-68). The laboratories are evaluated under the DOE Consolidated Audit Program (DOECAP) to U.S. Department of Defense/DOE Quality System Manual requirements (DOECAP, 2013, Department of Defense (DoD) Department of Energy (DOE) Consolidated Quality Systems Manual (QSR) for Environmental Laboratories) and must be accredited by Ecology for analysis performed for the Soil and Groundwater Remediation Project. Sampling and reporting of groundwater monitoring data is necessary to meet State of Washington and Federal regulatory requirements and DOE Orders. The sites are monitored in accordance with regulations that require specific sample collection, analysis, evaluation, and reporting requirements; or in accordance with general requirements contained in DOE Orders and implementing plans. Monitoring plans are prepared, approved, and implemented in accordance with specific regulatory requirements.

**Assumptions**

**Requirements**

**TPA Milestones**

No TPA Milestone
## Scope
Groundwater sample collection from monitoring wells and aquifer sample tubes at Hanford Site, including RCRA TSD Units and area regulated under the AEA, CERCLA groundwater Operable Units, and other sites as directed. DOE coordinates groundwater sampling for the RCRA, CERCLA, and AEA programs to avoid duplication. Specific groundwater monitoring plans and sampling and analysis plans (SAPs) define which wells to sample, how often to sample, and what constituents to analyze. The sampling objectives are based on the data needs, such as interpreting the extent of contamination, evaluating vertical contaminant distribution, refining geologic models, complying with regulation, evaluating the performance of remediation activities, defining concentration trends, or identifying emerging contaminants. This work is required to meet State of Washington and Federal regulatory requirements, CERCLA Work Plan and Sampling and Analysis Plan requirements, and DOE Orders. During 2016, DOE sampled 1,053 wells. Wells are sampled numerous times, for a total of 3,936 successful well sampling trips. During the year, 277 aquifer tubes were sampled and for a total of 364 sampling trips.

- Work includes maintaining the Hanford Geotechnical Sample Library Operation.
- Work also including purchasing 6 purgewater trucks beginning in 2021.

## Assumptions

## Requirements

## TPA Milestones
No TPA Milestone
**Scope**

This WBS element produces the following reports:

- **The Annual Groundwater Monitoring Report** in accordance with the requirements for CERCLA groundwater operable units (OUs) and the Atomic Act of 1954 (AEA) as required by DOE orders. This report focuses on groundwater monitoring results and changes from the previous year. DOE coordinates groundwater monitoring plans and sampling and analysis plans (SAPs) define which wells to sample, how often to sample, and what constituents to analyze. The sampling objectives are based on the data needs, such as interpreting the extent of contamination, evaluating vertical contaminant distribution, refining geologic models, complying with regulations, evaluating the performance of remediation activities, defining concentration trends, or identifying emerging contaminants. CERCLA groundwater activities on the Hanford Site include defining the nature and extent of contamination, remedial actions, and evaluating the effectiveness of remedial actions. RCRA regulates the management of solid waste, hazardous waste, and certain underground storage tanks. It applies to active or recently active TSD dangerous waste management units. DOE reports RCRA groundwater monitoring results to Ecology annually in a separate report. The contents of that report are repeated in this report for completeness. Washington Administration Code Units – Two Hanford Site facilities require groundwater monitoring under the Washington Administration Code (WAC): the Solid Waste Landfill (under WAC 173-350, “Solid Waste Handling Standards”) and the State-Approved Land Disposal Site, associated with the Effluent Treatment Facility (ETF) (WAC 173-216, “State Waste Discharge Permit Program”). This report includes summarizing monitor results for those facilities. Atomic Energy Act Monitoring – The AEA ensures the proper management of radioactive materials. Requirements for groundwater monitoring associated with environmental surveillance under the AEA are implemented through DOE O 458.1, Radiation Protection of the Public and the Environment; DOE O 435.6.1, Departmental Sustainability; and DOE O 435.1, Radioactive Waste Management (primarily applied in DOE M 435.1-1, Radioactive Waste Management Manual). These DOE orders and their associated manuals, standards, guidance, and contractor requirement documents implement AEA requirements across the DOE complex and include groundwater monitoring to detect, characterize, and respond to releases of radionuclides. In 2016, DOE implemented a new AEA monitoring plan (DOE/RL-2015-56, Hanford Atomic Energy Act Sitewide Groundwater Monitoring Plan). The objective of AEA monitoring is to determine the location and move of radionuclide contamination in Hanford Site groundwater and to estimate impacts to human health and the environment in terms of the total effective dose (TED) received by potential receptors. Water Levels – DOE measures water levels in monitoring wells to discern which way the groundwater is flowing. Water levels are measured manually and with an automated system. Water levels are used to determine rates of contaminant migration, adequacy of monitoring networks, and radial influence of remedial actions. SGW-3881, Water-Level Monitoring Plan for the Hanford Site Soil and Groundwater Remediation Project; describes the collection and analysis of manual water-level measurements at the Hanford Site. ECF-Hanford-16-0080, Preparation of the Hanford Site Water Table and Potentiometric Surface Maps, describes how the water-table map was constructed. The automated water-level network (AWLN) is an array of remote monitoring stations connected by a telemetry network to a central base station (SGW-53543, Automated Water Level Network Functional Requirement Document). Each monitoring station consists of a pressure transducer connected to a data collection telemetry unit. Pressure data from the AWLN is used to calculate water levels, which are used to estimate the level of hydraulic containment achieved by P&T systems, determine hydraulic gradients in areas with variable conditions, and measure changes in the state of the Columbia River in the 100 and 300 Areas. By the end of 2016, there were 174 AWLN stations on the Hanford Site, including 20 newly installed stations in 100-PR. Calendar Year Annual Summary Report for the 100-HR-3 and 100-KR-4 Pump and Treat Operations, and NR-2 Groundwater Remediation – This report details the volume of water treated, the contaminant mass removed through the P&T systems, the efficiency of the P&T systems, the effectiveness of the PRBs, and the resulting effect on groundwater concentration. Calendar Year Annual Summary Report for the 200-ZP-1 and 200-UP-1 Operable Unit Pump and Treat Operations – This report presents the calendar year operational results and evaluation for the 200-UP-1 and 200-ZP-1 Groundwater Operable Unit (OU) pump and treat (P&T) systems at the Hanford Site.

**Assumptions**

**Requirements**

**TPA Milestones**

No TPA Milestone
### Scope
This WBS element includes the management, planning, coordination, and implementation of maintenance for Hanford Site groundwater monitoring wells, interim action monitoring wells and wells associated with established treatment and plume containment facilities (e.g.: 100 and 200 Area Pump-and-Treats and ISRM Barrier). Wells are used at the Hanford Site to provide data to monitor groundwater quality, 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. Install groundwater monitoring wells in accordance with applicable regulatory and DOE requirements to support both Hanford Site-wide characterization activities and OU characterization, treatability studies and remedy performance activities.

### Assumptions

### Requirements

### TPA Milestones
No TPA Milestone
### CWBS WBS DICTIONARY SHEET

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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0030.02.06</td>
<td>RCRA Well Drilling (M-024)</td>
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### Scope
This WBS element includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project close out to support drilling 15 wells a year for groundwater monitoring, groundwater treatment (injection/extraction wells), passive barrier emplacement, treatability testing and remedy performance.

### Assumptions

### Requirements

### TPA Milestones
No TPA Milestone
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<th>CWBS Number</th>
<th>RL-0030.02.07</th>
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<td>CWBS Title</td>
<td>Miscellaneous Well Decommissioning</td>
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**Scope**
This WBS element includes preparing inventories of unused and/or non-compliant wells, planning and documentation, technical coordination, procurement, labor, subcontracts, materials, equipment, field support during construction (e.g., BTR, well site geologist), waste management and project closeout to support decommissioning of unused or non-compliant wells.

**Assumptions**

**Requirements**

**TPA Milestones**
M-016-00, M-016-00C
Scope

This WBS element includes the Operation and Maintenance (O&M) of the ModuTanks, groundwater sample collection, replacement facility/plant, regulatory closure activities, and decommissioning and demolition activities. Perform daily activities necessary for disposal of extracted groundwater from on-well sampling and maintenance activities, and associated groundwater characterization and remediation tasks. The work includes planning, documentation, and associated work activities to operate and maintain the ModuTanks and access roads.

• Control access to and manage Modu Tanks for disposition of water collected from on-site groundwater wells and associated groundwater characterization and remediation tasks.
• Submit required operations and maintenance regulatory reports through DOE.
• Perform site housekeeping and maintenance, including dust suppression and weed control.
• Support Solid Waste Information Tracking System (SWITS) database tracking.
• Support Treatment, Storage, and Disposal (TSD) record keeping.
• Additional O&M activities (removal of sediment build-up) are required to maintain required freeboard capacity and to reduce the risk of failure due to structural integrity issues. The permit process of this CAPN is required before closure of the facility can start.
• Dispose of transfer water at the 200 West Pump and Treat facility if possible, or transfer water to the Effluent Treatment Facility (ETF).
• Perform efficient operations of units to maintain proper water levels. This includes monitoring of freeboard to ensure capacity is not compromised due to environmental influences such as wind generated wave action and rain and snowfall contributions.
• Provide for the coordination, collection, packaging, and transport/delivery of soil, liquid, and other media collected for tasks associated with the operation, closure and dismantlement of the ModuTanks. Includes all off-site laboratory analysis activities and cost associated with annual performance and compliance monitoring and characterization sampling to close and dismantle the ModuTanks.
• Tasks include preparation of sampling analysis and quality assurance plans, sampling request documents, collection and preparation of process and compliance samples for shipping for off/on-site analysis, and provide necessary equipment and materials (e.g. bottles) for sample collection.
• Borehole Purgewater Settling Basins: Design, procurement, and construction of purgewater settling basins. The basins are required to be built and operational before the closure of the ModuTanks can commence. The settling basins will be used to separate the suspended solids from the borehole purgewater. The conceptual design is for two cubic rectangular basins that will accept borehole purgewater. The water will crest over a vertically adjustable weir into a common collection basin. The common basin water will be collected and either used as rinse water that will re-enter the basins at the head end or sent to 200 ETF for processing. The sediment load in the basins will be monitored, collected and sent to the ERDF for disposal.
• The settling basins and common collection basin will be located inside of a building. Support equipment (tanks, pipes, pumps, etc.) will also be located inside the building where practical and outside the building, in a covered area, as required.
• Regulatory Closure: Resolve Notice of Deficiency (NOD) (s) on closure plan. Modify Permit and Final Closure Certificate. Assume up to five review/comment resolution cycles may be required to finalize regulatory documents.
• Receive DOE, Regulatory and or Public comments of the following Modutanks closure documents: Data Quality Objective (DQO), Engineering Evaluation/Cost Analysis (EE/CA), Closure Plan, Sampling and Analysis Plan (SAP). Assume up to five review/comment resolution cycles may be required to finalize regulatory documents.

Assumptions

Requirements

TPA Milestones

No TPA Milestone
# Scope
This WBS element includes work in the 100-BC-5 groundwater operable unit (OU) located within the River Corridor at the Hanford Site. It includes Project Management, RDR/RAWP for the operable unit, and any pre-decisional remedial action planning and implementation determined necessary prior to remedial action decision making and well decommissioning. Work includes monitoring and reporting support; operable unit modification and expansions; field studies and deployment activities; and final deactivation and decommissioning of the wells at the end of their service lives.

## Assumptions
1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.
2. Monitored Natural Attenuation and Technical Impracticability are potential remedial alternatives for limited constituents.
3. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
4. Assumed future groundwater remedy is monitored natural attenuation (MNA).
5. Interim remedies will continue on the River Corridor until superseded by final decisions.
6. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

## Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
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<tbody>
<tr>
<td>RL-0030.10</td>
<td>100-BC-5 Operable Unit</td>
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</table>

### 100-BC-5 Gound Water Operable Unit

Legend
- Hanford Site Boundary
- Ground Water Operable Unit Boundary

Map showing the 100-BC-5 Gound Water Operable Unit boundary.
### Scope

This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables are of high quality, and are produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and protocols set by the contract are followed.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

1) Provide project management oversight and reporting to support site-wide compliance and regulatory meetings and reporting that are applicable to this Operable Unit. Activities include:

- Support and attend Unit Manager Meetings
- Support and attend public meetings
- Provide quarterly TPA performance and milestone review input
- Management of funds tied to this Operable Unit
- Management of milestones tied to this Operable Unit

2) Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:

- Management of scope, schedule, and budget for completion of the technical documents
- Subcontractor management
- Ensuring that technical documents are high quality
- Preparation of monthly reports (e.g., technical, not related to cost or schedule)

3) Baseline management and reporting. Activities include:

- Scope, schedule and cost documentation for the Operable Unit
- Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
- Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

### Assumptions

#### Requirements

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

### TPA Milestones

No TPA Milestone
### Scope
This WBS element represents the 100-BC-5 groundwater operable unit located within the River Corridor at the Hanford Site. In 2016, DOE submitted Draft A of the RI/FS report (DOE/RL-2010-96 and Proposed Plan DOE/RL-2016-43, Proposed Plan for Remediation of the 100-BC-1, 100-BC-2, and 100-BC-5 Operable Units) to EPA. These documents propose monitored natural attenuation as the preferred remedy for groundwater. This WBS is to provide submittal of a final Remedial Design Report/Remedial Action (RDR/RAWP) Work Plan.

### Assumptions

### Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
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<tr>
<td>RL-0030.10.02.05</td>
<td>100-BC-5 Remedial Design / Remedial Action Work Plan</td>
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</table>

### Scope

The Remedial Design Report (RDR) is the final design document detailing the remedial design as selected in the ROD. The RDR is a Primary document as outlined in the Tri-Party Agreement. Design of complex facilities and processes is an evolving process and should be treated as such during review. The key components of the RD are: scoping; design tasking; predesign submittals and treatability studies; design submittals; value engineering studies; progress monitoring; and post-design activities. The RDR shall include design drawings, specification of construction materials, construction procedures and a preliminary construction budget. Implementation of the remedial design is defined in the Remedial Action Work Plan (RAWP). The RDR and RAWP are companion documents and the relationship is dynamic with changes in one affecting the other. The specific work scope for these OUs will include the development and revision as necessary of an RD/RAWP(s) to implement the OU specific RODs as well as supporting the development and revision of any integrated source and GW unit RD/RAWPs that may be associated with these units.

The Remedial Action Work Plan (RAWP) documents the process of implementing the remedial design. It may be developed in conjunction with the RDR. It describes the approach, budget and schedule for implementing the RDR and provides the details for any construction activities necessary to implement the remedial design selected in the ROD. The RAWP is considered a primary document as outlined in the Tri-Party Agreement. The specific work scope for these OUs will include the development and revision as necessary of an RD/RAWP to implement the OU specific ROD as well as supporting the development and revision of any integrated source and GW unit RD/RAWPs that may be associated with these units.

### Assumptions

1. 100-BC Area CERCLA Record of Decision (RODis complete by the end of FY19.

### Requirements

#### TPA Milestones

**CWBS Number**

RL-0030.10.03

**CWBS Title**

100-BC-5 Remedial/Removal Action Implementation

---

**Scope**

Remediation and closure of the 100-BC-5 OU is coordinated under both the CERCLA Remedial Action and RCRA Corrective TSD Unit Closure process. A final Record of Decision (ROD) for the 100-BC-5 OU is scheduled to be met in October 2018. In 2016, DOE submitted Draft A of the RI/FS report (DOE/RL-2010-96 and Proposed Plan DOE/RL-2016-43, Proposed Plan for Remediation of the 100-BC-1, 100-BC-2, and 100-BC-5 Operable Units) to EPA. These documents propose monitored natural attenuation as the preferred remedy for groundwater.

The scope included in this WBS element is to decommission wells located in the 100-BC-5 Operable Unit. Work activity includes preparing inventories of unused and/or non-compliant wells, planning and documentation, technical coordination, procurement, labor, subcontract, materials, equipment, field support during construction (e.g., BTR, well site geologist), waste management and project closeout to support decommissioning of unused or non-compliant wells.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**

333 of 473
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<tr>
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<tr>
<td>RL-0030.10.03.01</td>
<td>100-BC-5 Remedy Installation</td>
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</table>

**Scope**

Remediation and closure of the 100-BC-5 OU is coordinated under both the CERCLA Remedial Action and RCRA Corrective TSD Unit Closure process. A final Record of Decision (ROD) for the 100-BC-5 OU is scheduled to be met in October 2018. In 2016, DOE submitted Draft A of the RI/FS report (DOE/RL-2010-96 and Proposed Plan DOE/RL-2016-43, Proposed Plan for Remediation of the 100-BC-1, 100-BC-2, and 100-BC-5 Operable Units) to EPA. These documents propose monitored natural attenuation as the preferred remedy for groundwater.

**Assumptions**

**Requirements**

**TPA Milestones**
# Scope

The scope included in this WBS element includes long term monitoring and drilling new monitoring wells when needed. This scope includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project close out to support drilling wells for groundwater monitoring. Monitoring and reporting involves the technical planning, technical support, purge water management, and reporting for groundwater long term monitoring and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) monitoring on changing contaminant concentrations within the operable unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAPs), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordination of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor. Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include walking down and staking well locations, preparing Descriptions of Work (DOW) for installation of wells with data sheets, preparing Sampling and Analysis Instructions and Data Quality Objective Waste Summary Reports, conducting cultural resource reviews, conducting ecological resources reviews, performing ground penetrating radar surveys for underground utilities, updating site-specific Waste Management Instructions, preparing drilling contracts from SOW and data sheets, preparing necessary permits (e.g., excavation), and preparing preliminary hazard classifications, hazard surveys, and radiological assessments. Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling, installing and developing wells; conducting civil surveys of well locations; providing management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out of activities.

## Assumptions

### Requirements

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

### TPA Milestones

M-016-00
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<th>CWBS Number</th>
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<tr>
<td>CWBS Title</td>
<td>100-KR-4 Operable Unit</td>
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**Scope**

This WBS element includes scope in the 100-KR-4 groundwater operable unit (OU) located on the River Corridor at the Hanford Site. It includes project management; final RI/FS and PP, ROD support, and RDR/RAWP for the operable unit, and any pre-decisional remedial action planning and implementation determined necessary prior to remedial action decision making. Continue to implement the interim remedial action Record of Decision (ROD) and complete groundwater remedial actions as defined in decision documents and supporting documents. Provide operations support, preventative and corrective maintenance, process monitoring, drilling new pump and treat wells/well re-alignments and well decommissioning at KX, KW & KR Pump and Treat (P&T) Facilities. Work includes monitoring and reporting support for annual reports; field studies and deployment activities; final deactivation and decommissioning of the wells at the end of their service lives, and P&T modification and expansions (extraction, injection and monitoring wells) every year.

**Assumptions**

1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.
2. Monitored Natural Attenuation and Technical Impracticability are potential remedial alternatives for limited constituents.
3. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
4. Interim remedies will continue on the River Corridor until superseded by final decisions.
5. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
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<tr>
<td>RL-0030.11</td>
<td>100-KR-4 Operable Unit</td>
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![Map](image-url)
Scope

This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables are of a high quality, and are produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

Provide project management oversight and reporting to support site-wide compliance and regulatory meetings/reporting that are applicable to this Operable Unit. Activities include:

- Support and attend Unit Manager Meetings
- Support and attend public meetings
- Provide quarterly TPA performance and milestone review input
- Management of funds tied to this Operable Unit
- Management of milestones tied to this Operable Unit

Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:

- Management of scope, schedule, and budget for completion of the technical documents
- Subcontractor management
- Ensuring that the technical document are high quality
- Preparation of monthly reports (e.g., technical, not related to cost or schedule)

Baseline management and reporting. Activities include:

- Scope, schedule and cost documentation for the Operable Unit
- Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
- Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

Assumptions

Requirements

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

TPA Milestones

No TPA Milestone
### Scope
This WBS element includes work scope in the 100-KR-4 operable unit located on the River Corridor at the Hanford Site. Work includes submittal of a final Rev. 0 Remedial Investigation/Feasibility Study (RI/FS), a final Rev. 0 Proposed Plan (PP), a final Record of Decision, and a Draft A and Final Rev. 0 Remedial Design/Remedial Action (RD/RAWP) Work Plan. Until such time the final ROD for 100-KR-4 is signed, this WBS will include scope to continue implementation of the interim action record of decision (IAROD) (EPA/ROD/R10-96/134, Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units Interim Remedial Actions, Hanford Site, Benton County, Washington). For the 100-KR-4 operable unit, this ROD is implemented through the Remedial Design/Remedial Action Work Plan for the 100-KR-4 Groundwater Operable Unit Interim Action (DOE/RL-2013-33). Pump and treat (P&T) technology for remediation of hexavalent chromium (Cr-VI) was selected as the interim remedy for the 100-KR-4 OU. It is anticipated that the final ROD will determine that the chosen alternative will be largely in alignment with the current interim remedial actions. It is anticipated that the final 100-K ROD will be signed after contract award.

### Assumptions

### Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

### TPA Milestones
## Scope

The Record of Decision is a legal document that certifies the remedy selection process was carried out in accordance with CERCLA and, to the extent practicable, in accordance with the National Contingency Plan. The ROD outlines the decision based on the nine CERCLA evaluation criteria and statutory requirements. It reassesses the initial determination of the preferred alternatives factoring in any new information or concerns expressed by regulators and public. The ROD must document all responses to comments and substantiate any changes to the selected remedial alternative as presented in the Proposed Plan. At the Hanford Site all RODs are jointly signed by DOE and EPA, with concurrence as appropriate by Ecology management. Upon issue to the Administrative Record DOE must publicize public availability of the ROD.

## Assumptions

1. Draft Revision 0 of the 100-K Remedial Investigation/Feasibility Study Reporis complete by the end of FY19.

## Requirements

### TPA Milestones

Until such time the final ROD for 100-KR-4 is signed, this WBS will include scope to continue implementation of the interim action record of decision (IAROD) (EPA/ROD/R10-96/134, Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units Interim Remedial Actions, Hanford Site, Benton County, Washington). For the 100-KR-4 operable unit, this ROD is implemented through the Remedial Design/Remedial Action Work Plan for the 100-KR-4 Groundwater Operable Unit Interim Action (DOE/RL-2013-33). Pump and treat (P&T) technology for remediation of hexavalent chromium (Cr-VI) was selected as the interim remedy for the 100-KR-4 OU. It is anticipated that the final ROD will determine that the chosen alternative will be largely in alignment with the current interim remedial actions. It is anticipated that the final 100-K ROD will be signed after contract award.

Scope

Until such time the final ROD for 100-KR-4 is signed, this WBS will include scope to continue implementation of the interim action record of decision (IAROD) (EPA/ROD/R10-96/134, Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units Interim Remedial Actions, Hanford Site, Benton County, Washington). For the 100-KR-4 operable unit, this ROD is implemented through the Remedial Design/Remedial Action Work Plan for the 100-KR-4 Groundwater Operable Unit Interim Action (DOE/RL-2013-33). Pump and treat (P&T) technology for remediation of hexavalent chromium (Cr-VI) was selected as the interim remedy for the 100-KR-4 OU. It is anticipated that the final ROD will determine that the chosen alternative will be largely in alignment with the current interim remedial actions. It is anticipated that the final 100-K ROD will be signed after contract award.

Scope in this WBS includes:
• Well drilling in support of KX, KR-4 and KW pump and treat systems
• Pump and treat systems modifications and expansion
• Pump and treat operations support
• KX, KR-4 and KW preventive and corrective maintenance
• Pump and treat systems process monitoring
• Groundwater well re-alignments (i.e., re-configuration among injection, extraction and monitoring wells)
• Pump and treat systems deactivation and decommissioning
• Well decommissioning

For both the Interim ROD, and the future final ROD, this work entails the following scope:

• Well Drilling: Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include walking down and staking well locations, preparing Descriptions of Work (DOW) for installation of wells with data sheets, preparing Sampling and Analysis Instructions and Data Quality Objective Waste Summary Reports, conducting cultural resource reviews, conducting ecological resources reviews, performing ground penetrating radar surveys for underground utilities, updating site-specific Waste Management Instructions, preparing drilling contracts from SOW and data sheets, preparing necessary permits (e.g., excavation), and preparing preliminary hazard classifications, hazard surveys, and radiological assessments.

• 100-KR-4 Operations – Operate the KX, KR-4 and KW pump and treat systems which includes operations support, preventative and corrective maintenance, process monitoring, and well drilling/well re-alignments, and all scope described in the DOE/RL-2013-48 Revision 0, 100-KR-4 Operation and Maintenance Plan for the 100-KR-4 Pump and Treat Systems.

The following systems and process information will be maintained and kept current:
• System description, including an overview of system equipment and treatment processes
• Operating parameters and procedures for the facility, including each of the critical unit processes (e.g., biological systems and air stripping)
• Vendor equipment specifications (e.g., fundamental technical information concerning each unit’s process step, construction materials, and pump curves)
• System O&M information, including equipment manufacturer and vendor-supplied O&M manuals (specific to individual system components or equipment)
• Preventive and corrective maintenance information for monitoring system equipment and process operations
• Standard operating procedures addressing system and component repairs
• Master equipment and spare parts list
• System transient condition response actions and procedures
• Emergency response plan
• Warranty data and information
• Training procedures
• Process liquid stream sampling and reporting requirements

System performance assessment is conducted during operations to monitor P&T system operations to ensure that each system is operating in accordance with the approved specifications, and is operational...
and functional. Data collected during this assessment include the following:

- Process monitoring data
- Performance monitoring data
- Air monitoring data
- Waste management data
- Preventative and corrective maintenance data

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling, installing and developing wells; conducting civil surveys of well locations; providing management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out of activities.

- 100-KR-4 Deactivation and Decommissioning – Decontamination and decommissioning of the 100-KR-4 OU P&T systems will be addressed after DOE, EPA, and the Washington State Department of Ecology determine that active remediation is complete or the treatment system is no longer required. Requirements will be addressed in a final D&D plan, which will be developed and submitted prior to the end of the active remediation period.

- Well Decommissioning – Work activity includes preparing inventories of unused and/or non-compliant wells, planning and documentation, technical coordination, procurement, labor, subcontract, materials, equipment, field support during construction (e.g., BTR, well site geologist), waste management and project closeout to support decommissioning of unused or non-compliant wells.

### Assumptions

<table>
<thead>
<tr>
<th>Requirements</th>
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<tbody>
<tr>
<td>1. Comply with DOE Orders and Directives.</td>
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<tr>
<td>2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.</td>
</tr>
<tr>
<td>3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.</td>
</tr>
<tr>
<td>4. Comply with CERCLA Section 121 and DOE requirements.</td>
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<tr>
<td>5. Comply with RCRA Requirement.</td>
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### TPA Milestones
<table>
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<tr>
<th>CWBS Number</th>
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<tr>
<td>RL-0030.11.03.01</td>
<td>100-KR-4 Remedy Installation</td>
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<th>TPA Milestones</th>
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</table>
Scope
Operate the KX, KR-4 and KW pump and treat systems which includes operations support, preventative and corrective maintenance, process monitoring, and well drilling/well re-alignments, and all scope described in the DOE/RL-2013-48 Revision 0, 100-KR-4 Operation and Maintenance Plan for the 100-KR-4 Pump and Treat Systems.

The following systems and process information will be maintained and kept current:
- System description, including an overview of system equipment and treatment processes
- Operating parameters and procedures for the facility, including each of the critical unit processes
- (e.g., biological systems and air stripping)
- Vendor equipment specifications (e.g., fundamental technical information concerning each unit’s process step, construction materials, and pump curves)
- System O&M information, including equipment manufacturer and vendor-supplied O&M manuals (specific to individual system components or equipment)
- Preventive and corrective maintenance information for monitoring system equipment and process operations
- Standard operating procedures addressing system and component repairs
- Master equipment and spare parts list
- System transient condition response actions and procedures
- Emergency response plan
- Warranty data and information
- Training procedures
- Process liquid stream sampling and reporting requirements

System performance assessment is conducted during operations to monitor P&T system operations to ensure that each system is operating in accordance with the approved specifications, and is operational and functional. Data collected during this assessment include the following:
- Process monitoring data
- Performance monitoring data
- Air monitoring data
- Waste management data
- Preventative and corrective maintenance data

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling, installing and developing wells; conducting civil surveys of well locations; providing management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out of activities.

Assumptions

Requirements

TPA Milestones
### CWBS Number
RL-0030.11.04

### CWBS Title
100-KR-4 Monitoring & Reporting

## Scope
This WBS element represents long-term monitoring and drilling new monitoring wells. Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project closeout to support drilling wells for groundwater monitoring. Monitoring and reporting involves the technical planning, technical support, purging water management, and reporting for groundwater long-term monitoring and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) monitoring on changing contaminant concentrations within the operable unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAPs), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordination of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include walking down and staking well locations, preparing Descriptions of Work (DOW) for installation of wells with data sheets, preparing Sampling and Analysis Instructions and Data Quality Objective Waste Summary Reports, conducting cultural resource reviews, conducting ecological resource reviews, performing ground penetrating radar surveys for underground utilities, updating site-specific Waste Management Instructions, preparing drilling contracts from SOW and data sheets, preparing necessary permits (e.g., excavation), and preparing preliminary hazard classifications, hazard surveys, and radiological assessments.

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling, installing and developing wells; conducting civil surveys of well locations; providing management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out of activities.

## Assumptions

## Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

## TPA Milestones
M-016-00
## Assumptions

1. Remedy evaluations are necessary to ensure RAO’s and ROD requirements are being met and necessary planning required for remedy system upgrades.  
2. Monitored Natural Attenuation and Technical Impracticability are potential remedial alternatives for limited constituents.  
3. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.  
4. Interim remedies will continue on the River Corridor until superseded by final decisions.  
5. Assume that the 100-N Final Remedy is an apatite barrier as described in the interim Record of Decision and Remedial Design Remedial Action Work Plan.  
6. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

## Requirements

1. Comply with DOE Orders and Directives.  
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.  
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.  
4. Comply with CERCLA Section 121 and DOE requirements.  
5. Comply with RCRA Requirement.  
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<tbody>
<tr>
<td>CWBS Title</td>
<td>100-NR-2 Operable Unit</td>
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![Map Image](image-url)
**Scope**

This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables are of a high quality, and are produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

Provide project management oversight and reporting to support site-wide compliance and regulatory meetings/reporting that are applicable to this Operable Unit. Activities include:

- Support and attend Unit Manager Meetings
- Support and attend public meetings
- Provide quarterly TPA performance and milestone review input
- Management of funds tied to this Operable Unit
- Management of milestones tied to this Operable Unit

Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:

- Management of scope, schedule, and budget for completion of the technical documents
- Subcontractor management
- Ensuring that the technical documents are high quality
- Preparation of monthly reports (e.g., technical, not related to cost or schedule)

Baseline management and reporting. Activities include:

- Scope, schedule and cost documentation for the Operable Unit
- Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
- Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**

No TPA Milestone
## CWBS Number
RL-0030.12.02

## CWBS Title
100-NR-2 Decision Documents

### Scope
This WBS element represents the 100-NR-2 waste site operable units located within the River Corridor at the Hanford Site. It includes submittal of a final Proposed Plan (PP) Report, ROD support and a Remedial Design/Removal Action (RD/RAWP) Work Plan.

### Assumptions

### Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

### TPA Milestones
Scope
The Proposed Plan is generated based on the information provided and decisions made during the RI/FS phase. It is a primary document as outlined in the Tri-Party Agreement. The Proposed Plan is DOE’s primary recommendation on how best to address contamination at the site, and presents evaluated alternatives and reasoning behind the preferred alternative. The connection between the Proposed Plan and the RI/FS Report should be explained.
At a minimum the final Proposed Plan must provide a brief summary of the remedial actions evaluated, provide a rationale for the decision, include a brief summary of formal comments by regulators and provide explanations of any proposed ARAR waivers. The final proposed plan is issued by DOE and the lead regulator. The concurrence of the non-lead regulator is typically sought prior to plan release for public comment. A summary indicating the regulator’s concurrence with the recommended alternative should also be included. The complete evaluation comparing the alternative to the FS Report using the CERCLA Criteria for Remedial Action Evaluation is required. As a good practice the Proposed Plan should include a Fact Sheet for the benefit of the general public. The Proposed Plan will be available for public comment for a specific amount of time, usually 30 days. The process for public comments is outlined in the Tri-Party Agreement section 10.6. In the event new information comes to light constituting major changes to the Proposed Plan these can be addressed through the Pre-ROD changes process outlined in the CERCLA regulations. EPA guidance, A Guide to Preparing Superfund Proposed Plans, Records of Decision, and other Remedy Selection Decision Documents (540-R-98-031) is an important resource for preparation of the Proposed Plan and Record of Decision.

Assumptions
1. Draft Revision 0 of the 100-N Area Remedial Investigation/Feasibility Study Report is complete by the end of FY19.

Requirements
TPA Milestones
### CWBS Number
RL-0030.12.03

### CWBS Title
100-NR-2 Remedial/Removal Action Implementation

### Scope
The scope in this WBS is for the 100-NR-2 Operable Unit, located in the northwest Hanford Site. Groundwater beneath the 100-N Area of the Hanford Site has been contaminated with various Strontium-90, metals, petroleum hydrocarbons, and ionic constituents (e.g. nitrate) from the wastewater disposal practices and spills associated with N Reactor operations. Cleanup activities are being performed in accordance with the requirements of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

In 2010, the Amended Interim Remedial Action Record of Decision for the 100-NR-1/NR-2 Operable Units of the Hanford 100-N Area (EPA, 2010) was signed that established the requirement to install and maintain a permeable reactive barrier (PRB) for the 100-NR-2 Groundwater Operable Unit (OU). This amended I-ROD replaced the pump and treat system with a 2,500 foot long apatite barrier along the edge of the Columbia River.

Scope in this WBS element includes:
- Performance monitoring, operation and maintenance of the PRB
- Performance monitoring, operation and maintenance of the bio-venting system
- Deactivation, dismantling and disposal of the bioventing system
- Groundwater well decommissioning

Performance monitoring will be conducted to confirm the effectiveness of the apatite PRB. The apatite PRB will complement the existing interim remedial actions that are underway or have already been completed in the 100-NR-2 Groundwater OU. The existing interim actions include institutional controls (ICs) to control land and groundwater use, free-phase hydrocarbon removal, and groundwater monitoring.

Scope includes continued operation and maintenance of the 100-NR-1 Operable Unit Bioventing System. Scope also includes preparing and maintaining operating and maintenance procedures, training personnel, maintaining and modifying existing documents such as engineering drawings, performing monthly gas monitoring and reporting, and conducting semi-annual respirometry testing of the bioventing system.

The D&D of the bio-remediation system will consist of no more than four tons of waste that can be disposed of without further treatment at ERDF, excessing or returning to inventory any usable equipment, and transportation costs to move two ‘Conex’ boxes (this container type currently houses the existing bio-venting system). D&D of the bioremediation systems will occur in 2027.

The well decommissioning work activity includes preparing inventories of unused and/or non-compliant wells, planning and documentation, technical coordination, procurement, labor, subcontract, materials, equipment, field support during construction (e.g., BTR, well site geologist), waste management and project closeout to support decommissioning of unused or non-compliant wells.

### Assumptions

### Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

### TPA Milestones

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351 of 473
<table>
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<tr>
<td>TPA Milestones</td>
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</table>
**Scope**

This WBS element provides the technical planning and reporting for groundwater long term monitoring and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) monitoring project. Technical planning includes review of all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Once Record of Decision documents have been completed, groundwater monitoring shall be performed under this cost account. This includes updating sampling and analysis plans. Support includes review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary. Provide text and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report. Provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document and any additional wells constructed under this contract. Coordination of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by Contractor. Evaluation of data from previous pump and treat area is done under Interim Action Monitoring. Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project close out to support drilling wells for groundwater monitoring.

Monitoring and reporting involves the technical planning, technical support, purge water management, and reporting for groundwater long term monitoring and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) monitoring on changing contaminant concentrations within the operable unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAPs), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordination of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations and prepare preliminary hazard classifications, hazard surveys, and radiological assessments. Where possible use or modify existing documentation to plan the work. Tasks include walking down and staking well locations, preparing Descriptions of Work (DOW) for installation of wells with data sheets, preparing Sampling and Analysis Instructions and Data Quality Objective Waste Summary Reports, conducting cultural resource reviews, conducting civil surveys of well locations, conducting ecological resources reviews, performing ground penetrating radar surveys for underground utilities, updating site-specific Waste Management Instructions, preparing drilling contracts from SOW and data sheets, preparing necessary permits (e.g., excavation), preparation of well roads and pads; preparation of subcontract documents; drilling, installing and developing wells, providing management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out of activities.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.

**TPA Milestones**

M-016-00
Scope
This WBS element includes scope in the 100-HR-3 groundwater operable unit (OU) located on the River Corridor at the Hanford Site. It includes project management and operation and maintenance of the DX and HX Pump & Treat Facilities. Continue to implement the interim remedial action Record of Decision (ROD) and complete groundwater unit actions as defined in decision documents and supporting documents. Provide operations support, preventative and corrective maintenance, process monitoring, drilling new pump and treat wells/well re-alignments and well decommissioning in the HR-3 and DR-2 operable units. Work includes monitoring and reporting support for annual reports, operable unit modification and expansions of extraction, injection, and monitoring wells.

Assumptions
1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.
2. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
3. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
Scope
This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables are of a high quality, and are produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

Provide project management oversight and reporting to support site-wide compliance and regulatory meetings/reporting that are applicable to this Operable Unit. Activities include:

- Support and attend Unit Manager Meetings
- Support and attend public meetings
- Provide quarterly TPA performance and milestone review input
- Management of funds tied to this Operable Unit
- Management of milestones tied to this Operable Unit

Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:

- Management of scope, schedule, and budget for completion of the technical documents
- Subcontractor management
- Ensuring that the technical document are high quality
- Preparation of monthly reports (e.g., technical, not related to cost or schedule)

Baseline management and reporting. Activities include:

- Scope, schedule and cost documentation for the Operable Unit
- Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
- Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

Assumptions
Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.

TPA Milestones
No TPA Milestone
At this writing, a final ROD for the 100-D/H area is prepared but unsigned; until such time the final ROD is signed, this WBS will include scope to continue implementation of the interim action record of decision (IAROD) (EPA/ROD/R10-96/134, Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units Interim Remedial Actions, Hanford Site, Benton County, Washington). It is anticipated that the final 100-D/H ROD will be signed prior to contract award.

Scope in this WBS includes:
• Well drilling in support of HX and DX pump and treat systems
• Pump and treat systems modifications and expansion
• Pump and treat operations support
• HX and DX preventive and corrective maintenance
• Pump and treat systems process monitoring
• Groundwater well re-alignments (i.e., re-configurations among injection, extraction and monitoring wells)
• Pump and treat systems deactivation and decommissioning
• Well decommissioning

Pump and treat (P&T) technology for remediation of hexavalent chromium (Cr-VI) was selected as the interim remedy for the 100-HR-3 OU (which includes the 100-DR-2 groundwater Operable Unit). The remedy was refined by an amendment in 1999 (EPA/AMD/R10-00/122, Interim Remedial Action Record of Decision Amendment for the 100-HR-3 Operable Unit, Hanford Site, Benton County, Washington) to include in situ chemical treatment through installation of an in situ redox manipulation (ISRM) barrier as an additional interim remedy for a Cr -VI groundwater plume west of the 100-D/DR Reactors. DOE, EPA and Ecology later agreed that the DX pump and treat system would provide adequate protection of the river, and that barrier maintenance could be discontinued.

It is anticipated that the final ROD will determine that the chosen alternative will be largely in alignment with the current interim remedial actions.

Therefore, for both the Interim ROD, and the future final ROD, this work includes:
• 100-HR-3 Operations – Operate the DX and HX Pump and Treat Systems which includes operations support, preventative and corrective maintenance, process monitoring, and well drilling/well re-alignments, and all scope described in the DOE/RL-2013-49 Revision 0, 100-HR-3 Pump and Treat System Operations and Maintenance Plan. The following systems and process information will be maintained and kept current:
  • System description, including an overview of system equipment and treatment processes
  • Operating parameters and procedures for the facility, including each of the critical unit processes (e.g., biological systems and air stripping)
  • Vendor equipment specifications (e.g., fundamental technical information concerning each unit’s process step, construction materials, and pump curves)
  • System O&M information, including equipment manufacturer and vendor-supplied O&M manuals (specific to individual system components or equipment)
  • Preventive and corrective maintenance information for monitoring system equipment and process operations
  • Standard operating procedures addressing system and component repairs
  • Master equipment and spare parts list
  • System transient condition response actions and procedures
  • Emergency response plan
  • Warranty data and information
  • Training procedures
  • Process liquid stream sampling and reporting requirements

System performance assessment is conducted during operations to monitor P&T system operations to ensure that each system is operating in accordance with the approved specifications, and is operational and functional. Data collected during this assessment include the following:
• Process monitoring data
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<tbody>
<tr>
<td>CWBS Title</td>
<td>100-HR-3 Remedial/Removal Action Implementation</td>
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</table>

- Performance monitoring data
- Air monitoring data
- Waste management data
- Preventative and corrective maintenance data

100-HR-3 Deactivation and Decommissioning – Decontamination and decommissioning of the 100-HR-3 OU P&T systems will be addressed after DOE, EPA, and the Washington State Department of Ecology determine that active remediation is complete or the treatment system is no longer required. Requirements will be addressed in a final D&D plan, which will be developed and submitted prior to the end of the active remediation period.

Well Decommissioning – Work activity includes preparing inventories of unused and/or non-compliant wells, planning and documentation, technical coordination, procurement, labor, subcontract, materials, equipment, field support during construction (e.g., BTR, well site geologist), waste management and project closeout to support decommissioning of unused or non-compliant wells.

Assumptions

Requirements

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.

TPA Milestones
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0030.13.03.02</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>100-HR-3 Operations</td>
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</table>

**Scope**

- 100-HR-3 Operations – Operate the DX and HX Pump and Treat Systems which includes operations support, preventative and corrective maintenance, process monitoring, and well drilling/well realignments, and all scope described in the DOE/RL-2013-49 Revision 0, 100-HR-3 Pump and Treat System Operations and Maintenance Plan. The following systems and process information will be maintained and kept current:
  - System description, including an overview of system equipment and treatment processes
  - Operating parameters and procedures for the facility, including each of the critical unit processes
  - Vendor equipment specifications (e.g., fundamental technical information concerning each unit’s process step, construction materials, and pump curves)
  - System O&M information, including equipment manufacturer and vendor-supplied O&M manuals (specific to individual system components or equipment)
  - Preventive and corrective maintenance information for monitoring system equipment and process operations
  - Standard operating procedures addressing system and component repairs
  - Master equipment and spare parts list
  - System transient condition response actions and procedures
  - Emergency response plan
  - Warranty data and information
  - Training procedures
  - Process liquid stream sampling and reporting requirements

System performance assessment is conducted during operations to monitor P&T system operations to ensure that each system is operating in accordance with the approved specifications, and is operational and functional. Data collected during this assessment include the following:

- Process monitoring data
- Performance monitoring data
- Air monitoring data
- Waste management data
- Preventative and corrective maintenance data

**Assumptions**

**Requirements**

**TPA Milestones**
### CWBS Dictionary Sheet

<table>
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<tr>
<td>RL-0030.13.04</td>
<td>100-HR-3 Monitoring &amp; Reporting</td>
</tr>
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</table>

#### Scope
This WBS element includes scope for technical planning and reporting for groundwater long term monitoring and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) monitoring. Technical planning includes review of all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Once Record of Decision documents have been completed, groundwater monitoring shall be performed under this cost account. This includes updating sampling and analysis plans. Support includes review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary. Provide text and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report. Provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document, and any wells installed under this contract. Coordination of both the annual groundwater and environmental reports is done by the National Laboratory Contractor, with supervision by the Contractor. Evaluation of pump and treat data is done under Interim Action Monitoring.

#### Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.

#### Assumptions

#### TPA Milestones

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<td>CWBS Title</td>
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**Assumptions**
1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.
2. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
3. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

**Requirements**
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.

**Scope**
This WBS element includes scope in the 100-FR-3 groundwater operable unit (OU) located on the River Corridor at the Hanford Site. Continue to implement the final Record of Decision. Work includes monitoring and reporting support, operable unit modification and expansions, field studies and deployment activities, well design and construction, and final deactivation and decommissioning of the wells at the end of their service lives.
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<th>CWBS Number</th>
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<tr>
<td>RL-0030.14</td>
<td>100-FR-3 Operable Unit</td>
</tr>
</tbody>
</table>

![Map of Operable Unit](image-url)
**Scope**

This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables are of a high quality, and are produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

1) Provide project management oversight and reporting to support site-wide compliance and regulatory meetings/reporting that are applicable to this Operable Unit. Activities include:

- Support and attend Unit Manager Meetings
- Support and attend public meetings
- Provide quarterly TPA performance and milestone review input
- Management of funds tied to this Operable Unit
- Management of milestones tied to this Operable Unit

2) Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:

- Management of scope, schedule, and budget for completion of the technical documents
- Subcontractor management
- Ensuring that the technical document are high quality
- Preparation of monthly reports (e.g., technical, not related to cost or schedule)

3) Baseline management and reporting. Activities include:

- Scope, schedule and cost documentation for the Operable Unit
- Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
- Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.

**TPA Milestones**

No TPA Milestone
**CWBS Number**
RL-0030.14.03

**CWBS Title**
100-FR-3 Remedial/Removal Action Implementation

**Scope**
EPA signed a CERCLA ROD in September 2014, Record of Decision Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100-FR-3, 100-UI-2 and 100-IU-6 Operable Units. The selected remedy for groundwater is monitored natural attenuation (MNA). DOE monitors 100-FR groundwater to meet CERCLA and AEA requirements. The scope in this WBS element includes well decommissioning in the 100-FR-3 Operable Unit.

The well decommissioning work scope includes preparing inventories of unused and/or non-compliant wells, planning and documentation, technical coordination, procurement, labor, subcontract, materials, equipment, field support during construction (e.g., BTR, well site geologist), waste management and project closeout to support decommissioning of unused or non-compliant wells.

**Assumptions**

**Requirements**
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**
### Scope

This WBS element represents long-term monitoring and drilling new wells. Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project closeout to support drilling wells for groundwater monitoring.

EPA signed a CERCLA ROD in September 2014 (EPA et al. 2014, Record of Decision Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units). The selected remedy for groundwater is monitored natural attenuation (MNA). DOE monitors 100-FR groundwater to meet CERCLA and AEA requirements. The CERCLA groundwater SAP (Appendix A of DOE/RL-2014-44-ADD2) requires monitoring the TCE degradation products vinyl chloride and cis-1,2-dichloroethene in selected wells during the MNA remedy.

Monitoring and reporting involves the technical planning, technical support, purgewater management, and reporting for groundwater long-term monitoring and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) monitoring project on changing contaminant concentrations within the Operable Unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAP), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordinate of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include stake wells and walk down, prepare Description of Work (DOW) for installation of wells with data sheets, prepare Sampling and Analysis Instructions and Data Quality Objective Waste Summary Report, conduct cultural resources review, conduct ecological resources review, perform Ground Penetrating Radar surveys for underground utilities, update Site-Specific Waste Management Instructions, prepare drilling contract from SOW and data sheets, prepare necessary permits (e.g., excavation), and prepare preliminary hazard classification, hazard survey, and radiological assessment.

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling and installing wells; conducting civil surveys of well locations; provide management support, labor support, and associated documentation (e.g., completion (summary) reports), and closeout activities.

### Assumptions

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
**Scope**

This WBS element represents the 200-BP-5 and 200-PO-1 groundwater operable units (OUs) located on the Central Plateau at the Hanford Site. These OUs include project management; a PP, ROD support, RD/RAWP for the operable unit; and any pre-decisional removal action planning and implementation determined necessary prior to remedial action decision making.

**Assumptions**

1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.
2. Source area final decisions are required before final groundwater OU decisions.
3. Monitored Natural Attenuation and Technical Impracticability are potential remedial alternatives for limited constituents.
4. OU structure could change to facilitate accelerated cleanup.
5. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
6. Interim decisions may be necessary steps before a final decision can be obtained (source area contributors to groundwater need to be assessed before an integrated source and groundwater decision can be made).
7. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
| CWBS Number | RL-0030.20.01 |
| CWBS Title | 200-BP-5 Project Management |

**Scope**

Provide the overall project management and leadership of the operable units’ decision processes which includes managing the resources; project technical, scope, cost, schedule and contract baselines; and the contract, subcontracts, projects, and regulatory interface processes that support these OUs. A primary objective of this WBS sub element is to ensure project deliverables for are of a high quality, produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract. The major work scope includes the following items. Prepare change documents tied to these operable units (e.g., TPA change requests, baseline change requests, deviation notices). Prepare monthly, quarterly, and annual reports (e.g., cost and schedule performance) tied to these operable units. Prepare and maintain budgets and schedules, strategies (to include possible modifications to OU structure/composition). Coordinate document development; implementation of documents; decision-making negotiation support; maintaining site-wide regulatory compliance; regulator interface meetings; technical coordination and integration with adjoining source unit and associated groundwater operable unit work scope and CA/CIE development. Also coordinate field characterization with groundwater monitoring well installation, evaluation and reporting for RCRA TSD’s, CERCLA Operable Units (OU), and other permitted facilities and sites as required to optimize the characterization data available to support key decisions. Provide any necessary labor, equipment, materials, processes, subcontracts, and support necessary to develop, maintain, implement, and complete work scope associated with this element.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**

No TPA Milestone
### CWBS Number
RL-0030.20.03

### CWBS Title
200-BP-5 Remedial/Removal Action Implementation

### Scope

The BP groundwater area includes 200-BP-5 Groundwater OU and six RCRA sites, extends from the northern portion of the 200 East Area northwest to the Columbia River shoreline. Groundwater conditions in 200-BP-5 include a perched zone; unconfined; semiconfined; and confined aquifers. The 200-BP-5 RI/FS (DOE/RL-2009-127, Remedial Investigation Report for the 200-BP-5 Groundwater Operable Unit) summarizes the sources of groundwater contamination. DOE/RL-2017-11 Draft A Removal Action Work Plan for the 200-BP-5 Operable Unit Groundwater Extraction implements the removal action for contaminated groundwater and was prepared according to CERLA. The RAWP implements DOE/RL-2016-41, Action Memorandum for 200-BP-5 Operable Unit Groundwater Extraction. The Tri- Parties selected groundwater extraction and treatment to remediate elevated concentrations of uranium and Tc-99 from the B Complex area of the 200-BP-5 OU. Contaminated groundwater is pumped at a rate of up to 150 gal/min for treatment at the 200 West Pump and Treat Facility. The extracted groundwater is conveyed via an above ground pipeline, and the treated water is injected in the 200 West Area.

This WBS element will involve assessment and determination if there are any additional requirements to effect remediation of the 200-BP-5 OU. This work element will include interfacing with work being performed by ORP concerning past leaks and losses at WMA C tank farm; identification of any necessary treatment system and associated infrastructure needs, which could include a well network based on a Removal Action Work Plan (RAWP) and associated technical evaluations to treat contaminants of concern that were released at WMAs C and A/AX, collect data and information that will inform the 200-BP-5 and 200-PO-1 Feasibility Study. Support DOE in technical documentation and regulatory compliance including evaluations to support TI waivers and Alternative Points of compliance through establishment of a groundwater WMA.

ORP Interface/Integration can support this effort as follows:

- As part of the Appendix I Performance Assessment (IPA) being performed by the ORP TOC, an analysis of past leaks will be performed to estimate the continuing flux of contaminants to groundwater and to determine the potential impact to the underlying groundwater from the vadose zone contaminated by past leaks and losses at WMA C. Those continuing impacts from past leaks are being assessed to gain an understanding of the need for remedial actions being considered under the WMA C RCRA Facility Investigation/Corrective Measures Study being prepared by ORP TOC. The results of that analysis will inform the overall 200-BP-5 groundwater assessment.
- The 200-BP-5 CERCLA process will evaluate GW remediation alternatives for the entire BP-5 operable unit including potential actions to address continuing contamination from past releases at WMA C. The 200-BP-5 ROD will select remedial actions for groundwater.
- The IPA is to also evaluate longer-term impacts to groundwater from tank residuals. The ORP TOC closure actions for tanks and ancillary equipment containing residual wastes will be designed to ensure that impacts from tank residuals do not exceed groundwater protection standards in the future.

This work element also includes continued regulatory support to address issues such as groundwater modeling such as:

- Information related to the calibration or construction of the P2R model (calibration process, mass balance, input parameters, source terms, groundwater flow velocity, sensitivity analyses, Tank Closure and Waste Management Environmental Impact Statement calibration information), and
- Information related to source areas vadose zone models.

- RL has committed through the approved 200-DV-1 and 200-SW-2 Remedial Investigation/Feasibility Study Work Plans to develop a cumulative impacts evaluation that will integrate source area (vadose zone) models with the CERCLA groundwater model. Support will be provided to RL in conducting and applying the results of the cumulative impacts evaluation in support of remediation decisions across the Central Plateau.

Implement the 200-BP-5 Remedial Design/Remedial Action Work Plan to expand the BP-5 well network to address WMAs C and A/AX or PO-1 – EE/CA/Action Memo/RAWP including modeling for pre-design to understand capacity needs for Tc-99 and Cyanide Facility upgrades at BP-5 including slab, 400 gpm from WMA C and A/AX Areas, extraction wells, injection wells, monitoring wells, Cyanide treatment at 200W P&T or at well head, Operations and Maintenance for lifetime due to continuing sources in Vadose Zone, extend piping from BP-5 to WMA C and A/AX.

### Assumptions

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
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<td>RL-0030.20.03</td>
<td>200-BP-5 Remedial/Removal Action Implementation</td>
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TPA Milestones

370 of 473
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<th>CWBS Number</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>200-BP-5 Remedy Installation</td>
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**Scope**
Implement the 200-BP-5 Remedial Design/Remedial Action Work Plan to expand the BP-5 well network to address WMAs C and A/AX or PO-1 – EE/CA/Action Memo/RAWP including modeling for pre-design to understand capacity needs for Tc-99 and Cyanide Facility upgrades at BP-5 including slab, 400 gpm from WMA C and A/AX Areas, extraction wells, injection wells, monitoring wells, Cyanide treatment at 200W P&T or at well head, Operations and Maintenance for lifetime due to continuing sources in Vadose Zone, extend piping from BP-5 to WMA C and A/AX.

**Assumptions**

**Requirements**

**TPA Milestones**
M-016-00, M-016-119-T01
**Scope**

This WBS element represents long-term monitoring and drilling new wells. Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project closeout to support drilling wells for groundwater monitoring.

Monitoring and reporting involves the technical planning, technical support, purgewater management, and reporting for groundwater long-term monitoring and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) monitoring project on changing contaminant concentrations within the Operable Unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAP), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordinate of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include stake wells and walk down, prepare Description of Work (DOW) for installation of wells with data sheets, prepare Sampling and Analysis Instructions and Data Quality Objective Waste Summary Report, conduct cultural resource review, conduct ecological resource review, perform Ground Penetrating Radar surveys for underground utilities, update Site-Specific Waste Management Instructions, prepare drilling contract from SOW and data sheets, prepare necessary permits (e.g., excavation), and prepare preliminary hazard classification, hazard survey, and radiological assessment.

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling and installing wells; conducting civil surveys of well locations; provide management support, labor support, and associated documentation (e.g., completion (summary) reports), and closeout activities.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**

M-016-00
**Sample Document Content:**

**CWBS Number**
RL-0030.21

**CWBS Title**
200-PO-1 Operable Unit

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<td>This WBS element represents the 200-BP-5 and 200-PO-1 groundwater operable units (OUs) located on the Central Plateau at the Hanford Site. These OUs include project management; a PP, ROD support, RD/RAWP for the operable unit; and any pre-decisional removal action planning and implementation determined necessary prior to remedial action decision making.</td>
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<th>Assumptions</th>
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<tbody>
<tr>
<td>1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.</td>
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<tr>
<td>2. Source area final decisions are required before final groundwater OU decisions.</td>
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<td>3. Monitored Natural Attenuation and Technical Impracticability are potential remedial alternatives for limited constituents.</td>
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<tr>
<td>4. OU structure could change to facilitate accelerated cleanup.</td>
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<td>5. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.</td>
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<tr>
<td>6. Interim decisions may be necessary steps before a final decision can be obtained (source area contributors to groundwater need to be assessed before an integrated source and groundwater decision can be made).</td>
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<tr>
<td>7. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.</td>
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<th>Requirements</th>
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**Scope**

Provide the overall project management and leadership of the operable units’ decision processes which includes managing the resources; project technical, scope, cost, schedule and contract baselines; and the contract, subcontracts, projects, and regulatory interface processes that support these OUs. A primary objective of this WBS sub element is to ensure project deliverables are of a high quality, produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract. The major work scope includes the following items. Prepare change documents tied to these operable units (e.g., TPA change requests, baseline change requests, deviation notices). Prepare monthly, quarterly, and annual reports (e.g., cost and schedule performance) tied to these operable units. Prepare and maintain budgets and schedules, strategies (to include possible modifications to OU structure/composition). Coordinate document development; implementation of documents; decision-making negotiation support; maintaining site-wide regulatory compliance; regulator interface meetings; technical coordination and integration with adjoining source unit and associated groundwater operable unit work scope and CA/CIE development. Also coordinate field characterization with groundwater monitoring well installation, evaluation and reporting for RCRA TSD’s, CERCLA Operable Units (OU), and other permitted facilities and sites as required to optimize the characterization data available to support key decisions. Provide any necessary labor, equipment, materials, processes, subcontracts, and support necessary to develop, maintain, implement, and complete work scope associated with this element.

**Assumptions**

**Requirements**

**TPA Milestones**
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**Scope**

This WBS element represents long-term monitoring and drilling new wells — Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project close out to support drilling wells for groundwater monitoring.

Monitoring and reporting involves the technical planning, technical support, purgewater management, and reporting for groundwater long-term monitoring and Comprehensive Environmental Response, compensations, and Liability Act of 1980 (CERCLA) monitoring project on changing contaminant concentrations within the Operable Unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAP), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordinate of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include stake wells and walk down, prepare Description of Work (DOW) for installation of wells with data sheets, prepare Sampling and Analysis Instructions and Data Quality Objective Waste Summary Report., conduct cultural resources review, conduct ecological resources review, perform Ground Penetrating Radar surveys for underground utilities, update Site-Specific Waste Management Instructions, prepare drilling contract from SOW and data sheets, prepare necessary permits (e.g., excavation), and prepare preliminary hazard classification, hazard survey, and radiological assessment.

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling and installing wells; conducting civil surveys of well locations; provide management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out activities.

**Assumptions**

**Requirements**

**TPA Milestones**

M-016-00
### CWBS Number
RL-0030.22

### CWBS Title
200-UP-1 Operable Unit

#### Scope
This WBS element represents the 200-UP-1 groundwater operable unit (OU) located on the Central Plateau at the Hanford Site. Continue to support and implement the interim and final “Record of Decision” and complete source unit actions as defined. Work includes operation and maintenance of the remedy installation system. Work includes well drilling, monitoring and reporting support; operable unit modification and expansions; field studies and deployment activities; and final deactivation and commissioning of the operable unit at the end of life.

- **Project Management** - Provide the overall project management and leadership of the various operable units to include work activities as follows: management, planning (to include modifications to OU structure/composition) and documentation, decision-maker negotiations, site-wide compliance, regulator meetings, and technical coordination and integration with groundwater operable unit work scope.
- **Remedial/Removal Action Implementation** – Determine the size and extent of the hexavalent chromium plume and recommend treatment based on characterization results. Complete implementation of potential remedy for Iodine 129 if needed.
- **Monitoring and Reporting** - The tasks associated are long term operable unit monitoring, remediation systems performance monitoring, and associated reporting requirements. Long term monitoring involves technical planning, technical support, and purge water management.

Development and management of the baseline:
1. Scope, schedule and cost documentation tied to these operable units.
2. Preparation of change documents tied to these operable units (e.g., TPA change requests, baseline change requests, deviation notices).
3. Preparation of monthly reports (e.g., cost and schedule performance) tied to these operable units.

#### Assumptions
1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.
2. Source area final decisions are required before final groundwater OU decisions.
3. Monitored Natural Attenuation and Technical Impracticability are potential remedial alternatives for limited constituents.
4. OU structure could change to facilitate accelerated cleanup.
5. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
6. Interim decisions may be necessary steps before a final decision can be obtained (source area contributors to groundwater need to be assessed before an integrated source and groundwater decision can be made).
7. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

#### Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
<table>
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<th>CWBS Number</th>
<th>CWBS Title</th>
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</thead>
<tbody>
<tr>
<td>RL-0030.22</td>
<td>200-UP-1 Operable Unit</td>
</tr>
</tbody>
</table>
Scope

This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables are of a high quality, produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

1) Provide project management oversight and reporting to support site-wide compliance and regulatory meetings/reporting that are applicable to this Operable Unit. Activities include:
   - Support and attend Unit Manager Meetings
   - Support and attend public meetings
   - Provide quarterly TPA performance and milestone review input
   - Management of funds tied to this Operable Unit
   - Management of milestones tied to this Operable Unit

2) Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:
   - Management of scope, schedule, and budget for completion of the technical documents
   - Subcontractor management
   - Ensuring that the technical document are high quality
   - Preparation of monthly reports (e.g., technical, not related to cost or schedule)
   - Annual updates to regulatory documents.

3) Baseline management and reporting. Activities include:
   - Scope, schedule and cost documentation for the Operable Unit
   - Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
   - Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

Assumptions

Requirements

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

TPA Milestones

No TPA Milestone
CWBS Number
RL-0030.22.03

CWBS Title
200-UP-1 Remedial/Removal Action Implementation

Scope
This WBS element is to construct a pump and (ion exchange) treatment system that will allow for processing and treatment of up to 1000 gallons per minute (gpm) of contaminated hexavalent chromium groundwater in the 200-UP-1 Operable Unit. The treatment system may have to address other OU COC’s. The project will include a treatment system, extraction, injection, and monitoring well network. The system will have a 15 to 25 year design life and operate unattended twenty-four hours per day, seven days per week. The system will include double-walled high-density polypropylene pipe (HDPE) conveyance lines, power cables, extraction and injection well head equipment. The contractor will perform an evaluation to optimize the treatment capacity and well network design to meet regulatory requirements. The system capability and design life will be based on characterization and extent of contamination. Information will be available to the contractor for design, construction, and operations based on 100/200 Area ion exchange designs. Complete implementation of potential remedy for Iodine 129, if needed.

Project Management/technical activities includes:
• Oversight, planning, sampling, and data evaluation associated with the support of the 200-UP-1 Southeast Chromium Plume Remedial Design Investigation
• Revise/update the 200-UP-1 RD/RAWP associated with changes to TPA milestone M-16-193, as required
• Update the 200-UP-1 OU groundwater conceptual site model (CSM) and groundwater model, to reflect current conditions and capture zone analyses, and to improve cleanup predictions
• Support DOE in technical documentation and regulatory compliance including evaluations to support TI waivers and Alternative Points of compliance through establishment of a groundwater WMA
• Perform evaluations and prepare design modification, as required

Specific procurement and construction work elements could include:
• Complete procurement actions for long-lead items, prepare subcontract statements of work, issue for bid, evaluate proposals, and receiving for installation
• Install the pipeline from well to the 200 West Pump & Treat facility by placing and fuse welding DWHDPE pipe
• Perform QC Testing to ensure welds meet specifications
• Fabricate and install well racks and components at well
• Install extraction well pump in well
• Provide engineering support during construction including design authority, quality control interface and identifying and documenting CAT/ATP testing requirements
• Provide construction management support including first line supervision, and craft support
• Provide procurement and subcontract management support
• Perform and support the construction acceptance test (CAT) / acceptance test procedure (ATP), as needed
• Perform project closeout activities including close out of contracts, work packages, billing, turnover systems to the 200W P&T Operations, as-built drawings, punch lists, etc.
• Install gravel and/or paved roads
• Install a pipe trench and pipe vault at the RAD Bldg. of the 200W P&T for pipeline access to the facility
• Perform internal 200W P&T facility modifications including new piping and instrumentation to connect the feed from the well to the treatment facility.

Assumptions

Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

TPA Milestones
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<tbody>
<tr>
<td>RL-0030.22.04</td>
<td>200-UP-1 Monitoring &amp; Reporting</td>
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</table>

**Scope**

This WBS element represents long-term monitoring and drilling new pump and treat wells – Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project close out to support drilling wells for groundwater monitoring. Monitoring and reporting involves the technical planning, technical support, purgewater management, and reporting for groundwater long-term monitoring and Comprehensive Environmental Response, compensations, and Liability Act of 1980 (CERCLA) monitoring project on changing contaminant concentrations within the Operable Unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAP), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordinate of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include stake wells and walk down, prepare Description of Work (DOW) for installation of wells with data sheets, prepare Sampling and Analysis Instructions and Data Quality Objective Waste Summary Report, conduct ecological resources review, perform Ground Penetrating Radar surveys for underground utilities, update Site-Specific Waste Management Instructions, prepare drilling contract from SOW and data sheets, prepare necessary permits (e.g., excavation), and prepare preliminary hazard classification, hazard survey, and radiological assessment.

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling and installing wells; conducting civil surveys of well locations; provide management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out activities.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**

### CWBS Number
**RL-0030.23**

### CWBS Title
**200-ZP-1 Operable Unit**

## Scope

This WBS element represents the 200-ZP-1 groundwater operable unit (OU) located on the Central Plateau at the Hanford Site. Continue to support and implement the interim and final “Record of Decision” and complete source unit actions as defined. Work includes operation and maintenance of the remedy installation system. Work includes well drilling, monitoring, and reporting support; operable unit modification and expansions; field studies and deployment activities; and final deactivation and commissioning of the operable unit at the end of life.

- Provide project management oversight and leadership to activities supporting the 200 West P&T System including:
  - Groundwater modeling, air modeling, depth/discrete groundwater sampling during well drilling and the annual performance report.
  - TPA performance and milestone reviews.
  - Manage Operable Unit funding.
  - Overseeing the development and updating of technical and regulatory documents.
  - Prepare weekly, monthly, and quarterly cost and schedule performance reports.
  - Development and management of baseline scope, schedule, and cost documentation.
  - Preparing change documents (e.g., TPA change notices, baseline change requests, deviation notices).
  - Support and participate in decision-maker negotiations, site-wide compliance, regulator meetings, and technical coordination and integration with groundwater operable unit work scope.

- Remedial/Removal Action Implementation – This task is associated with the 200 West Pump & Treat Facility Remedy Implementation per the final Record of Decision (ROD), and operation and maintenance support. Also included is the Pump and Treat Well Drilling each year. This task is associated with drilling monitoring wells every 5 years. Typical activities include:
  - Performing groundwater modeling during the operation of the 200 West P&T system to optimize the selection of wells to be put on line and to identify the optimum pumping rates to ensure remedial action objectives will be achieved.
  - Performing air dispersion modeling to ensure that air releases do not exceed maximum levels in air permit.
  - Updating SAPs supporting well drilling.
  - The sample bottle/paperwork preparation and sample collection and laboratory analysis of depth discrete groundwater samples collected during the drilling of new groundwater wells to support the 200 West P&T system.
  - Evaluating depth-discrete analytical data and preparing well designs.
  - Update the 200-West conceptual site model and groundwater models to reflect current conditions, capture zone analysis, and improve cleanup predictions.
  - Drilling Work: Includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project closeout to support drilling wells for groundwater monitoring and expansion of groundwater treatment systems.
  - Well Planning - Prepare and/or obtain the necessary documentation to support well installations. Where possible, use or modify existing documentation to plan the work. Subtasks include, but are not limited to, the following:
    - Stake wells and walk down.
    - Prepare Description of Work (DOW) for installation of wells with data sheets
    - Prepare Sampling and Analysis Instructions and Data Quality Objective Waste Summary Report
    - Conduct cultural resources review.
    - Conduct ecological resources review.
    - Perform Ground Penetrating Radar surveys for underground utilities.
    - Update Site-Specific Waste Management Instructions.
    - Prepare drilling contract from DOW and data sheets.
    - Prepare necessary permits (e.g., excavation).
    - Prepare preliminary hazard classification, hazard survey, and radiological assessment.
  - Well Installation - Tasks include:
    - Preparation of well roads and pads.
    - Prepare subcontract documents.
    - Drill and install wells.
<table>
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<th>Assumptions</th>
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<tbody>
<tr>
<td>1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.</td>
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<tr>
<td>2. Source area final decisions are required before final groundwater OU decisions.</td>
</tr>
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<td>3. Monitored Natural Attenuation and Technical Impracticability are potential remedial alternatives for limited constituents.</td>
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<td>4. OU structure could change to facilitate accelerated cleanup.</td>
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<td>5. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.</td>
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## Scope

This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables for are of a high quality, produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

1) Provide project management oversight and reporting to support site-wide compliance and regulatory meetings/reporting that are applicable to this Operable Unit. Activities include:

- Support and attend Unit Manager Meetings
- Support and attend public meetings
- Provide quarterly TPA performance and milestone review input
- Management of funds tied to this Operable Unit
- Management of milestones tied to this Operable Unit

2) Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:

- Management of scope, schedule, and budget for completion of the technical documents
- Subcontractor management
- Ensuring that the technical document are high quality
- Preparation of monthly reports (e.g., technical, not related to cost or schedule)

3) Baseline management and reporting. Activities include:

- Scope, schedule and cost documentation for the Operable Unit
- Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
- Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

## Assumptions

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

## TPA Milestones

No TPA Milestone
### Scope

This WBS element is to continue the selected remedy in the ROD for the 200-ZP-1 Operable Unit. The 200 West Pump and Treat (P&T) Facility is now treating Groundwater from multiple Groundwater Operable Units and it is anticipated that it will treat GW from every OU on the Central Plateau in the future. The work scope associated with this facility has been greatly expanded since it was constructed as a remedial action specified in the CERCLA ROD for the 200-ZP-1 OU. Other Integration Activities include implementation of the selected remedial action, activities within the Central Plateau must be closely integrated with other activities occurring in the area, especially other Central Plateau OUs, planned removal actions in the area, and nearby operational programs. Strategic and technical integration requirements are identified in work element RL-0030.01. Support DOE in technical documentation and regulatory compliance including evaluations to support TI waivers and Alternative Points of compliance through establishment of a groundwater WMA.

The 200 West Pump and Treat is a major component of the remedial actions selected for cleanup of the 200-ZP-1 and 200-UP-1 Groundwater Operable Units (OU’s), the 200-DV-1 OU perched water, extracted groundwater from treatability testing at the 200-BP-5 OU, and leachate collected at the Environmental Restoration Disposal Facility (ERDF), all located on the Central Plateau of the Hanford Site.

The remedy selected in the Record of Decision Hanford 200 Area 200-ZP-1 Superfund Site, referred to as the record of decision [ROD]) includes a groundwater P&T system, monitored natural attenuation (MNA), flow-path control, and institutional controls (ICs). These remedy components are combined to meet the objective of achieving established groundwater cleanup levels for all contaminants of concern (COCs) in the 200-ZP-1 OU within 125 years. The COCs identified for the 200-ZP-1 OU are carbon tetrachloride, total chromium (trivalent and hexavalent), nitrate, trichloroethene, iodine-129, technetium-99, and tritium.

Currently, the radiological treatment facility is designed to treat up to 1,135 L/min (300 gallons per minute [gpm]) for uranium through the uranium ion exchange system and 2,270 L/min (600 gpm) for technetium-99 through the technetium-99 ion exchange system. Radiological treated water is then blended with the non-radiological treated water coming into the central facility.

The central facility can treat up to 9,464 L/min (2,500 gpm) of extracted groundwater using two parallel treatment trains. The extraction and injection well network from all OUs includes approximately 30 extraction wells and 27 injection wells. The number and location of these wells were dependent on characterization, and optimization efforts to determine nature and extent of contaminants of concern.

The design of the central facility included the ability to add a third treatment train (also in parallel) within the existing facility footprint and infrastructure, increasing the design flow rate to 14,195 L/min (3,750 gpm). The need for additional treatment capacity will be based on the treatment capacity required for 200-ZP-1 OU, 200-UP-1, and 200-BP-5 groundwater remedies.

The O&M program adopted for the 200 West P&T was based on the O&M programs developed for existing P&T systems in the 100 and 200 Areas (e.g., 200-ZP-1 interim P&T system). The O&M program relies on an automated electronic information management platform for creating, storing, and updating the components of the O&M program on the Hanford local area network. The O&M program information specific to the 200 West P&T was uploaded into the electronic platform after the remedial design report was finalized and vendor information submittals were received during construction. The electronic information residing in this platform references the location of any supporting information not contained within the system (e.g., hardcopy vendor submittal information). The information contained within the electronic platform addresses the following topics, as appropriate:

- System description, including an overview of system equipment and treatment processes
- Operating parameters and procedures for the facility, including each of the critical unit processes (e.g., biological systems and air stripping)
- Vendor equipment specifications (e.g., fundamental technical information concerning each unit’s process step, construction materials, and pump curves)
- System O&M information, including equipment manufacturer and vendor-supplied O&M manuals (specific to individual system components or equipment)
- Preventive and corrective maintenance information for monitoring system equipment and process operations
- Standard operating procedures addressing system and component repairs
- Master equipment and spare parts list
- System transient condition response actions and procedures
- Emergency response plan
- Warranty data and information
- Training procedures
- Process liquid stream sampling and reporting requirements
- Perform composite samples at the effluent tank on a weekly basis for COCs to determine that reinjection is at or below cleanup level.
System performance assessment is conducted during operations to monitor P&T system operations to ensure that each system is operating in accordance with the approved specifications, and is operational and functional. Data collected during this assessment include the following:

- Process monitoring data
- Performance monitoring data
- Air monitoring data
- Waste management data
- Preventative and corrective maintenance data

Routine operation of the 200 West P&T consists of drawing groundwater from a network of extraction wells, pre-treating a portion of the flow to remove uranium and technetium-99, combining the post-treated stream with the balance of flow, and conveying the blended stream to the central treatment facility for the removal of COCs and other constituents. Following treatment, the treated water is returned to the aquifer through a series of injection wells.

The treatment system has the capacity to treat 9,464 L/min (2,500 gpm). Operational up-times are expected to average 80 percent. The operational up-time is calculated using a 12-month rolling average.

Routine and preventative maintenance of P&T system components is performed in accordance with engineering evaluations and approved procedures. An overall preventative maintenance schedule was developed for equipment (e.g., extraction well pumps, transfer pumps, and blowers) using the information provided in these procedures and according to manufacturer and vendor guidelines.

Routine and preventative maintenance activities are documented in accordance with work control procedures, and the work packages are maintained in project records. A general summary of maintenance activities is provided in the annual report.

The 200W P&T Facility expansion will require additional P&T capacity to address continuing sources and possible Gable Mtn Pond (Install piping from 200 East to 200 West P&T [1200 gpm with existing two lines @ 200gpm/each], install a 400 gpm Uranium Train, install two 400 gpm (total of 800 gpm) Tc-99 Trains, install an FBR (1250 gpm), install two MBRs (1250 gpm), install injection wells at 100 gpm each, perform injection transfer building modifications, perform extraction well modifications, perform process building modifications (pumps, mechanical, chemicals), drill, construct and hook up extraction wells, and drill monitoring wells, perform resin change outs.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**
### CWBS Number
RL-0030.23.03.01

### CWBS Title
200-ZP-1 Remedy Installation

### Scope
The 200W P&T Facility expansion will require additional P&T capacity to address continuing sources and possible Gable Mtn Pond (Install piping from 200 East to 200 West P&T [1200 gpm with existing two lines @ 200gpm/each], install a 400 gpm Uranium Train, install two 400 gpm (total of 800 gpm) Tc-99 Trains, install an FBR (1250 gpm), install two MBRs (1250 gpm), install injection wells at 100 gpm each, perform injection transfer building modifications, perform extraction well modifications, perform process building modifications (pumps, mechanical, chemicals), drill, construct and hook up extraction wells, and drill monitoring wells, perform resin change outs.

### Assumptions

### Requirements

### TPA Milestones
### Scope

Routine operation of the 200 West P&T consists of drawing groundwater from a network of extraction wells, pre-treating a portion of the flow to remove uranium and technetium-99, combining the post-treated stream with the balance of flow, and conveying the blended stream to the central treatment facility for the removal of COCs and other constituents. Following treatment, the treated water is returned to the aquifer through a series of injection wells.

The treatment system has the capacity to treat 9,464 L/min (2,500 gpm). Operational up-times are expected to average 80 percent. The operational up-time is calculated using a 12-month rolling average.

Routine and preventative maintenance of P&T system components is performed in accordance with engineering evaluations and approved procedures. An overall preventative maintenance schedule was developed for equipment (e.g., extraction well pumps, transfer pumps, and blowers) using the information provided in these procedures and according to manufacturer and vendor guidelines.

Routine and preventative maintenance activities are documented in accordance with work control procedures, and the work packages are maintained in project records. A general summary of maintenance activities is provided in the annual report.

### Assumptions

### Requirements

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<tr>
<td>RL-0030.23.04</td>
<td>200-ZP-1 Monitoring &amp; Reporting</td>
</tr>
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</table>

**Scope**

This WBS element represent long term process monitoring and drilling new pump and treat wells – Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project close out to support drilling wells for groundwater monitoring.

Monitoring and reporting involves the technical planning, technical support, purgewater management, and reporting for groundwater long term monitoring and Comprehensive Environmental Response, compensations, and Liability Act of 1980 (CERCLA) monitoring project on changing contaminant concentrations within the Operable Unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAP), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordinate of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include stake wells and walk down, prepare Description of Work (DOW) for installation of wells with data sheets, prepare Sampling and Analysis Instructions and Data Quality Objective Waste Summary Report., conduct cultural resources review, conduct ecological resources review, perform Ground Penetrating Radar surveys for underground utilities, update Site-Specific Waste Management Instructions, prepare drilling contract from SOW and data sheets, prepare necessary permits (e.g., excavation), and prepare preliminary hazard classification, hazard survey, and radiological assessment.

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling and installing wells; conducting civil surveys of well locations; provide management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out activities.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**

M-016-00
### Assumptions

1. Remedy evaluations are necessary to ensure RAO's and ROD requirements are being met and necessary planning required for remedy system upgrades.
2. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
3. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

### Requirements

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
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<td>RL-0030.30</td>
<td>300-FF-5 Operable Unit</td>
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![Map Image](image-url)
**CWBS Number**  
RL-0030.30.01

**CWBS Title**  
300-FF-5 Project Management

**Scope**
This WBS is to provide for the overall management of the Operable Unit. The scope of this WBS is to ensure project deliverables are of a high quality, and are produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract.

This WBS is organized to include project management, oversight of technical deliverables, and PMB maintenance and reporting, including:

1) Provide project management oversight and reporting to support site-wide compliance and regulatory meetings/reporting that are applicable to this Operable Unit. Activities include:
   • Support and attend Unit Manager Meetings
   • Support and attend public meetings
   • Provide quarterly TPA performance and milestone review input
   • Management of funds tied to this Operable Unit
   • Management of milestones tied to this Operable Unit

2) Manage preparation of the technical documents and work plans that are required for this Operable Unit, ensuring that they are produced on schedule and within budget. Activities include:
   • Management of scope, schedule, and budget for completion of the technical documents
   • Subcontractor management
   • Ensuring that the technical document are high quality
   • Preparation of monthly reports (e.g., technical, not related to cost or schedule)

3) Baseline management and reporting. Activities include:
   • Scope, schedule and cost documentation for the Operable Unit
   • Preparation of change documents tied to this Operable Unit (e.g., TPA change requests, baseline change requests, deviation notices)
   • Preparation of monthly reports (e.g., cost and schedule performance) tied to this Operable Unit

The Project Management control account will remain active until such time as the Operable Unit completes the work scope and/or until the Operable Unit Project Management activities are consolidated into a general Project Management account.

**Assumptions**

**Requirements**
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**
No TPA Milestone
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</table>

**Scope**
The scope included in this WBS element is to decommission wells located in the 300-FF-5 Operable Unit. Work activity includes preparing inventories of unused and/or non-compliant wells, planning and documentation, technical coordination, procurement, labor, subcontract, materials, equipment, field support during construction (e.g., BTR, well site geologist), waste management and project closeout to support decommissioning of unused or non-compliant wells.

**Assumptions**

**Requirements**

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

**TPA Milestones**

| M-016-00 |
Scope

This WBS element represents long term monitoring and drilling new wells – Work includes technical coordination, procurement, labor, subcontracts, materials, and equipment for project planning and documentation, field support during drilling, and project close out to support drilling wells for groundwater monitoring.

Monitoring and reporting involves the technical planning, technical support, groundwater management, and reporting for groundwater long term monitoring and Comprehensive Environmental Response, compensations, and Liability Act of 1980 (CERCLA) monitoring project on changing contaminant concentrations within the Operable Unit. Review all regulatory required documents in support of landlord responsibilities, including reporting on CERCLA monitoring activities in the Hanford Site Groundwater Annual Report. Work includes updating Sampling and Analysis Plans (SAP), review of monitoring and sampling activities, and interface with DOE and regulators. Attend meetings and review plans as necessary, provide test and draft figures/tables to the Hanford Site Annual Groundwater Monitoring Report, provide input to site permit revision and the Sitewide Environmental Report. Groundwater monitoring wells included are those defined in the most recent Hanford Site Groundwater Monitoring document. Coordinate of both the annual groundwater and environmental reports is done by the National Laboratory Contractor with supervision by contractor.

Prepare and/or obtain the necessary documentation to support well installations. Where possible use or modify existing documentation to plan the work. Tasks include stake wells and walk down, prepare Description of Work (DOW) for installation of wells with data sheets, prepare Sampling and Analysis Instructions and Data Quality Objective Waste Summary Report, conduct ecological resources review, perform Ground Penetrating Radar surveys for underground utilities, update Site-Specific Waste Management Instructions, prepare drilling contract from SOW and data sheets, prepare necessary permits (e.g., excavation), and prepare preliminary hazard classification, hazard survey, and radiological assessment.

Tasks include preparation of well roads and pads; preparation of subcontract documents; drilling and installing wells; conducting civil surveys of well locations; provide management support, labor support, and associated documentation (e.g., completion (summary) reports), and close out activities.

Assumptions

Requirements

1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.

TPA Milestones

M-016-00
### Scope
This WBS element addresses the 200-DV-1 source operable units (OU) located within the Inner Area of the Central Plateau at the Hanford Site. The work scope in this element includes the coordination, development, implementation, configuration management and revision of decision documents and other documents associated with these source operable units, adjoining source units, and the groundwater operable units that exist below them. It involves developing and documenting decisions, including interim and final actions associated with AEA, CERCLA and RCRA. It also includes the work activities necessary to support the development of the Composite Analysis (CA) and the Cumulative Impacts Evaluation (CIE) that will inform the overall decision process for remediation of source, groundwater, and TSD units on the Central Plateau. It is through the individual OUs that the implementation and execution of the strategic and technical aspects of DOE’s cleanup strategy will be conducted consistent with WBS RL-030.01, Groundwater Program Management. The major work components of this element include project management and decision documents.

### Assumptions
1. OU structure could change to facilitate accelerated cleanup.
2. Reference material, including technical basis, that is included within decision documents must be available in the Administrative Record prior to regulatory review.
3. Caps may be necessary to control contaminant transport to groundwater. Soil covers may be necessary to control direct contact risks.
4. Assume currently approved RI/FS WPs, SAPs, RD/RA WPs, RAWPs are implementable.

### Requirements
1. Comply with DOE Orders and Directives.
2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA Requirement.
<table>
<thead>
<tr>
<th><strong>Scope</strong></th>
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<tr>
<td>Provide the overall project management and leadership of the operable units’ decision processes which includes managing the resources; project technical, scope, cost, schedule and contract baselines; and the contract, subcontracts, projects, and regulatory interface processes that support these OUs. A primary objective of this WBS sub element is to ensure project deliverables are of a high quality, produced on schedule and within budget. A key aspect of this WBS is to communicate with other projects and functional groups so that goals and objectives are met and follow the protocol set by the contract. The major work scope includes the following items. Prepare change documents tied to these operable units (e.g., TPA change requests, baseline change requests, deviation notices). Prepare monthly, quarterly, and annual reports (e.g., cost and schedule performance) tied to these operable units. Prepare and maintain budgets and schedules, strategies (to include possible modifications to OU structure/composition). Coordinate document development; implementation of documents; decision-making negotiation support; maintaining site-wide regulatory compliance; regulator interface meetings; technical coordination and integration with adjoining source unit and associated groundwater operable unit work scope and CA/CIE development. Also coordinate field characterization with groundwater monitoring well installation, evaluation and reporting for RCRA TSD’s, CERCLA Operable Units (OU), and other permitted facilities and sites as required to optimize the characterization data available to support key decisions. Provide any necessary labor, equipment, materials, processes, subcontracts, and support necessary to develop, maintain, implement, and complete work scope associated with this element.</td>
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| **Assumptions** |  |

<table>
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<tr>
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<tbody>
<tr>
<td>1. Comply with DOE Orders and Directives.</td>
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<td>2. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.</td>
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<td>3. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.</td>
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<tr>
<td>4. Comply with CERCLA Section 121 and DOE requirements.</td>
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<tr>
<td>5. Comply with RCRA Requirement.</td>
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<tr>
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<tr>
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CWBS Dictionaries

PBS: RL-0040, Nuclear Facility D&D

Remainder of Hanford
**RL-0040 & RL-0041**  
**WBS Level Definition for Remediation**

- **WBS Level 1** is the Program Baseline Summary (PBS).

  - Program Management
  - Remediation of Geographic Area
  - Min-Safe

- **WBS Level 2** breaks out the work by Program Management, Remediation and Min-Safe.

  - Implementation Areas

- **WBS Level 3** defines geographic regions called Implementation Areas that are primarily organized around reactors, canyons, burial grounds and tank farms.

  - SQUIDS

- **WBS Level 4** further subdivides Implementation Areas into geographic areas called SQUIDs (Subsequent Unit for Individual Development) that are manageable cleanup projects.

- **WBS Level 5** categorizes the cleanup objects (waste sites, facilities, pipelines, tanks and barriers) in a SQUID.

  - Canyons & Reactors
  - Waste Sites
  - Facilities
  - Pipelines
  - Tanks
  - Barriers

- **WBS Level 6** lists the individual cleanup objects in a SQUID. This provides an inventory of the remediation work in each Implementation Area and SQUID.

  - List of Canyons & Reactors
  - List of Waste Sites
  - List of Facilities
  - List of Pipelines
  - List of Tanks
  - List of Barriers
RL-0040 & RL-0041

WBS Level Definition for Min Safe

WBS Level 1 is the Program Baseline Summary (PBS)

WBS Level 2 breaks out the work by Program Management, Remediation and Min-Safe

WBS Level 3 refines min safe into min safe for waste sites, nuclear facilities and general purpose facilities.

WBS Level 4 further refines min safe.
### CWBS Number
**RL-0040**

### CWBS Title
**Nuclear Facility D&D – Remainder of Hanford**

#### Scope
This PBS scope includes implementation of various Hanford Site cleanup initiatives: cleanup of radioactive and chemical contamination in about 900 waste sites with potential impact to groundwater and approximately 1,000 facilities primarily on the Central Plateau; and infrastructure operations. Life-cycle work scope includes: decontamination, decommissioning, dismantlement, and disposition of surplus facilities (including canyon facilities); remediation of all Central Plateau waste sites containing large inventories of mobile contaminants that may migrate into groundwater plumes (includes removal of contaminants or construction of surface barrier caps over waste sites); deactivation and disposition of contaminated equipment; final disposition of Cold War legacy wastes and site infrastructure. Following the assessment activities through the remedial decision process under PBS RL-0030, remedial design and implementation will be performed under PBS RL-0040. This PBS work scope includes the physical cleanup of these waste sites and facilities.

#### Assumptions

#### Requirements
<table>
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<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0040.01</td>
<td>Central Plateau Program Management</td>
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</tbody>
</table>

**Scope**

This WBS element provides overall management and direction to and administrative support for Central Plateau (CP) facility D4, waste site and pipeline remediation, restoration, facility/waste site/groundwater/vadose zone integration and closure activities. This activity includes tasks necessary to obtain required facility decision documents that precede D4 activities and the tasks necessary to address aging facility or waste site conditions that are above and beyond anticipated operational and maintenance plans. It also includes CP Engineering Studies to conduct cross-cutting engineering and technical studies and trade-off evaluations necessary to optimize design and execution for Central Plateau facility and waste site remediation/restoration.

This WBS element, RL-0040.01, includes program management for the Min safe and S&M oversight activities, remediation planning and regulatory closeout and transition phases of the RL-0040 Central Plateau Remediation program.

RL-0040.01 does not include specific project management scope for execution of remediation activities in each IA/SQUID.

**Assumptions**

**Requirements**

1. See lower level WBS level for additional requirements.
**CWBS Number**
RL-0040.50

**CWBS Title**
Central Plateau Maintain Safe and Compliant Facilities & Waste Sites

**Scope**

This activity encompasses those actions necessary to safely maintain inactive waste sites that contain radioactivity and/or chemical contamination and surplus facilities located primarily on the Central Plateau. The minimum safe operations are broken into 3 areas: Central Plateau (CP) Waste Sites Min-Safe, CP Nuclear Facilities Min Safe and CP General Purpose Facilities Min Safe. This WBS element includes surveillance and system, structural, equipment, and other maintenance on facilities/buildings and waste sites in the 100, 200, 300, 400, and 600 Areas.

Key activities under this work scope include:

- Maintain a graded S&M program consistent with the condition of the individual facilities, buildings and/or waste sites; the hazards identified through Integrated Safety Management and other appropriate analyses; and the plans for closure.
- Developing, modifying, maintaining procedures and schedules, and performing 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.
- Perform landlord responsibility (including long term surveillance and maintenance) of the 200 Area surplus steam lines and its associated underground injection wells (UICs) and the Post D4 sites that have found asbestos debris. This includes defining the level of asbestos abatement, i.e. repair/encapsulation or removal per regulations and the DOE orders.

This work activity includes the effort that is involved in maintaining facilities and waste sites, of varying size, shape and complexity. All of these items have previously undergone some form of deactivation and or lay-up/stabilization, and are awaiting the next steps in remediation and final disposition. The work activity ultimately provides for the continuous protection of personnel and the environment by maintaining the safety boundary offered by building integrity, passive and active systems, and correction of hazards brought about by natural degradation. The work activity includes both physical surveillance & maintenance and documentation maintenance. Facilities and waste sites will remain under this program until transitioned to the Implementation Area Remediation WBS elements for final disposition.

This scope also includes the following programs and their related requirements and deliverables: Environmental Protection, ISMS, Nuclear Safety, Occupational Safety & Health, QA, Emergency Preparedness, Radiation Protection, Safeguards and Security, Baseline Controls, and Training. Other activities include various resources to perform management assessments, ESH&Q support, project controls, management, work control, engineering support, maintenance of required Authorization Agreements, and procedures maintenance as required to maintain a safe and compliant facility or process. Specific duties include access control, records keeping and reporting, surveillance and maintenance, and disposition planning.

The following types of activities will be included in this work. Not every activity listed is required for every area or building, e.g., there are no stack systems in the 600 Area:

- Stack Sampling Surveillance.
- WIDS Sites Surveillance.
- Building and Grounds Integrity Surveillance.
- Abnormal Weather Conditions Building Checks Surveillance.
- Follow-up Corrective Surveillances includes minor contamination cleanup when found, stabilization & isolation of source as required, to reduce or remove biological, chemical and/or radiological health hazards and other minor corrective issues as found.
- Roof inspections/assessments as required.
- System Equipment Inspections.
- Stack Flow Test.
- System/Equipment Testing.
- Radiological surveys.
- Fire System PM's
- Annual Winterization PM.
- Annual De-winterization PM.
- Exhaust Fan PM.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0040.50</th>
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<tbody>
<tr>
<td><strong>CWBS Title</strong></td>
<td>Central Plateau Maintain Safe and Compliant Facilities &amp; Waste Sites</td>
</tr>
</tbody>
</table>

**Assumptions**

- Sample Flow Calibration PM.
- Corrective Maintenance activities.
- Housekeeping includes basic maintenance of structures and utilities, maintenance of physical security structures [stairs, railings, walkways, doors], and debris removal.
- Minor Waste Handling and Disposal as a result of housekeeping.
- Recordkeeping
- Inspections with federal or state regulatory agencies
- Pest and Vegetation Control

This scope excludes characterization for remediation decision documents and remediation planning as they are included in other WBS elements.

**Requirements**

1. See lower level WBS level for additional requirements.
3. Comply with DOE Orders and Directives.
4. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
CWBS Number
RL-0040.50.01

CWBS Title
Central Plateau Waste Sites Min Safe

Scope
This activity scope is for inactive waste sites assigned to PBS RL-0040 and primarily located within the Central Plateau and defined in the WIDS database. The scope includes administration and clerical coordination of S&M activities. This includes management for maintenance staff; clerical support of staff, both general and specific nature. Preventive and Corrective maintenance activities include, but are not limited to routine radiological surveillances, tumbleweed and sign management, treatment of surface contamination and general surveillance activities.

The scope does not include the WIDS site surveillances performed at B-Plant, PUREX, or REDOX. The total performed annual surveillance covers approximately 500 waste sites per year. S&M activities include periodic surveillances, annual radiological surveys, annual herbicide applications, removal of deep-rooted vegetation, and occasional corrective action for small areas of surface contamination that may appear. This activity also manages, maintains, and controls inactive, outdoor waste sites including inactive treatment, storage and disposal (TSD) units (approximately 2,350 total acres). Activities also include performing basic S&M of inactive, outdoor waste sites, resolving radiological control problems, upgrading posting signs and barricades, performing corrective and preventive maintenance, and preventing intrusive weed growth. These activities will be required until final remediation is complete. Herbicide application is required to conduct an aggressive weed control program on Radiation Area Remedial Action (RARA), inactive, outdoor sites. Due to climate and soil conditions at the Hanford Site, disturbed soils are highly susceptible to deep-rooted annual weed growth (such as tumbleweeds). To prevent contamination uptake through the root system, and spreading when the plant dies, it is imperative that these weeds are controlled through the application of appropriate herbicides. Spring, fall and selective applications are used to maintain growth control.

SCOPE EXCLUSIONS: This scope of work does not include resources for re-vegetation control which are a site service provided by HMESC. There are no burial costs in this estimate, and tumbleweed disposal is provided by others.

Assumptions
1. The scope of work does not include resources for re-vegetation.

Requirements
1. See higher level WBS level for additional requirements.
<table>
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<th>CWBS Number</th>
<th>CWBS Title</th>
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<tr>
<td>RL-0040.50.01.01</td>
<td>Central Plateau Waste Sites Min Safe Support</td>
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</tbody>
</table>

**Scope**

Min safe support provides support for Central Plateau waste sites surveillance and maintenance. This includes technical, infrastructure and administrative support activities necessary for the surveillance and maintenance of radiological or chemically contaminated waste sites. These support activities include; maintenance, training, engineering, RCRA compliant waste management, environmental compliance, other support, supervision, work control and radiation protection.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
<table>
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<th><strong>CWBS Number</strong></th>
<th><strong>CWBS Title</strong></th>
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<tr>
<td>RL-0040.50.01.02</td>
<td>Central Plateau Waste Sites Radiation Surveillances</td>
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</tbody>
</table>

**Scope**

The scope includes radiological (RAD) protection surveillances that are required for the WIDS sites indicated as annual or as semiannual in the Waste Sites Management Plan. This does not include waste sites that get RAD surveillance in conjunction with the annual surveillance performed for B-Plant, U-Plant, REDOX, PUREX, and the other nuclear facilities having an annual surveillance. The scope for those RAD surveillances are included in the facility annual surveillance. In general, the surveillances are performed in accordance with 5 predetermined RAD Survey Tasks which are intended to comply with current procedures. The individual surveys may be performed using hand held equipment or tractor mounted instrumentation. The type of instrument used to perform the survey varies from site to site as does the number and type of samples depending upon the conditions and nature of the individual site.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Scope
This scope includes activities to inspect areas prone to tumbleweed growth, perform dose and contamination surveys of the tumbleweeds and the ground around the tumbleweeds, bag and remove the tumbleweeds to a collection cage until the fire hazard is low enough to bring out a compactor to volume reduce the tumbleweeds and take them to ERDF. Herbicide application is required to conduct an aggressive weed control program on Radiation Area Remedial Action (RARA), inactive, outdoor sites. Due to climate and soil conditions at the Hanford Site, disturbed soils are highly susceptible to deep-rooted annual weed growth (such as tumbleweeds). To prevent contamination uptake through the root system, and spreading when the plant dies, it is imperative that these weeds are controlled through the application of appropriate herbicides. Herbicide application is a direct funded site wide service provided by HMESC at no cost. This scope includes escorting the HMESC vegetation spraying crew which sprays the locations three times per year. Performing spraying three times per year ensures the tumbleweeds and other problem vegetation do not mature between rounds of spraying.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
### CWBS Dictionary Sheet

<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>RL-0040.50.01.04</th>
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<tr>
<td>CWBS Title</td>
<td>Central Plateau Surface Contamination Treatment</td>
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#### Assumptions

1. See higher level WBS level for additional requirements.

#### Requirements

- The scope includes treatment of surface contamination that is identified in the course of the RAD surveillances. Surface contamination requires much more maintenance and posting than underground contamination. Consequently, maintenance costs are reduced by covering the newly discovered surface contamination so that it becomes underground contamination. This usually consists of spreading a Biological Barrier over the surface and then covering with 6-inches of borrow material. This includes changing the signs postings because the site changes from a surface contamination area to an underground contamination area.
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<th>CWBS Number</th>
<th>RL-0040.50.01.05</th>
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<tr>
<td>CWBS Title</td>
<td>Central Plateau Waste Sites Sign Replacement</td>
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</table>

**Scope**
The scope consists of replacement of signs that post hazards and warnings around waste sites. This includes updating out of date postings to current and replacing faded or lost signs. Approximately 10% of signs get replaced per year (approximately 5,000 sign replacements per year).

**Assumptions**

**Requirements**
1. See higher level WBS level for additional requirements.
### Scope
The scope includes quarterly TSD inspections (see TSD Site table) and routine surveillance of inactive waste sites primarily located in the 200 Areas for which PBS 40 is responsible. This does not include the WIDS site surveillances performed at B-Plant, PUREX, or REDOX. These activities will be required until final remediation is complete. Table J-13 identifies the individual waste sites that require surveillance and procedures indicate whether the surveillance is performed three times per year or one time annually. The work scope is driven by the following requirements:

- PRC-PRO-QA-40099 Management Observation Program
- PRC-PRO-EP-15333 Environmental Protection Process
- Agreements with the Washington State Department of Ecology

These requirements are implemented in the following CHPRC procedures:

- 2CP-SUR-R-03003 Inactive 200E Area Outdoor Waste Site Surveillance
- 2CP-SUR-R-03004 Inactive 200W Area Outdoor Waste Site Surveillance

The requirement is for an annual surveillance. However, successfully gaining regulatory acceptance of meeting the requirements requires that the surveillances be performed three times per year (for the indicated sites). Decisions on the frequency of site inspections and the type and degree of controls are based on the conditions at the individual site and are documented in the Waste Site Management Plan. For example, a site that has radiological surface contamination, prone to dispersal by wind or biological means would need stricter inspection and control measures than would an underground site. For inactive WIDS sites defined to be less than Category 3 on a Form C CHPRC Certification of Inactive Waste Site, Defined To Be Less Than Category 3, requires an annual inspection (although three times per year may be performed). For all other sites, the inspection shall be based on a graded approach. The surveillances include the following items:

- Signage
- Barriers
- Animal/pest intrusion
- Vegetation
- Ground subsidence
- Vent cap integrity
- Containers (not labeled or identified)
- Occupational hazards
- Apparent changes

Specifically for Asbestos Containing Material (ACM)/Potentially Containing Material (PACM) sites they are generally surveyed twice per year unless two years go by without observing any ACM. After two years without observing ACM, the frequency drops to one time annually. ACM/PACM surveillances include the following items:

- Signage
- Barriers
- Animal/pest intrusion
- Vegetation
- Ground subsidence
- Containers (not labeled or identified)
- Asbestos site conditions (no unauthorized vehicle traffic that would crumble ACM)
- Asbestos observed

### Assumptions

### Requirements

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<table>
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<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0040.50.01.06</td>
<td>Central Plateau Waste Sites Surveillance</td>
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</table>
### CWBS Number
RL-0040.50.01.07

### CWBS Title
Replace Central Plateau Radiation Survey Tractor

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<tr>
<td>The scope consists of replacing the RAD Tractor and its radiological (RAD) instrumentation. Currently the project has two RAD tractors (newest one purchased in FY2016). The older tractor serves as a backup to the new tractor. The new tractor can perform all the required RAD tractor survey work without relying on the old tractor (unless it breaks down). It is estimated that every 10 years the tractor will be replaced. This scope includes installation of the RAD instruments (labor) as well as training on operation of the tractor.</td>
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<td>1. See higher level WBS level for additional requirements.</td>
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<td>Scope</td>
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<tr>
<td>This scope is for surplus nuclear facilities located within the Central Plateau, Nuclear facilities scope includes U-Plant, B-Plant, PUREX, REDOX and other nuclear buildings. The scope includes administration and clerical coordination of S&amp;M activities. This includes management for maintenance staff; clerical support of staff, both general and specific nature and spare parts. Preventive and Corrective maintenance activities include, but are not limited to HEPA filter replacements, ventilation testing, portable exhauster aerosol testing, HEPA vacuum aerosol testing, and Alpha CAM Calibrations. Required surveillance activities are defined in the current Surveillance and Maintenance Plans (REDOX: DOE-RL/98-19, PUREX: DOE/RL98-35, B Plant: DOE/RL-99-24 and U Plant DOE/RL-98-20)</td>
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<tr>
<th>Assumptions</th>
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<tbody>
<tr>
<td>1. Activities for Stack Continuous Air Monitoring (CAMS) are not included in this WBS element.</td>
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<td>1. See higher level WBS level for additional requirements.</td>
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</table>
### CWBS Title
Central Plateau Nuclear Facilities Min Safe Oversight and Support

### Assumptions
1. See higher level WBS level for additional requirements.

### Requirements

#### Scope
Min safe support provides support for Central Plateau nuclear facilities surveillance and maintenance. This includes technical, infrastructure and administrative support activities necessary for the surveillance and maintenance of radiological or chemically contaminated facilities. These support activities include: maintenance, quality assurance, training, engineering, RCRA compliant waste management, environmental compliance, other support, supervision, work control, radiation protection and nuclear safety.

This WBS element provides support required to implement regulatory and contractual requirements for Nuclear and Criticality Safety. Facilities included in this scope include: 224-B, 224-T, 231-Z, B Plant, PUREX, U Plant and REDOX. The required support activities will continue until the facilities are fully decommissioned or until the facility hazard classifications are downgraded to Less Than Nuclear, Hazard Category 3. Annual updates of Documented Safety Analyses (DSAs) will be prepared if updates are required or USQ summary evaluation letters will be prepared for transmittal to DOE. Transmittal to DOE is required by the anniversary date. USQ Summary Evaluation Letters are prepared if no changes are planned or required. It also provides preventative and scheduled maintenance activities that are performed for multiple facilities or are not specific to a facility. This includes Portable Exhauster Aerosol Testing, HEPA Vacuum Aerosol Testing, and Alpha CAM Calibrations. The facility specific maintenance scope is in the specific facility WBS elements.
### Scope

The scope of work provides for the safe and environmentally compliant surveillance, and maintenance of the U Plant Facility and waste sites. The U Plant Facility has been categorized as a Hazard Category 3 Nuclear Facility, and the stack is classified as a fugitive emission source. U Plant has no active systems. The facility requires surveillance and maintenance to prevent material/structural degradation, to monitor and control facility hazards, to meet regulatory requirements, and to ensure that the facility remains in a safe and environmentally compliant condition. Currently the U Plant facility has temporary lighting that requires a portable generator. This scope also includes writing of new procedures or the update of existing procedure documents that are under configuration control and define work methods and requirements. This is only for the effort by the document writers and does not include the facility staff review and approval of the document. This scope includes the supervisor’s oversight of the writers. Preventative and Scheduled Maintenance is performed for the following facilities:

- 241WR, Thorium Storage Vault
- 271U, U Plant Administration Building
- 291U, Exhaust Fan Control House, Sand Filter
- 292U, Stack Monitoring Station
- 221U, U Plant Canyon Building
- 276U, Solvent Recovery Tank

The preventative maintenance consists of all regularly scheduled maintenance activities including safety related inspection, reliability/availability inspections, and maintenance to extend equipment life or to minimize future corrective maintenance.

The corrective maintenance consists of repair activities that are not planned and do not have a regular schedule for performance. These activities are necessary to restore equipment functionally back to usable levels or to restore the equipment back to a safe condition of operation.

**SCOPE EXCLUSIONS:** The U Plant Canyon crane lifting capability reactivation is not included in this work.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
Scope

The scope of work includes activities to ensure the safe and environmentally compliant surveillance and maintenance of the B Plant Facility. Major buildings include 271-B (office), 221-B (canyon), 224-B, 222-B, and 212-B. The complex also includes various ancillary buildings and outdoor waste sites. B Plant Facility has been categorized as a Hazard Category 2 Nuclear Facility, and the stack is classified as a major stack.

B Plant also has active systems, notably the canyon exhaust system, passive ventilation system for the retired filters, and electrical distribution systems. The facility requires surveillance and maintenance to prevent material/structural degradation, to monitor and control facility hazards, to meet regulatory requirements, to maintain the active systems (e.g., electrical utilities), and to ensure the facility remains in a safe and environmentally compliant condition. The B Plant ventilation system has above ground pre-filters and above ground primary and secondary HEPA filters. B Plant is a Cs/Sr facility with hard gamma emitters. The ventilation system picks up contamination from the deck and canyon, and causes radiological levels on the pre-filters to eventually get high enough to require pre-filter change in order to avoid the need to perform work remotely.

This scope also includes writing of new procedures or the update of existing procedure documents that are under configuration control and define work methods and requirements. This is only for the effort by the document writers and does not include the facility staff review and approval of the document. This scope includes the supervisor’s oversight of the writers.

Preventative and Scheduled Maintenance is performed for the following facilities:

- 207BA, Cooling Water Sampler Building
- 211B, Bulk Chemical Storage
- 211BB, Motor Control Center Building
- 212B, Fission Product Loadout Station
- 217B, Demineralizer Building
- 221BA, Cooling Water Monitoring Station
- 221BB, Process Steam and Condensate Building
- 221BC, SWP Change House
- 221BD, Laundry Storage Building
- 221BF, Condensate Effluent Discharge Facility
- 221BG, B Plant Cooling Water Sampling Building
- 221BK, Canyon Ventilation Instrument Building
- 222B, Office Building
- 2711B, Breathing Air Compressor Building
- 2715B, Paint Storage Building
- 2716B, Radiation Monitoring Checkout Station
- 271B, B Plant Support Building
- 271BA, Laundry Storage Building
- 276B, Paint Shop
- 291B, Exhaust Air Control House, Sand Filter
- 291B001, 221B Main Stack
- 291BA, Exhaust Air Sample House
- 291BB, Instrument Building
- 291BC, Access Control Building, Filter Vaults
- 291BD, Instrument Building and Filter Vault
- 291BF, Instrument Building and Filter Vault
- 291BG, Instrument Building and Filter Vault
- 291BH, Fifth Filter Vault Plug Cover
- 291BJ, Instrument Building and 6th Filter Vault
- 291BK, Instrument Building
<table>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>B-Plant Min Safe Oversight</td>
</tr>
</tbody>
</table>

- 292B, Stack Monitor Station
- C8S49, Main 221B Plant Substation
- C8S77, 291B Area Substation
- 221B, B Plant Canyon

The preventative maintenance consists of all regularly scheduled maintenance activities including safety related inspection, reliability/availability inspections, and maintenance to extend equipment life or to minimize future corrective maintenance.

The corrective maintenance consists of repair activities that are not planned and do not have a regular schedule for performance. These activities are necessary to restore equipment functionally back to usable levels or to restore the equipment back to a safe condition of operation.

**SCOPE EXCLUSIONS**: Activities for Stack Continuous Air Monitoring (CAMS) are not included in this estimate.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
CWBS Number
RL-0040.50.02.04

CWBS Title
PUREX Min Safe Oversight

Scope
This scope of work provides for the safe and environmentally compliant surveillance and maintenance of the Plutonium-Uranium Extraction (Plant) (PUREX). The PUREX facility complex consists of the main canyon building (202A), and approximately 40 ancillary facilities, along with outdoor waste sites, including 1 treatment, storage and disposal (TSD), and PUREX tunnels. PUREX (202A) has been categorized as a Hazard Category 2 Nuclear Facility, and the stack is classified as a major stack. PUREX has active systems, notably the canyon exhaust system, and electrical distribution systems. The facility requires surveillance and maintenance to prevent material/structural degradation, to monitor and control facility hazards, to meet regulatory requirements, to maintain the active systems (e.g., electrical utilities), and to ensure the facility remains in a safe and environmentally compliant condition.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
Scope
This scope of work provides for the safe and environmentally compliant surveillance and maintenance of the Reduction Oxidation (REDOX) Facility. REDOX has been categorized as a Hazard Category 2 Nuclear Facility, and the stack is classified as a minor stack. REDOX has active systems, notably the canyon exhaust system, and electrical distribution systems. The facility requires surveillance and maintenance to prevent material/structural degradation, to monitor and control facility hazards, to meet regulatory requirements, to maintain the active systems (e.g., exhaust system), and to ensure that the facility remains in a safe and environmentally compliant condition. The REDOX facility complex consists of the main 202S office/canyon building, various ancillary facilities and outdoor waste sites. REDOX has large, below ground sand filters.

This scope also includes writing of new procedures or the update of existing procedure documents that are under configuration control and define work methods and requirements. This is only for the effort by the document writers and does not include the facility staff review and approval of the document. This scope includes the supervisor’s oversight of the writers.

Preventative and Scheduled Maintenance is performed for the following facilities:
- 211S, Cold Chemical Makeup Tank Farm
- 2708S, Storage Building - N of 202S
- 2710S, Inert Gas Generator Building
- 2711S, Stack Gas Monitoring Station
- 2715S, Oil Storage Building
- 2718S, Equipment/Lead Shielding Storage Shed
- 276S, Cold Solvent Storage and Makeup Building
- 2904SA, Cooling Water Sampler Building
- 291S, Exhaust Fan Control House, Sand Filter
- 292S, Jet Pit House
- 293S, Acid Recovery and Off Gas Treatment Bldg
- 202S, Redox Canyon and Service Facility

The preventative maintenance consists of all regularly scheduled maintenance activities including safety related inspection, reliability/availability inspections, and maintenance to extend equipment life or to minimize future corrective maintenance.

The corrective maintenance consists of repair activities that are not planned and do not have a regular schedule for performance. These activities are necessary to restore equipment functionally back to usable levels or to restore the equipment back to a safe condition of operation.

SCOPE EXCLUSIONS: This scope of work does not include activities for “major stack status.”

Assumptions

Requirements

1. See higher level WBS level for additional requirements.
**Scope**

This scope of work provides required surveillance and maintenance for miscellaneous assigned radiological and nuclear facilities not covered under another scope of work to identify and/or prevent material/structural degradation, to monitor and control facility hazards, to meet regulatory requirements, to maintain the active systems (e.g., electrical power distribution), and to ensure the facility remains in a safe and environmentally compliant condition. This work provides only for repetitive/routine surveillance and maintenance activities, and minor follow-up corrective actions and does not provide for major corrective actions, unless otherwise listed. The buildings and Radiological Material Areas (RMA) Waste Pads in this work scope, with a brief description, are listed below:

- 231Z currently has the following active systems: (electrical power distribution, fire detection and suppression system). 231Z is classified as a less than Hazard Category 3 Nuclear Facility.
- 224T currently has the following active systems: electrical power distribution, lighting, and fire detection and suppression system. 224T is classified as a less than Hazard Category 3 Nuclear Facility.
- 242 B/BL is currently in shutdown condition. The 242B/BL basin was cleaned out several years ago, and left full of water.
- The Hot Semi Works facilities are located in the 200E area [215C, 276C, 241C154, 241CX70/71/72 Treatment, Storage, and Disposal (TSDs)], and are classified as Less Than Hazard Category 3 Nuclear Facilities (radiological). The Hot semi works is a deactivated site that is comprised of an abandoned structure and several underground tanks.

This scope also includes writing of new procedures or the update of existing procedure documents that are under configuration control and define work methods and requirements. This is only for the effort by the document writers and does not include the facility staff review and approval of the document. This scope includes the supervisor’s oversight of the writers.

Preventative and Scheduled Maintenance is performed for the following facilities:

- 216Z9, Recuplex Waste Disposal Facility
- 216Z9A, 216Z9 Contaminated Soil Removal Building
- 216Z9B, 216Z9 Mining Operator Cubicle
- 216Z9C, Z-9 Weather Enclosure
- 224B, Concentration Facility
- 224T, Transuranic Storage and Assay Facility
- 231Z, Materials Engineering Laboratory
- 241Z361, Waste Disposal Settling Tank – Underground

The preventative maintenance consists of all regularly scheduled maintenance activities including safety related inspection, reliability/availability inspections, and maintenance to extend equipment life or to minimize future corrective maintenance.

The corrective maintenance consists of repair activities that are not planned and do not have a regular schedule for performance. These activities are necessary to restore equipment functionally back to usable levels or to restore the equipment back to a safe condition of operation.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### CWBS Title
Central Plateau General Purpose Facilities Min Safe

### Scope
This activity scope is for surveillance and maintenance of general purpose facilities primarily located within the Central Plateau and assigned to CPCC in Table J-12. The scope includes administration and clerical coordination of S&M activities. This includes management for maintenance staff; clerical support of staff, both general and specific nature.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
<table>
<thead>
<tr>
<th>CWBS Number</th>
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</thead>
<tbody>
<tr>
<td><strong>CWBS Title</strong></td>
<td>Central Plateau General Purpose Facilities Min Safe Oversight and Support</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>This scope of work includes the Surveillance and Maintenance (S&amp;M) activities for Industrial (Non Radiological, Non Nuclear) General Purpose Facilities (GPF) on the Central Plateau that are assigned to the CPCC. Support activities include: maintenance, training, engineering, RCRA compliant waste management, environmental compliance, other support, supervision, work control and radiation protection. These will be surplus facilities that are no longer required to support the Site mission, and will be vacated due to physical condition and Site downsizing. During all surveillance tours, the buildings are checked for access control, maintenance, and safety issues. Buildings are inspected on a monthly basis from April through September. During the cold weather months, facilities that have a water system remaining in them will be reviewed on a weekly basis to ensure no freezing conditions occur. If a problem is identified during the tour, repairs are noted and resolved. All remaining utility costs for vacant GPF are funded through this activity. These facilities are maintained in a cheap to keep mode until final disposition/demolition is determined and funded. The majority of these vacant facilities have the utilities deactivated as part of the overall disposition process of general purpose facilities. The facilities are located in populated areas on site, and this effort is needed to protect employees and Government equipment. The majority of site facilities are older units that are near or past their useful life, and several are in very poor physical condition. The consistent review of these buildings reduces the liabilities that exist with these facilities. <strong>SCOPE EXCLUSIONS:</strong> This scope of work does not include activities to perform isolation of utilities or demolition of facilities. This scope of work does not include activities for radiological or nuclear facilities.</td>
</tr>
<tr>
<td><strong>Assumptions</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Requirements</strong></td>
<td>1. See higher level WBS level for additional requirements.</td>
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</table>
CWBS Dictionary
RL-0041
Nuclear Facility D&D
River Corridor Closure Project
RL-0040 & RL-0041

WBS Level Definition for Remediation

WBS Level 1 is the Program Baseline Summary (PBS)

WBS Level 2 breaks out the work by Program Management, Remediation and Min-Safe

WBS Level 3 defines geographic regions called Implementation Areas that are primarily organized around reactors, canyons, burial grounds and tank farms.

WBS Level 4 further subdivides Implementation Areas into geographic areas called SQUIDS (Subsequent Unit for Individual Development) that are manageable cleanup projects.

WBS Level 5 categorizes the cleanup objects (waste sites, facilities, pipelines, tanks and barriers) in a SQUID.

WBS Level 6 lists the individual cleanup objects in a SQUID. This provides an inventory of the remediation work in each Implementation Area and SQUID.
Program Management

Remediation of Geographic Area

Min-Safe

PBS

WBS Level 1 is the Program Baseline Summary (PBS)

WBS Level 2 breaks out the work by Program Management, Remediation and Min-Safe

WBS Level 3 refines min safe into min safe for waste sites, nuclear facilities and general purpose facilities.

WBS Level 4 further refines min safe.
<table>
<thead>
<tr>
<th><strong>Scope</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The primary mission of the Nuclear Facility D&amp;D - River Corridor Closure Project is to deactivate, decontaminate, decommission, and demolish facilities, to close utilities located in the Hanford Site river corridor, and to remediate waste sites. Secondary missions include (1) surveillance and maintenance (S&amp;M) for facilities, and (2) field support services for other project and functional elements. The components of the RL-0041 WBS are as follows:</td>
</tr>
<tr>
<td>• Level 1: PBS</td>
</tr>
<tr>
<td>• Level 2: Function (e.g. Program Management, Remediation, Surveillance and Maintenance )</td>
</tr>
<tr>
<td>• Level 3: Implementation Areas</td>
</tr>
<tr>
<td>• Level 4: SQUIDS (Subdivision of Implementation Areas)</td>
</tr>
<tr>
<td>• Level 5: Cleanup Objects (e.g. Reactors, Waste Sites, Facilities)</td>
</tr>
<tr>
<td>• Level 6: Individual Cleanup Objects (e.g. list of items)</td>
</tr>
<tr>
<td>• Level 7: Cleanup actions (e.g. Design, Planning, Excavation, Loadout, Backfill, Closeout)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Assumptions</strong></th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Requirements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

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**CWBS Number**
RL-0041

**CWBS Title**
Nuclear Facility D&D-River Corridor Closure Project
### CWBS Dictionary Sheet

<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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</thead>
<tbody>
<tr>
<td>RL-0041.01</td>
<td>River Corridor Program Management</td>
</tr>
</tbody>
</table>

**Scope**

This WBS element provides overall management and direction to and administrative support for the River Corridor Cleanup Project’s (RCCP’s) facility D4, waste site and pipeline remediation, reactor ISS, and closure activities. This activity includes tasks necessary to obtain required facility decision documents that precede D4 activities and the tasks necessary to address aging facility or waste site conditions that are above and beyond anticipated operational and maintenance plans. It also includes Engineering Studies to conduct cross-cutting engineering and technical studies and trade-off evaluations necessary to optimize design and execution for River Corridor Cleanup facility, ISS, and waste site remediation.

**Assumptions**

**Requirements**

1. Meet Federal and State laws.
2. Comply with DOE Orders and Directives.
3. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA requirements.
The River Corridor cleanup scope includes completion of all activities required to deactivate, decontaminate, decommission, and demolish excess facilities, remediate waste sites and burial grounds, meet regulatory requirements and transition to long term stewardship. The River Corridor geographic area includes 220 square miles of the Hanford Site adjacent to the Columbia River. The remediation and demolition scope has been organized into geographical areas referred to as Implementation Areas (WBS Level 3). Implementation Areas are further subdivided into WBS Level 4 and called SQUIDS (Subsequent Unit for Individual Development). The 100K SQUID and 300 Area SQUID are included in the CPCC scope. The 100 Area Implementation Area is comprised of shut down plutonium production reactors and support facilities in the 100 K SQUID. The 300 Area SQUID is comprised of former reactor fuel fabrication, research, and support facilities (primarily the 324 Building and its ancillary facilities).

The components of the RL-0041.02 WBS are as follows:

- WBS Level 1: PBS
- WBS Level 2: Remediation
- WBS Level 3: Implementation Areas
- WBS Level 4: SQUIDS (Subdivision of Implementation Areas)
- WBS Level 5: Cleanup Objects (e.g. Reactors, Waste Sites, Facilities)
- WBS Level 6: Individual Cleanup Objects (e.g. list of items)
- WBS Level 7: Cleanup actions (e.g. Design, Planning, Excavation, Loadout, Backfill, Closeout)

These Implementation Areas are included in the CPCC:
- RL-0041.02.23 100 Area Implementation Area
- RL-0041.02.25 300 Area Implementation Area

Assumptions

1. Some waste sites are adjacent to or beneath structures that must be removed prior to the waste site remediation.
2. Due to the size of the 100K Area footprint some waste site remediation scope will be encompassed with the activities of another waste site remediation.
3. Remedies are dictated by existing draft and final CERCLA/RCRA Decision Documents.
4. RTD designs have been completed for all PBS RL-41 100-K waste sites and shall be used for work scope execution.
5. 100-K pipelines have been segmented. The final designs show the segments and the remaining segments to be remediated.
6. Waste disposal will remain within the boundary of Hanford and remediated soils and demolition debris will be trucked to these on-site facilities (e.g., ERDF, ETF, CWC, etc.)
7. Groundwater remediation and well decommissioning is performed under PWS Section C.5, PBS RL-0030, Groundwater and Soil Remediation Project.
8. Regulatory documents, up to and including decision documents (ROD, AM, or CAD) and RD/RAWP Rev. 0, will be generated under RL-0030, Groundwater and Soil Remediation Project.
9. Facilities required for post cleanup operations remain in place.
10. Backfill materials are available on site.
11. Hanford waste disposal services are provided under PBS RL-0013 to support the soil waste sites remediation and facility disposition.
12. For all mobile offices not associated with TPA Milestone M-016-00C assumed disposition is relocation to a new on-site location for alternative use.

Requirements

1. Meet Federal and State laws.
2. Comply with DOE Orders and Directives.
3. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA requirements.
6. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
7. Disposal at ERDF for waste sites, pipelines remediation and facility disposition requires approved authorization under CERCLA.
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
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<tbody>
<tr>
<td>RL-0041.02</td>
<td>River Corridor Cleanup</td>
</tr>
</tbody>
</table>
**Scope**

100 Area Implementation Area, 100K SQUID work scope consists of deactivation, decontamination, decommissioning, and demolition (D4) of facilities and remediation of waste sites.

**Assumptions**

1. Garnet filter media removal includes operations at MASF for testing.
2. All equipment for garnet filter media removal has been fabricated, purchased and tested.
3. Sludge removal operations at the 105KW Basin are complete.
4. Characterization and planning for 105KW Basin debris removal is complete.
5. Transfer Cask Assembly-1 will be disposed at ERDF.
6. Fuel pieces will remain in the 105KW Basin and should be planned for disposition as RH-TRU waste.
7. 165KE Power House demolition preparation activities will be complete by the end of FY19.
8. 165KE Power House asbestos abatement is complete.
9. 165KW Power House asbestos abatement is complete.
10. Waste site 130-K-2 (Building 166KE) remediation and close-out documentation are 50% complete by the end of FY19.
11. Remediation and close-out documentation of waste sites 120-KE-8, 100-K-48, and 100-K-104 (sites adjacent to 130-K-2) is 50% complete by the end of FY19.
12. No work has been initiated for excavation and closure sampling for 100-K-55:2, 100-K-56:3 and 100-K-79:6 waste sites.
13. 100-K-57, 100-K-64, 100-K-83 waste sites, 100-K-80, 100-K-96 pipelines along the shoreline and 100-K-113 and 100-K-114 pipelines in the river are in cultural resource sensitive areas; final ROD remediation remedies will need to be coordinated with EPA.
14. RL-0041.02.23.21.01 100K Project Management includes project management for the Min safe and S&M oversight activities, remediation planning, and regulatory closeout and transition phases of the project.

**Requirements**

1. Meet Federal and State laws.
2. Comply with DOE Orders and Directives.
3. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA requirements.
6. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
7. Disposal at ERDF for waste sites, pipelines remediation and facility disposition requires approved authorization under CERCLA.

**Regulatory Decision Documents**

   a) TPA-CN-145 (DA01655444)
   b) TPA-CN-155 (DA02184122)
   c) TPA-CN-160 (DA04279424)
   d) TPA-CN-164 (DA05059135)
   e) TPA-CN-167 (DA05250591)
   f) TPA-CN-216 (0804250105)
   g) TPA-CN-238 (0812091131)
   h) TPA-CN-270 (0904130551)
   i) TPA-CN-331 (1004190822)
   j) TPA-CN-393 (00841115)
   k) TPA-CN-604 (0086976)
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<th>CWBS Title</th>
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</tr>
</thead>
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   a) TPA-CN-605 (0086975)  
   b) TPA-CN-664 (1506301065)  

   a) TPA-CN-456 (0093860)  
   b) TPA-CN-570 (0088599)  
   c) TPA-CN-607 (0086973)  
   d) TPA-CN-663 (1506301064)  

   a) TPA-CN-245 (0908190188)  
   b) TPA-CN-248 (0905200843)  
   c) TPA-CN-277 (0905200844)  
   d) TPA-CN-306 (0911161135)  
   e) TPA-CN-341 (1004190821)  
   f) TPA-CN-318 (0084362)  
   g) TPA-CN-385 (1012090502)  
   h) TPA-CN-411 (1012140647)  
   i) TPA-CN-429 (0093972)  
   j) TPA-CN-442 (0093861)  
   k) TPA-CN-502 (1202271878)  
   l) TPA-CN-503 (0092346)  
   m) TPA-CN-517 (0090072)  
   n) TPA-CN-526 (0092655)  
   o) TPA-CN-549 (1210250419)  
   p) TPA-CN-565 (0089399)  
   q) TPA-CN-579 (1311070383)  
   r) TPA-CN-667 (1506301066)  

   a) TPA-CN-433 (0093859)  
   b) TPA-CN-499 (1202280619)  
   c) TPA-CN-500 (0092654)  
   d) TPA-CN-561 (0088936)  
   e) TPA-CN-665 (1506301069)  
   f) TPA-CN-662 (1506301063)  
   g) TPA-CN-311 (0911161136)  
   h) TPA-CN-320 (1001290783)  
   i) TPA-CN-401 (1012280977)  
   j) TPA-CN-412 (1207260104)  

   a) TPA-CN-0801 (0067650)  

7. Remedial Design/Remedial Action Work Plan For The K Basins Interim Remedial Action Removal Of K Basins Sludge From The River Corridor To The Central Plateau
<table>
<thead>
<tr>
<th>CWBS Number</th>
<th>CWBS Title</th>
<th>Site Type</th>
<th>Approved Remedy</th>
<th>Area SQFT</th>
<th>TPA Milestones</th>
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<tr>
<td>RL-0041.02.23.21.03.39</td>
<td>Remediate Waste Site 100-K-104</td>
<td>French Drain</td>
<td>Remove, treat, dispose</td>
<td>141</td>
<td>M-016-143</td>
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<td>RL-0041.02.23.21.03.11</td>
<td>Remediate Waste Site 100-K-48</td>
<td>Unplanned Release</td>
<td>Remove, treat, dispose</td>
<td>2,299</td>
<td>M-016-143</td>
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<td>RL-0041.02.23.21.03.15</td>
<td>Remediate Waste Site 100-K-55</td>
<td>Radioactive Process Sewer</td>
<td>Remove, treat, dispose</td>
<td>25,460</td>
<td>M-016-00C</td>
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<td>RL-0041.02.23.21.03.16</td>
<td>Remediate Waste Site 100-K-56</td>
<td>Radioactive Process Sewer</td>
<td>Remove, treat, dispose</td>
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<td>M-016-00C</td>
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<td>RL-0041.02.23.21.03.27</td>
<td>Remediate Waste Site 100-K-79</td>
<td>Product Piping</td>
<td>Remove, treat, dispose</td>
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<td>M-016-00C</td>
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<td>RL-0041.02.23.21.03.74</td>
<td>Remediate Waste Site 120-KE-8</td>
<td>Sump</td>
<td>Remove, treat, dispose</td>
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<td>M-016-143</td>
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<td>RL-0041.02.23.21.03.79</td>
<td>Remediate Waste Site 130-KE-2</td>
<td>Storage Tank</td>
<td>Remove, treat, dispose</td>
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<td>M-016-143</td>
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<td>CWBS</td>
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<td>Above Grade Construction</td>
<td>Above Grade Levels</td>
<td>Structure Height FT</td>
<td>Above Grade Area SQ FT</td>
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<td>RL-0041.02.23.21.04</td>
<td>D4 Building 105 KW Basin</td>
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<td>RL-0041.02.23.21.04.16</td>
<td>D4 Building 165KE Concrete moment frames</td>
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<td>26,975</td>
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<td>RL-0041.02.23.21.04.17</td>
<td>D4 Building 165KW Concrete moment frames</td>
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<tr>
<td>RL-0041.02.23.21.04.19</td>
<td>D4 Building 166KE Concrete shear walls</td>
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</table>
100 Area Implementation Area, 100K SQUID
### CWBS Number
RL-0041.02.25.21

### CWBS Title
300 Area Implementation Area, 300A-1 SQUID

### Scope
300 Area Implementation Area, 300A-1 SQUID work scope consists of deactivation, decontamination, decommissioning, and demolition (D4) of facilities and remediation of waste sites and miscellaneous restoration.

### Assumptions
1. 324 Building B cell scoring is complete by the end of FY 19.
2. No additional design activity will be required for completion of the highly contaminated portion of the 300-296 waste sites remote soil excavation activity.
3. Equipment installation in 324 Building Radiochemical Engineering Complex (REC) is complete
4. 324 Building structural modifications are complete.
5. The Readiness Assessment is complete and Startup Approval authority is granted to start remote soil excavation inside the 324 Building.
6. For RL-0041.02.25.21.03.09 Waste Site 300 Area River Pipeline (DNR leased land). Assume the pipeline is approximately 350 feet in length. The proper permits must be obtained and the river pipeline must be removed and land restored to meet the DNR lease requirements by the end of the lease (2024). It is assumed that the United States Fish and Wildlife (USF&W) in Wenatchee will require the following:
   a. Collaborate with the United States Army Corps of Engineers (USACE) and the U.S. National Marine Fisheries Service to develop a mitigation plan prior to, or at least concurrent with implementation.
   b. Prior to pipeline removal, fill snorkel / scuba dive areas to determine the specific habitat type impacted and identify any species using these areas. In particular, several sensitive mollusks may be present in the area. Based on site-specific survey results, additional conservation measures may be required.
   c. Restore the area to achieve the most natural-looking riverbank possible. Native plants for re-vegetation and prevention of noxious weeds should be a priority, as well as concern for post-remediation drainage and erosion from the project area.

### Requirements
1. Meet Federal and State laws.
2. Comply with DOE Orders and Directives.
3. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
4. Comply with CERCLA Section 121 and DOE requirements.
5. Comply with RCRA requirements.
6. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
7. Disposal at ERDF for waste sites, pipelines remediation and facility disposition requires approved authorization under CERCLA.

### Regulatory Decision Documents
1. Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1. Accession: 0087180
2. Explanation Of Significant Differences #2 For The Hanford Site 300 Area Record Of Decision For 300-Ff-2 And 300-FF-5 And Record Of Decision Amendment For 300-FF-1 April 2016. Accession: 0077129H
4. Action Memorandum 2 For 300 Area Facilities 324 Building 327 Building And Associated Ancillary Facilities. Accession: DA02553852
5. Removal Action Work Plan For 300 Area Facilities. Accession: 0077562H
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<th>RL-0041.02.25.21.03</th>
<th>300A-1 Waste Site Remediation</th>
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<td>300 Area Implementation Area, 300A-1 SQUID</td>
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</table>

**300A-1 SQUID**

![Map Image]
**Scope**

This activity encompasses those actions necessary to safely maintain inactive waste sites that contain radioactivity and/or chemical contamination and surplus facilities located primarily on the River Corridor. The minimum safe operations are broken into 3 areas: River Corridor (RC) Waste Sites Min-Safe, RC Nuclear Facilities Min Safe and RC General Purpose Facilities Min Safe. This WBS element includes surveillance and system, structural, equipment, and other maintenance on facilities/buildings and waste sites in the 100, 300, and 600 Areas.

Key activities under this work scope include:

- Maintain a graded S&M program consistent with the condition of the individual facilities, buildings and/or waste sites; the hazards identified through Integrated Safety Management and other appropriate analyses; and the plans for closure.
- Developing, modifying, maintaining procedures and schedules, and performing 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.

This work activity includes the effort that is involved in maintaining facilities and waste sites, of varying size, shape and complexity. All of these items have previously undergone some form of deactivation and or lay-up/stabilization, and are awaiting the next steps in remediation and final disposition. The work activity ultimately provides for the continuous protection of personnel and the environment by maintaining the safety boundary offered by building integrity, passive and active systems, and correction of hazards brought about by natural degradation. The work activity includes both physical surveillance & maintenance and documentation maintenance.

This scope also includes the following programs and their related requirements and deliverables: Environmental Protection, ISMS, Nuclear Safety, Occupational Safety & Health, QA, Emergency Preparedness, Radiation Protection, Safeguards and Security, Baseline Controls, and Training. Other activities include various resources to perform management assessments, ESH&Q support, project controls, management, work control, engineering support, maintenance of required Authorization Agreements, and procedures maintenance as required to maintain a safe and compliant facility or process. Specific duties include access control, records keeping and reporting, surveillance and maintenance, and disposition planning.

The following types of activities will be included in this work. Not every activity listed is required for every area or building, e.g., there are no stack systems in the 600 Area:

- Stack Sampling Surveillance.
- WIDS Sites Surveillance.
- Building and Grounds Integrity Surveillance.
- Abnormal Weather Conditions Building Checks Surveillance.
- Follow-up Corrective Surveillances includes minor contamination cleanup when found, stabilization & isolation of source as required, to reduce or remove biological, chemical and/or radiological health hazards and other minor corrective issues as found.
- Roof inspections/assessments as required.
- System Equipment Inspections.
- Stack Flow Test.
- System/Equipment Testing.
- Radiological surveys.
- Fire System PM’s
- Annual Winterization PM.
- Annual De-winterization PM.
- Exhaust Fan PM.
- Sample Flow Calibration PM.
- Corrective Maintenance activities.
- Housekeeping includes basic maintenance of structures and utilities, maintenance of physical security structures [stairs, railings, walkways, doors]), and debris removal.
<table>
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<tr>
<th><strong>Assumptions</strong></th>
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<tbody>
<tr>
<td>- Minor Waste Handling and Disposal as a result of housekeeping.</td>
</tr>
<tr>
<td>- Recordkeeping</td>
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<tr>
<td>- Inspections with federal or state regulatory agencies</td>
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<tr>
<td>- Pest and Vegetation Control</td>
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</tbody>
</table>

This scope excludes characterization for remediation decision documents and remediation planning as they are included in other WBS elements.

### Requirements

1. Meet Federal and State laws.
2. Comply with DOE Orders and Directives.
3. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
4. Remediation action shall be performed in accordance with the approved regulatory decision documents and work plans.
5. Comply with CERCLA Section 121 and DOE requirements.
6. Comply with RCRA requirements.
**Scope**

This activity scope is for inactive waste sites assigned to PBS RL-0041 and primarily located within the River Corridor and defined in the WIDS database. The scope includes administration and clerical coordination of S&M activities. This includes management for maintenance staff; clerical support of staff, both general and specific nature. Preventive and Corrective maintenance activities include, but are not limited to routine radiological surveillances, tumbleweed and sign management, treatment of surface contamination and general surveillance activities.

Surveillance and maintenance activities include periodic surveillances, annual radiological surveys, annual herbicide applications, removal of deep-rooted vegetation, and occasional corrective action for small areas of surface contamination that may appear. This activity also manages, maintains, and controls inactive, outdoor waste sites including inactive treatment, storage and disposal (TSD) units.

Activities also include performing basic S&M of inactive, outdoor waste sites, resolving radiological control problems, upgrading posting signs and barricades, performing corrective and preventive maintenance, and preventing intrusive weed growth. These activities will be required until final remediation is complete. Herbicide application is required to conduct an aggressive weed control program on Radiation Area Remedial Action (RARA), inactive, outdoor sites. Due to climate and soil conditions at the Hanford Site, disturbed soils are highly susceptible to deep-rooted annual weed growth (such as tumbleweeds). To prevent contamination uptake through the root system, and spreading when the plant dies, it is imperative that these weeds are controlled through the application of appropriate herbicides. Spring, fall and selective applications are used to maintain growth control.

**SCOPE EXCLUSIONS:** This scope of work does not include resources for re-vegetation control which are a site service provided by HMESC. There are no burial costs in this estimate, and tumbleweed disposal is provided by others.

**Assumptions**

**Requirements**
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<tr>
<td>RL-0041.50.01.01</td>
<td>Inactive Waste Sites Min Safe Support</td>
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**Scope**

Min safe support provides support for River Corridor waste sites surveillance and maintenance. This includes technical, infrastructure and administrative support activities necessary for the surveillance and maintenance of radiological or chemically contaminated waste sites. These support activities include: maintenance, training, engineering, RCRA compliant waste management, environmental compliance, other support, supervision, work control and radiation protection.

**Assumptions**

**Requirements**
### Scope

The scope includes radiological (RAD) protection surveillances that are required for the WIDS sites indicated as annual or as semiannual in the Waste Sites Management Plan. In general, the surveillances are performed in accordance with 5 predetermined RAD Survey Tasks which are intended to comply with current procedures. The individual surveys may be performed using hand held equipment or tractor mounted instrumentation. The type of instrument used to perform the survey varies from site to site as does the number and type of samples depending upon the conditions and nature of the individual site.

### Assumptions

### Requirements
**Scope**

This scope includes activities to inspect areas prone to tumbleweed growth, perform dose and contamination surveys of the tumbleweeds and the ground around the tumbleweeds, bag and remove the tumbleweeds to a collection cage until the fire hazard is low enough to bring out a compactor to volume reduce the tumbleweeds and take them to ERDF. Herbicide application is required to conduct an aggressive weed control program on Radiation Area Remedial Action (RARA), inactive, outdoor sites. Due to climate and soil conditions at the Hanford Site, disturbed soils are highly susceptible to deep-rooted annual weed growth (such as tumbleweeds). To prevent contamination uptake through the root system, and spreading when the plant dies, it is imperative that these weeds are controlled through the application of appropriate herbicides. Herbicide application is a direct funded site wide service provided by HMESC at no cost. This scope includes escorting the HMESC vegetation spraying crew which sprays the locations three times per year. Performing spraying three times per year ensures the tumbleweeds and other problem vegetation do not mature between rounds of spraying.

**Assumptions**

**Requirements**
### Scope
The scope includes treatment of surface contamination that is identified in the course of the RAD surveillances. Surface contamination requires much more maintenance and posting than underground contamination. Consequently, maintenance costs are reduced by covering the newly discovered surface contamination so that it becomes underground contamination. This usually consists of spreading a Biological Barrier over the surface and then covering with 6-inches of borrow material. This includes changing the signs postings because the site changes from a surface contamination area to an underground contamination area.

### Assumptions

### Requirements

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<tr>
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<td>RL-0041.50.01.04</td>
<td>Inactive Waste Sites Surface Contamination Treatment</td>
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<tr>
<td>CWBS Title</td>
<td>Inactive Waste Sites Sign Replacement</td>
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</table>

**Scope**
The scope consists of replacement of signs that post hazards and warnings around waste sites. This includes updating out of date postings to current and replacing faded or lost signs. Approximately 10% of signs get replaced per year.

**Assumptions**

**Requirements**
### CWBS Title
Inactive Waste Sites Surveillance

---

**Scope**

The scope includes quarterly TSD inspections (see TSD Site table) and routine surveillance of inactive waste sites primarily located in the 100, 300 and 600 Areas for which PBS 41 is responsible. These activities will be required until final remediation is complete. Table J-13 identifies the individual waste sites that require surveillance and procedures indicate whether the surveillance is performed three times per year or one time annually. The work scope is driven by the following requirements:

- PRC-PRO-QA-40099 Management Observation Program
- PRC-PRO-EP-15333 Environmental Protection Process
- Agreements with the Washington State Department of Ecology

**TSD Site**

- 1325-N Liquid Waste Disposal Facility (120-N-1)
- 1324-NA Percolation Pond (120-N-2)

The requirement is for an annual surveillance. However, successfully gaining regulatory acceptance of meeting the requirements requires that the surveillances be performed three times per year (for the indicated sites). Decisions on the frequency of site inspections and the type and degree of controls are based on the conditions at the individual site and are documented in the Waste Site Management Plan. For example, a site that has radiological surface contamination, prone to dispersal by wind or biological means would need stricter inspection and control measures than would an underground site. For inactive WIDS sites defined to be less than Category 3 on a Form C CHPRC Certification of Inactive Waste Sited, Defined To Be Less Than Category 3, requires an annual inspection (although three times per year may be performed). For all other sites, the inspection shall be based on a graded approach. The surveillances include the following items:

- Signage
- Barriers
- Animal/pest intrusion
- Vegetation
- Ground subsidence
- Vent cap integrity
- Containers (not labeled or identified)
- Occupational hazards
- Apparent changes

Specifically for Asbestos Containing Material (ACM)/Potentially Containing Material (PACM) sites they are generally surveyed twice per year unless two years go by without observing any ACM. After two years without observing ACM, then the frequency drops to one time annually. ACM/PACM surveillances include the following items:

- Signage
- Barriers
- Animal/pest intrusion
- Vegetation
- Ground subsidence
- Containers (not labeled or identified)
- Asbestos site conditions (no unauthorized vehicle traffic that would crumble ACM)
- Asbestos observed

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**Assumptions**

**Requirements**
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**Scope**
The scope consists of replacing the RAD Tractor and its radiological (RAD) instrumentation. Currently the project has two RAD tractors (newest one purchased in FY2016). It is estimated that every 10 years the tractor will be replaced. This scope includes installation of the RAD instruments (labor) as well as training on operation of the tractor.

**Assumptions**

**Requirements**
**Scope**

This scope is for surplus nuclear facilities located within the River Corridor. The scope includes administration and clerical coordination of S&M activities. This includes management for maintenance staff; clerical support of staff, both general and specific nature and spare parts. Preventive and Corrective maintenance activities include, but are not limited to HEPA filter replacements, ventilation testing, portable exhauster aerosol testing, HEPA vacuum aerosol testing, and Alpha CAM Calibrations. Required surveillance activities are defined in the current Surveillance and Maintenance Plans. This WBS element includes project management for the Min safe and S&M oversight activities for River Corridor nuclear facilities.

**Exclusions:** This WBS element does not include specific project management scope for execution of remediation activities in each IA/SQUID.

**Assumptions**

**Requirements**
### CWBS Number
RL-0041.50.02.01

### CWBS Title
Min Safe Oversight and Support

**Scope**
Min safe support provides support for River Corridor nuclear facilities surveillance and maintenance. This includes technical, infrastructure and administrative support activities necessary for the surveillance and maintenance of radiological or chemically contaminated facilities. These support activities include; maintenance, quality assurance, training, engineering, RCRA compliant waste management, environmental compliance, other support, supervision, work control, radiation protection and nuclear safety.

This WBS element provides support required to implement regulatory and contractual requirements for Nuclear and Criticality Safety. The required support activities will continue until the facilities are fully decommissioned or until the facility hazard classifications are downgraded to Less Then Nuclear, Hazard Category 3.

Annual updates of Documented Safety Analyses (DSAs) will be prepared if updates are required or USQ summary evaluation letters will be prepared for transmittal to DOE. Transmittal to DOE is required by the anniversary date. USQ Summary Evaluation Letters are prepared if no changes are planned or required. It also provides preventative and scheduled maintenance activities that are performed for multiple facilities or are not specific to a facility. This includes Portable Exhauster Aerosol Testing, HEPA Vacuum Aerosol Testing, and Alpha CAM Calibrations. The facility specific maintenance scope is in the specific facility WBS elements.

### Assumptions

### Requirements
### Scope
Operation of ventilation systems and safety systems to allow safe compliant access to the hazard category 2 324 Building and ancillary facilities awaiting deactivation and demolition. Includes preventive and corrective maintenance, surveillance rounds, and periodic walkthroughs.  
The preventative maintenance consists of all regularly scheduled maintenance activities including safety related inspection, reliability/availability inspections, and maintenance to extend equipment life or to minimize future corrective maintenance.  
The corrective maintenance consists of repair activities that are not planned and do not have a regular schedule for performance. These activities are necessary to restore equipment functionally back to usable levels or to restore the equipment back to a safe condition of operation.  
After phase 1 300-296 soil removal project activities are complete, introduction of a fixative into the exhaust duct running from the cells and airlock to the A-Frame filters will allow S&M configuration to be down scaled and the ventilation system turned off.

### Assumptions

### Requirements
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<td>RL-0041.50.02.03</td>
<td>105KW Fuel Storage Basin Min Safe</td>
<td>Operation of ventilation systems and safety systems to allow safe compliant access to facilities awaiting deactivation and demolition. Includes preventive and corrective maintenance, surveillance rounds, and periodic walkthroughs.</td>
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</table>
**Scope**

This activity scope is for surveillance and maintenance of general purpose facilities primarily located within the River Corridor and assigned to CPCC in Table J-12. The scope includes administration and clerical coordination of S&M activities. This includes management for maintenance staff; clerical support of staff, both general and specific nature. This scope of work includes the Surveillance and Maintenance (S&M) activities for Industrial (Non Radiological, Non Nuclear) General Purpose Facilities (GPF) on the River Corridor that are assigned to the CPCC. Support activities include; maintenance, training, engineering, RCRA compliant waste management, environmental compliance, other support, supervision, work control and radiation protection. These will be surplus facilities that are no longer required to support the Site mission, and will be vacated due to physical condition and Site downsizing. During all surveillance tours, the buildings are checked for access control, maintenance, and safety issues. Buildings are inspected on a monthly basis from April through September. During the cold weather months, facilities that have a water system remaining in them will be reviewed on a weekly basis to ensure no freezing conditions occur. If a problem is identified during the tour, repairs are noted and resolved. All remaining utility costs for vacant GPF are funded through this activity. These facilities are maintained in a cheap to keep mode until final disposition/demolition is determined and funded. The majority of these vacant facilities have the utilities deactivated as part of the overall disposition process of general purpose facilities. The facilities are located in populated areas on site, and this effort is needed to protect employees and Government equipment. The majority of site facilities are older units that are near or past their useful life, and several are in very poor physical condition. The consistent review of these buildings reduces the liabilities that exist with these facilities.

**SCOPE EXCLUSIONS:** This scope of work does not include activities to perform isolation of utilities or demolition of facilities. This scope of work does not include activities for radiological or nuclear facilities.

**Assumptions**

**Requirements**
CWBS Dictionary
RL-0042
Nuclear Facility D&D
Fast Flux Test Facility Project
Scope

In 2009 the Fast Flux Test Facility (FFTF) complex, which includes the FFTF Plant and its support structures, was transitioned to a long-term, low-cost surveillance and maintenance condition. During facility deactivation and decommissioning the FFTF sodium systems were drained to the extent possible without drilling into the systems. After draining, approximately 10,000 gallons of un-drainable sodium remained in the sodium systems. All sodium systems are currently maintained under an argon buffer gas. It is assumed that FFTF will remain in a long-term, low cost surveillance and maintenance condition until final disposition detailed planning is performed and D4 funding is allocated.

The buildings that make up the FFTF Plant are:
- 403 Fuel Storage Facility
- 405 Reactor Containment
- 408A Dump Heat Exchanger East
- 408B Dump Heat Exchanger South
- 408 Dump Heat Exchanger West
- 409A Closed Loop #1 Dump Heat Exchanger
- 409B Closed Loop #2 Dump Heat Exchanger
- 491E Heat Transport System East
- 491S Heat Transport System South
- 491W Heat Transport System West
- 4621E Auxiliary Equipment Building East
- 4621W Auxiliary Equipment Building West
- 4703 Control Building
- 4717 Reactor Service Building

The FFTF support structures include the following categories:
- Deactivated S&M Buildings Outside the Nuclear Facility
- Operational S&M Buildings
- Other Operational Buildings
- Maintenance and Storage Facility (MASF) and Support Buildings
- Electrical Substations and Switchgear Buildings

Each category is summarized below with its associated building listings:

Deactivated Surveillance and Maintenance (S&M) buildings outside the Nuclear Facility: These buildings provided support to the FFTF Nuclear Facility, but are not included in the Documented Safety Analysis (DSA) as part of the Nuclear Facility boundary. They are individually accessible, and were deactivated. All buildings were cleared of combustibles, and services (water, sewer, electrical, fire detection/protection, etc.) were isolated to the maximum extent practical. Building 4701A will be the exception, as it will retain electricity to power the truck lock gate and some perimeter lighting. The buildings in this category are:
- 432A Storage Facility
- 436 Training Building
- 440 Covered Storage Pad (90-day pad)
- 481A Water Pump House
- 482C Water Storage Tank T-330
- 483 Cooling Tower/Chemical Addition Building
- 484 Chiller Building
- 4701A Guard Station (not isolated from electrical) 4710 Office Building
- 4713A Carpenter/Teamster Building 4713B Maintenance Shop
- 4713D Manipulator Shop/Storage Building 4716 Rigging Loft
- 4718 Interim Storage Area (ISA)
• 4721 FFTF Emergency Turbine Generator Building
Operational S&M buildings: These are under the responsibility of the S&M group that will remain operational during the surveillance and maintenance period. The Sodium Storage Facility (SSF) systems will remain operational (except for the oxygen monitoring system) to safely store approximately 260,000 gallon of bulk sodium in a frozen state. The Dewar pad will supply low pressure argon as a cover gas for all sodium wetted system components, and the SSF storage tanks. The buildings in this category are:
• 402 Sodium Storage Facility 4734A Dewar Pad
Other operational buildings: These buildings are needed to supply water to the 400 Area, and must remain fully operational. The 400 Area will continue to have residents occupying various buildings, and therefore will need certain utility services. In addition to the water supply, sanitary sewer will remain in service. Sanitary sewer system is located outside the fence and consists of a septic tank and the associated drain field. The buildings in this category are:
• 480A Water Supply Well (P-14)
• 480B Water Supply Well (P-15)
• 480D Water Supply Well (P-16) 481 Water Pump House
• 482A Water Storage Tank (T-58)
• 482B Water Storage Tank (T-87)
• 4842B Water Pump House Switchgear Building
Maintenance and Storage Facility (MASF) and support buildings: These remain operational under the Sludge Treatment Project and is expected to be transferred back to the FFTF Project, PBS RL-042, when no longer needed for disposition. The buildings in this category are:
• 437 MASF
• 4608 Process Sewer
• 4608B Control Structure/Process Sewer Sampling
• 4713C Warehouse

Electrical substation and switchgear: This infrastructure in the 400 Area has been taken over by Electric Utilities. The building in this category is 451A FFTF Substation.
In addition, the FFTF complex includes three waste sites some of which are located outside the fence. They exist as a result of FFTF operations and include a septic system, a percolation pond (associated with the 4608 building) and a waste management unit.
In December 2012, The DOE Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC&WM EIS, DOE/EIS–0391) was published. On December 13, 2013 (78 FR 75913), DOE issued the first in a series of Records of Decision (RODs) pursuant to the Final TC&WM EIS. In this ROD, DOE decided to implement FFTF Decommissioning Alternative 2: Entombment. Under this alternative, the above-grade FFTF Reactor Containment Building and its adjacent support buildings/facilities/structures would be dismantled and removed to grade. Waste generated from these activities would be disposed of in the Integrated Disposal Facility (IDF). Below-grade structures, the reactor vessel, piping, and other components, would remain in place along with demolition waste consolidated in below-grade spaces, and filled with grout to immobilize remaining radioactive and hazardous constituents. An engineered modified Resource and Conservation Recovery Act (RCRA) Subtitle C barrier would be constructed over the filled area, followed by post-closure care and institutional controls. The FFTF remote-handled special components would have radioactively contaminated sodium residuals removed and disposed. Also under Alternative 2, Hanford’s bulk sodium inventory would be converted to caustic sodium hydroxide in a Sodium Reaction Facility (SRF) at Hanford, and then stored for ultimate product reuse at Hanford’s Waste Treatment Plant (WTP).
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<td>Nuclear Facility D&amp;D Fast Flux Test Facility Project</td>
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<tr>
<td>CWBS Title</td>
<td>FFTF Program Management</td>
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Scope

This activity provides the overall Program Management needed to maintain FFTF and associated facilities in a safe condition while deactivation and decommissioning activities, and long term surveillance and maintenance are being performed. Activities will include required planning and management of facility operations, maintenance, engineering, radiological control, training, and regulatory compliance. Provides overall management and direction to and administrative support for FFTF Complex long term surveillance and maintenance, eventual facility disposition, waste site remediation and final closure activities. Activities will include required planning and management of facility operations, maintenance, engineering, radiological control, training, and regulatory compliance. Project technical support: 1) Implement and overview the quality assurance program at FFTF; 2) Provide engineering management and support staff to overview and implement configuration management, engineering management programs, and system condition assessments; 3) Provide regulatory compliance staff and routine environmental monitoring for the FFTF. Scope includes operations within the Hanford air emissions permit and the state waste water discharge permit. Regulatory staff ensures compliance with hazardous waste disposal requirements and support recycling efforts; 4) Provide safety support and oversight for FFTF S&M activities. This includes industrial safety, nuclear safety, criticality safety, and fire protection activities. Annual Integrated Safety Management System (ISMS) assessments are provided in this task. This task also includes maintenance of the FFTF safety basis documentation.

Assumptions

Requirements
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<tr>
<td>RL-0042.50</td>
<td>Maintain Safe and Compliant FFTF Complex</td>
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**Scope**

This activity encompasses those actions necessary to safely maintain FFTF systems and equipment in a safe, compliant mode. The minimum safe operations are broken into two areas: FFTF Min-Safe Operations and 400A Water Systems. Although fire detection systems are maintained within the FFTF Facilities, there are no fire protection capabilities. The FFTF Plant has been evaluated as a zero value facility to the Department of Energy and an approval received from HQ for a “stand back and watch” response to a sodium fire, and not to initiate firefighting protocols.

**Assumptions**

**Requirements**

1. Meet Federal and State laws.
2. Comply with DOE Orders and Directives.
3. Comply with Tri-Party Agreement (TPA) milestones and TPA requirements.
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<th>CWBS Number</th>
<th>RL-0042.50.01</th>
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<tbody>
<tr>
<td>CWBS Title</td>
<td>FFTF Min-Safe Operations</td>
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**Scope**

This activity scope is for the FFTF Project buildings and facilities “within the FFTF boundary fence,” but excludes those facilities that support the 400 Area Potable/Fire Water System as their primary function.

**GENERAL ADMINISTRATION**

Provide administration and clerical coordination of Operations and S&M activities. This includes management for operations and maintenance staff; clerical support of staff, both general and specific nature.

It should be noted that MASF is managed by another PBS and the operations scope for MASF is not captured in this WBS.

**Assumptions**

There are no burial costs assumed in this WBS element, and tumbleweed disposal is provided by others.

**Requirements**

1. See higher level WBS level for additional requirements.
## Scope

The preventative maintenance consists of all regularly scheduled maintenance activities including safety related inspection, reliability/availability inspections, maintenance to extend equipment life or to minimize future corrective maintenance, surveillances, winterization preparations, and inspections/checks required by Federal or State law. The FFTF Min Safe includes annual inspection of all facilities, maintenance activities for the 400 Area Waste Management Unit, the 400 Area septic tank and drain field (including assumed pumping of the septic tank every five years), roof replacement, procurement/buyer labor (for materials and equipment needed for scheduled maintenance and corrective maintenance), participation in Fire Protection and NPH Training (including performance of annual review of revised Fire Protection requirements), and compliance with National Fire Protection Association E70. This electrical work includes electrical inspections, checks, and part cleaning necessary and is only performed for electrical systems that are currently used (no maintenance on unused but active systems).

Each preventative and scheduled maintenance activity currently has instructions that prescribe the steps to follow in performing the activity. Additionally, the activity may also have a procedure document that identifies the applicable regulations (e.g. National Fire Protection Association E70), policies, etc. that require the maintenance and defines the work steps.

The majority of the buildings included in the FFTF Min Safe have no value and no current or future use. These facilities have components that are “active” but may not be energized. Maintenance is performed only on systems and components that are currently used (e.g. lights needed during annual inspections). Systems or components that are “active” but not needed or used for current activities are in a “shut-down” condition and not maintained but may become energized if electrical breakers were switch to a closed position.

The FFTF Min Safe has approximately 13 facilities, 80 maintained components, and 120 preventative and scheduled maintenances. Of the 120 preventative and scheduled maintenances, approximately 50 are related to fire protection activities that are primarily performed by the Hanford Fire Department.

Perform routine preventive maintenance necessary to maintain the functionality and operation of facility systems and structures which continue in use. This scope includes inspections, lubrications, and similar actions; particularly as related to cranes and hoists. In addition, this scope includes instrument calibrations, such as oxygen monitors, hand and shoe personnel contamination monitors, and process sewer discharge monitors.

Perform repair activities necessary to maintain the functionality and operation of facility systems and structures which continue in use. This scope includes problem identification, development of repair instructions, repair parts, and all aspects of the work performance, retest, and closeout.

Maintain maintenance procedures for the FFTF, including instrument calibration and preventive maintenance procedures.

## Assumptions

## Requirements

1. See higher level WBS level for additional requirements.
### CWBS Title
Corrective Maintenance

### Scope
The corrective maintenance consists of repair activities that are not planned and do not have a regular schedule for performance. These activities are necessary to restore equipment functionally back to usable levels or to restore the equipment back to a safe condition of operation.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
CWBS Number
RL-0042.50.01.03

Scope
This scope includes the development, review, approval, and closeout of work packages that are used to control the schedule and work steps followed to accomplish both preventative and scheduled, and corrective maintenance. This scope includes the posting and approvals of the various work package components into the Job Control System but does not include the Job Control System management functions, upgrades, or other database system support.

Provide the work management processes for all work prepared and performed in the FFTF complex. The manager provides oversight and direction of day-to-day operations of the work management process. The manager is also the interpretive authority for the application of the work control procedures at the FFTF.

This task also includes maintenance of the FFTF equipment and procedure data.

Assumptions

Requirements
1. See higher level WBS level for additional requirements.
### Scope
The Supervision scope includes the man hours that are for the typical day to day assignment of worker tasks and oversight of the worker’s completion of those tasks. It includes administration of employee evaluations and related supervisory human resource functions.

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
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<tr>
<td>RL-0042.50.01.05</td>
<td>Training</td>
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**Scope**

This activity implements training programs for Hanford Project employees and subcontractors who support the FFTF project in the 400 Area. This includes: Program management and supervision, maintenance of Training Programs Records, scheduling support, the analysis, design, development and review of training courses and programs associated with Operations and EDS qualification, Maintenance training, and Technical Support Staff training programs. This includes continuing training and retraining, tuition for Hammer and other offsite required training, the time spent by staff attending training classes and seminars, and the maintenance and administration of the FFTF Emergency Preparedness program, including Emergency and Operational drills and exercises.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
### Scope
Scope for this WBS is for the 400 Area potable/fire water supply system which includes the water supply pipes, and fire hydrants of the 400 area (extends beyond the FFTF project fence boundary). Although fire detection systems are maintained within the FFTF Facilities, there are no fire protection capabilities. The FFTF Plant has been evaluated as a zero value facility to the Department of Energy and an approval received from HQ for a “stand back and watch” response to a sodium fire, and not to initiate fire fighting protocols. The 400 Area will continue to have residents occupying various buildings, and therefore will need certain utility services. In addition to the water supply, sanitary sewer will remain in service. Sanitary sewer consists of a stand-alone septic tank and associated drain field. The buildings that support the 400 Area water system are: 480A (Water Supply Well [P-14]), 480B (Water Supply Well [P-15]), 480D (Water Supply Well [P-16]), 481 (Water Pump House), 482A (Water Storage Tank [T-58]), 482B (Water Storage Tank [T-87]), and 4842B (Water Pump House Switchgear Building).

### Assumptions

### Requirements
1. See higher level WBS level for additional requirements.
### CWBS Title
Preventative and Scheduled Maintenance

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<td>Preventative and Scheduled Maintenance</td>
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**Scope**

The preventative maintenance consists of all regularly scheduled maintenance activities including safety related inspection, reliability/availability inspections, maintenance to extend equipment life or to minimize future corrective maintenance, surveillances, winterization preparations, and inspections/checks required by Federal or State law.

The 400 Area Potable/Fire Water System has approximately 7 facilities, 100 maintained components, and 120 preventative and scheduled maintenance activities.

**Assumptions**

**Requirements**

1. See higher level WBS level for additional requirements.
**CWBS Number**  
**RL-0042.50.02.02**  

**CWBS Title**  
Corrective Maintenance

### Assumptions

1. See higher level WBS level for additional requirements.

### Requirements

**Scope**

This scope covers those facilities primarily used for the 400 Area Potable/Fire Water System. This includes the water supply lines and fire hydrants in the 400 Area to the point of the first valve connection to the water supply system. The corrective maintenance consists of repair activities that are not planned and do not have a regular schedule for performance. These activities are necessary to restore equipment functionally back to usable levels or to restore the equipment back to a safe condition of operation.
### Assumptions

1. See higher level WBS level for additional requirements.

### Requirements

This scope includes the development, review, approval, and closeout of work packages that are used to control the schedule and work steps followed to accomplish both preventative and scheduled, and corrective maintenance. This scope includes the posting and approvals of the various work package components into the Job Control System but does not include the Job Control System management functions, upgrades, or other database system support.
## CWBS Dictionary Sheet

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<tr>
<td>RL-0042.50.02.04</td>
<td>Supervision</td>
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### Scope

The Supervision scope includes the man hours that are for the typical day to day assignment of worker tasks and oversight of the worker’s completion of those tasks. It includes administration of employee evaluations and related supervisory human resource functions.

### Assumptions

### Requirements

1. See higher level WBS level for additional requirements.
## Scope
This activity implements training programs for Hanford Project employees and subcontractors who support the FFTF project in the 400 Area. This includes: Program management and supervision, maintenance of Training Programs Records, scheduling support, the analysis, design, development and review of training courses and programs associated with Operations and EDS qualification, Maintenance training, and Technical Support Staff training programs. This includes continuing training and retraining, Tuition for Hammer and other offsite required training, the time spent by staff attending training classes and seminars, and the maintenance and administration of the FFTF Emergency Preparedness program, including Emergency and Operational drills and exercises.

## Assumptions

## Requirements
1. See higher level WBS level for additional requirements.