Attachment L-15

WBS Dictionaries for Task Order 2 – SST Retrieval and Closure
T.2.1.1 Operations Management and Support

WBS Dictionary

(a) **Scope of Work:**

1. Operations Management and Support includes work scope that is bound to the efforts required to remediate and close Tank 241-A-106, as referenced in Section C.4.

2. **Operations Management (T.2.1.1.1):** Responsible for management and oversight of operational and maintenance activities, work release, field execution, readiness for testing, commissioning and operations, operator training, project management, and administrative support. Scope includes providing strategic direction; establishing organizational standards, policies, expectations, and core values; and defining program scope, priorities, and execution goals for all of Retrieval Operations.


   i. ESH&Q serves as the central point of sponsorship for the safety and health representatives from the Hanford Atomic Metal Trades Council (HAMTC). The ESH&Q Support is the technical point of contact for the Hanford Advisory Board, Defense Nuclear Facilities Safety Board (DNFSB), and other assessing governmental and U.S. Department of Energy (DOE) oversight organizations (including DOE Office of Enforcement).

4. **Engineering (T.2.1.1.3):** Engineering provides disciplined leads for mechanical, ventilation, civil/structural, and electrical and instrumentation control pertaining to engineering and design initiatives, a design authority program, and system design description updates. When appointed by DOE, Engineering functions as the design authority and acts as the National Fire Protection Association (NFPA) 70, National Electrical Code Authority Having Jurisdiction. Engineering is responsible for establishing and maintaining the Documented Safety Analysis, Technical Safety Requirements, system health reports, engineering procedures, standards, and configuration control of engineering drawings in support of retrieval operations and maintenance and closure activities for various reports, plans, and other documents, as needed. This includes providing the engineering performance indicators, engineering qualification process, maintenance of SmartPlant Foundation software, and management of the engineering program budget.

5. **Project Support (T.2.1.1.4):** This scope also includes supporting day-to-day operating, maintenance, and closure activities, including cost and schedule performance reporting, change control, project cost estimating, and budgeting. Scope includes providing project communication for information distribution, project risk response control and project procurement and contract execution interface.

(b) **Scope Requirements:**

1. RPP-PLAN-40761, Rev. 3, Integrated Single-Shell Tank Waste Management Area Closure Plan

2. RPP-23403, Rev. 5, Single-Shell Tank Component Closure Data Quality Objectives

3. RPP-PLAN-23837, Rev. 3, Sampling and Analysis Plan for Single-Shell Tanks Component Closure
Tank Closure Contract
T.2.1.1 Operations Management and Support
WBS Dictionary

(4) RPP-PLAN-37243, Rev. 2, Phase 2 RCRA Facility Investigation/Corrective Measures Study Master Work Plan for Single-Shell Tank Waste Management Areas

(5) RPP-PLAN-60583, Tank Farm Pipe Material Code Reconstitution and Implementation Plan

(6) RPP System Plan, current revision, ORP-11242 – Waste Feed Delivery Program Requirements

(7) TFC-PRJ-PM-C-02, current revision, Project Management

(8) DOE/RL-2010-54, Rev. 1, Engineering Evaluation/Cost Analysis for 200 East Area Tier 2 Buildings/Structures

(9) DOE/RL-2010-102, Rev. 0, Action Memorandum for Decontamination, Deactivation, Decommissioning, and Demolition (D4) Activities for 200 East Tier 2 Buildings/Structures

(10) RPP-PLAN-23827, Rev. 3, Sampling and Analysis Plan for Single-Shell Tanks Component Closure

(11) RPP-23403, Rev. 5, Single-Shell Tank Component Closure Data Quality Objectives

(12) RPP-PLAN-39837, Rev. 1, Test Plan for the Closure Demonstration Cold Testing

(13) RPP-PLAN-37243, Rev. 2, Phase 2 RCRA Facility Investigation/Corrective Measures Study Master Work Plan for Single-Shell Tank Waste Management Areas

(14) RPP-PLAN-39837, Rev. 1, Test Plan for the Closure Demonstration Cold Testing

(15) RPP-PLAN-40761, Rev 3, Integrated Single-Shell Tank Waste Management Area Closure Plan

(16) RPP-RPT-41918, Rev. 0, Assessment Context for Performance Assessment for Waste in C Tank Farm Facilities after Closure

(17) RPP-RPT-42231, Rev. 1, Summary of Twenty-Five Miscellaneous Tanks Associated with the Single-Shell Tank System

(18) RPP-RPT-42323, Rev. 2, Hanford C-Farm Tank and Ancillary Equipment Residual Waste Inventory Estimates

(19) RPP-PLAN-46484, Rev 3, Waste Management Area C Closure Demonstration Project Plan

(20) RPP-PLAN-47325, Rev. 1, Radioactive Waste Determination Process Plan for Waste Management Area C Tank Waste Residuals

(21) RPP-SPEC-49617, Rev. 0, Waste Management Area C Closure Subsystem Specification

(22) RPP-RPT-49701, Rev. 0, Waste Management Area C Closure – Conceptual Design Report

(23) RPP-50233, Rev. 0, Waste Management Area C Closure Conceptual Design Support Document

(24) Hanford Federal Facility Agreement and Consent Order (HFFACO) (aka Tri-Party Agreement [TPA])

(c) **Scope Assumptions:**

(1) No pre-determined period of performance or cradle to grave operation.
(2) Self-Contained Breathing Apparatus (SCBA) required for farm entry.


(4) Assume an ABCD DuPont work-shift during retrieval operations.

(5) Tank Waste Retrieval Work Plan has been approved by DOE and Washington State Department of Ecology.

(6) Assume retrieval system includes three (3) Extended Reached Sluicers.

(7) Waste Retrieval System and Double-Shell Tank (DST) receiver tank installation have been completed prior to task execution.

(8) Ventilation system and HIHTLs from the diversion box to the DST receiver tank have been installed.

(9) Assume Construction Acceptance Testing and Operation Acceptance Testing have been completed.

(10) Retrieval operations include required surveillances and rounds.

(11) Planned retrieval technologies include modified sluicing, hot water, and caustic dissolution (if required).

(12) Spare Parts are available for operations and are provided for general maintenance activities only.

(13) HAMTC support remains consistent.

(14) 222-S Laboratory will provide tank waste sampling support and analysis.

(15) Necessary interfaces and utilities are available in the facility to support operation of retrieval systems.

(16) Current standard practices for RadCon and industrial health safety remains unchanged.

(17) A Readiness Verification Checklist (RVC) is performed to satisfy start-up/readiness requirements.

(18) Post-retrieval volume will be calculated based on video assessment/modeling and/or laser volume measurement system.

(19) Waste sampling during operations will be limited to four grab samples events.

(20) Significant changes in national engineering standards or DOE Order and Directives will not occur.

(21) Staff training and skill development will continue each fiscal year to support staff mobility and skill set retention and to cover attrition.

(22) Funding for subcontractor to provide subject matter expert (SME) training on root cause analysis, apparent cause analysis, and causal analysis instructor certification is not covered under this WBS.

(23) The Prime Contract requirements establishing the minimum elements of the technical and administrative Production Operations program will remain constant.
(24) Project support activities and requirements will remain at their current programmed levels; new work scope requiring development and implementation of new requirements will require additional funding for staff.

(25) Construction of the tank farm retrieval system will be bounded by the existing safety basis.

(26) Soil contamination is acceptable for construction activity without extensive remediation.

(27) Completion criteria for the A-106 Closure work scope is limited to commercial grouted filling of Tank 241-A-106 at approximately 750 kgal.

(d) **Exclusions:**

Retrieval and closure activities outside of Tank 241-A-106.
(a) **Scope of Work:**

1. **Retrieval of A-106**: Retrieval of A-106 includes work scope that is bound to the efforts required to retrieve Tank 241-A-106, as referenced in Section C.4.

2. **Readiness, Commissioning, and Operation of Retrieval Systems (T.2.1.2.1)**: Ensure readiness for testing, commissioning, and operation of retrieval systems in compliance with DOE O 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*, and DOE-ORP approved contractor procedures.

3. **A-106 Retrieval Startup/Readiness**: Retrieval Startup and Readiness includes developing a Plant Readiness Management Self-Assessment (MSA) prior to initiating retrieval operations. This assessment is a formal review conducted by operations management to ensure readiness that the waste retrieval system has been met.
   
   (i) Other work scope includes performing a Verification of Readiness, which is accomplished by performance-based evaluations, including, but not limited to, review of documentation, field observations, interviews, observation of training evolutions, integrated system checkouts or cold run demonstrations, and walk downs of drawings and procedures.

4. **A-106 Retrieval Operations and Maintenance**: This work scope includes the operation and maintenance (corrective and preventative) for the 241-A-106 waste retrieval system. The primary method and first technology for retrieval is the use of modified sluicing. Modified sluicing is the controlled introduction of liquid into the waste at varying pressures and volumes. The liquid dissolves and breaks apart solid materials and suspends them into the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a diversion box and then to a Double-Shell Tank (DST) receiver tank. A second retrieval technology, a high-pressure water system, will be deployed and utilized in conjunction with the sluicing system. Waste retrieval operations will continue until the first and second technologies are no longer effectively retrieving waste from the tank. A third retrieval technology may be required to extract any residual waste materials.

5. **A-106 Post Retrieval Sampling and Analysis**: Includes retrieval sampling and analysis of the Single-Shell Tank (SST) using the Off-Riser Sampling System (ORSS) or other sampling method. Sampling and analysis data is utilized by processes engineering to validate waste compatibility, retrieval method and technology, system design, process controls, and future decisions on deploying a third technology, or in support of the terminal Retrieval Data Report. Work packages, field work equipment removals, sampling, residual volume analysis, and demobilization are in this scope.

6. **A-106 Retrieval Data Report**: Prepare a Retrieval Completion Report, Retrieval Completion Certification, and, if the retrieval goal is not reached, a feasibility/viability evaluation of other available retrieval technologies, the feasibility of developing additional retrieval technologies, associated detailed cost estimates and amount of additional waste that could be removed will be developed, to provide evidence to DOE-ORP and Washington Department of Ecology of completed tank waste retrieval actions.

7. **A-106 Project Support**: Provide for the retrieval operations project management support, which includes the project management function and administrative support. Scope includes
maintenance and status of the detailed scope, schedule and cost execution baseline, and emergent risk mitigation actions, as well as informal and formal reporting of project status.

(b) **Scope Requirements:**

1. DOE O 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*
2. HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements, as amended
3. HNF-4492, Interface Control Document between the Tank Farm System and the Fluor Hanford Electrical Distribution System
4. HNF-4493, Interface Control Document between the Tank Farm System and the Fluor Hanford Water Distribution System
5. RPP-13033, Tank Farms Documented Safety Analysis, as amended
6. Authorization Basis (TFC) Documented Safety Analysis
7. Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement [TPA])

(c) **Scope Assumptions:**

1. No pre-determined period of performance or cradle to grave operation.
2. Self-Contained Breathing Apparatus (SCBA) required for SST farm entry.
4. ABCD DuPont work-shift during retrieval operations.
5. Tank Waste Retrieval Work Plan has been approved by DOE and Washington State Department of Ecology.
6. Retrieval system includes three (3) Extended Reached Sluicers.
7. Waste Retrieval System and DST receiver tank installation has been completed prior to task execution.
8. Ventilation system and HIHTLs from the diversion box to the DST receiver tank have been installed.
9. Construction Acceptance Testing and Operation Acceptance Testing has been completed.
10. Retrieval operations include required surveillances and rounds.
11. Planned retrieval technologies include modified sluicing, hot water, and caustic dissolution (if required).
12. Spare Parts are available for operations and are provided for general maintenance activities only.
13. HAMTC support remains consistent.
14. 222-S Laboratory will provide tank waste sampling support and analysis.
(15) Necessary interfaces and utilities are available in the facility to support operation of retrieval systems.

(16) Current standard practices for RadCon and industrial health safety remains unchanged.

(17) A Readiness Verification Checklist (RVC) is performed to satisfy start-up/readiness requirements.

(18) Post retrieval volume will be calculated based on video assessment/modeling.

(19) Waste sampling during operations will be limited to four (4) grab samples events.

(d) **Exclusions:**

(1) No provisions have been made to procure spare Parts for any unplanned facility enhancements/systems that may be subsequently developed/installed, catastrophic failures, or major system upgrades that may be ultimately required.

(2) Corrective and preventative maintenance for other A/AX Farm tanks is excluded from this scope.
(a) **Scope of Work:**

(1) Work scope for Tank Closure is bound to the efforts required to layup and close Tank 241-A-106, as referenced in Section C.4.

(2) **Tank Layup and Stabilization (T.2.2.1.1):** This scope includes layup and stabilization of Tank 241-A-106 at the completion of retrieval operations.

   (i) Layup and stabilization activities include removal and disposal of the Hose-in-Hose Transfer Lines, revision to the applicable Documented Safety Analysis, technical safety requirement (TSR) controls to reflect Materials at Risk (MAR), removal of reusable equipment, and stabilization of equipment, such that maintenance is not required and no hazards to personnel or the environment exist.

(3) **Close Tank (T.2.2.1.2):** Execute closure activities in accordance with approved Tier 3, 2, and 1 closure plans.

   (i) Tank closure includes isolation of ventilation, isolation of the tank, and interconnected piping; grouting of the tank and associated radiological waste pipelines within the tank farm boundary; capping the tank to prevent water intrusion; and preparation of the Resource Conservation and Recovery Act of 1976 (RCRA) Certification Package for Closure.

(b) **Scope Requirements:**

(1) RPP-PLAN-23827, Rev. 3, Sampling and Analysis Plan for Single-Shell Tanks Component Closure

(2) RPP-23403, Rev. 5, Single-Shell Tank Component Closure Data Quality Objectives RPP-PLAN-39837, Rev. 1, Test Plan for the Closure Demonstration Cold Testing

(3) RPP-PLAN-37243, Rev. 2, Phase 2 RCRA Facility Investigation/Corrective Measures Study Master Work Plan for Single-Shell Tank Waste Management Areas

(4) RPP-RPT-38152, Rev. 0, Data Quality Objectives Report Phase 2 Characterization for Waste Management Area C RCRA Field Investigation/Corrective Measures Study

(5) RPP-PLAN-39837, Rev. 1, Test Plan for the Closure Demonstration Cold Testing

(6) RPP-PLAN-40761, Rev 3, Integrated Single-Shell Tank Waste Management Area Closure Plan

(7) RPP-RPT-41550, Rev. 1A, Closure Demonstration Grout Test Report

(8) RPP-RPT-41918, Rev. 0, Assessment Context for Performance Assessment for Waste in C Tank Farm Facilities after Closure

(9) RPP-RPT-42231, Rev. 1, Summary of Twenty-Five Miscellaneous Tanks Associated with the Single-Shell Tank System

(10) RPP-RPT-42323, Rev. 2, Hanford C-Farm Tank and Ancillary Equipment Residual Waste Inventory Estimates

(11) RPP-RPT-44042, Rev. 0, Recharge and Waste Release within Engineered System in Waste Management Area C
(12) RPP-46459, Rev. 3, Single-Shell Tank Waste Management Area C RCRA/CERCLA Integration White Paper

(13) RPP-PLAN-46484, Rev 3, Waste Management Area C Closure Demonstration Project Plan

(14) RPP-PLAN-47325, Rev. 1, Radioactive Waste Determination Process Plan for Waste Management Area C Tank Waste Residuals

(15) RPP-PLAN-47559, Rev. 1, Single-Shell Tank Waste Management Area C Pipeline Feasibility Evaluation

(16) RPP-SPEC-49617, Rev. 0, Waste Management Area C Closure Subsystem Specification

(17) RPP-RPT-49701, Rev. 0, Waste Management Area C Closure – Conceptual Design Report

(18) RPP-50233, Rev 0, Waste Management Area C Closure Conceptual Design Support Document

(19) Hanford Federal Facility Agreement and Consent Order (HFFACO) (aka Tri-Party Agreement [TPA])

(20) RPP-27195, Tank Operations Contractor Unreviewed Safety Question Process Out of Scope Documents and Facilities

(21) TFC-PLN-135, WRPS Safety Improvement Plan

(c) **Scope Assumptions:**

(1) No pre-determined period of performance or cradle to grave operation.

(2) Self-Contained Breathing Apparatus (SCBA) required for farm entry.

(3) Waste Incidental to Reprocessing (WIR) and Tier 3, 2, and 1 have been approved.

(4) Closure of other inactive waste sites is performed under other WBS elements.

(5) Waste retrieval is performed under other WBS elements.

(6) Risk and performance assessments are performed as part of other WBS elements.

(7) Necessary interfaces and utilities are available to support closure activities.

(8) The Tank Closure and Waste Management Environmental Impact Statement Record of Decision and RCRA Closure Permit will result in a landfill closure decision.

(9) Design reviews will be conducted in accordance with tank farm procedures.

(10) Design includes isolation of the tank valving, cascade lines (as applicable), sealing of intrusion pathways, and similar activities, to prevent grout flow from one tank or structure to another during grout filling.

(11) Remove access plates from each pit and reinstall at end of isolation.
(12) Any jumpers, piping, and/or equipment remaining in the pits from pit remediation will be grouted in the pits.

(13) Plates, other than access plates, will be left in place and will not require disposal.

(14) Pit work will be limited to plugging pit drains and sealing riser covers, where necessary.

(15) Pits will be remediated prior to tank isolation.

(16) Install a new Closed-Circuit Television (CCTV) system, if required to support fill operations.

(17) Grout formulations will be established prior to tank fill operations.

(18) Tank closure includes filling the tank with commercially available materials to formulate grout.

(19) Tank fill is assumed to include the placement of a stabilizing layer of grout in the bottom of the tank, and then bulk filling of the tank with additional grout layers.

(20) The tank fill material will meet requirements for void volume and subsidence/expansion.

(21) Tank barrier/cap includes an asphalt-type cap, similar to other Hanford interim barriers.

(d) **Exclusions:**

(1) Additional retrieval technologies or operations.

(2) Additional tank sampling.

(3) Installation of new equipment in the tank.

(4) Disconnection or removal of any electrically charged equipment.

(5) Installation of new ventilation systems.