Attachment L-17

WBS Dictionaries for Task Order 3 – Supplemental Information
(a) **Scope of Work:**

(1) The Closure Plans and Interim Actions includes work scope to remediate and close Single-Shell Tanks (SST), as referenced in Section C.4.

(2) **Tier 1, Tier 2, and Tier 3 RCRA Closure Plans:** Obtain regulatory approval of final closure actions in an efficient manner, minimizing deferral of closure activities and reliance on interim actions.

   (i) Prepare and/or obtain regulatory approval of:

   (A) Tier 1 Closure Plans specific to the SST System and Double-Shell Tank (DST) System


   (B) Tier 2 Closure Plan specific to each of the seven Tank Farm Waste Management Areas (WMA)

      (I) Submit the Final RCRA Tier 2 Closure Plan to DOE for DOE and Ecology’s approval.

      (II) For the next WMA(s), prepare and submit the Tier 2 Closure Plan(s) to DOE for DOE and Ecology’s review and comment. Submit the Final Tier 2 Closure Plan(s) to DOE for DOE and Ecology’s approval.

   (C) Tier 3 Closure Plans specific to groupings of components (vessel or structure) for each of the seven Tank Farm WMAs

      (I) Submit the Final RCRA Tier 3 Closure Plan to DOE for DOE and Ecology’s approval.

      (II) For the WMA-C 100 Series Tanks Tier 3 Closure Plan, prepare and submit the Tier 3 Closure Plan to DOE for DOE and Ecology’s review and comment. The Contractor shall then submit the Final RCRA Tier 3 Closure Plan to DOE for DOE and Ecology’s approval.

      (III) For the WMA-C C-301 Catch Tank RCRA Tier 3 Closure Plan, the Contractor shall prepare and submit the Tier 3 Closure Plan to DOE for DOE and Ecology’s review and comment. The Contractor shall then submit the Final RCRA Tier 3 Closure Plan to DOE for DOE and Ecology’s approval.

      (IV) For the WMA-C CR Vault RCRA Tier 3 Closure Plan, the Contractor shall prepare and submit the Tier 3 Closure Plan to DOE for DOE and Ecology’s review and comment. The Contractor shall then submit the Final RCRA Tier 3 Closure Plan to DOE for DOE and Ecology’s approval.

      (V) For the WMA C Ancillary Equipment RCRA Tier 3 Closure Plan, the Contractor shall prepare and submit the Tier 3 Closure Plan to DOE for DOE and Ecology’s review and comment. The Contractor shall then submit the Final RCRA Tier 3 Closure Plan to DOE for DOE and Ecology’s approval. For the next WMA(s), the
Contractor shall prepare and submit the Tier 3 Closure Plan(s) to DOE for DOE and Ecology’s review and comment. The Contractor shall then submit the Final Tier 3 Closure Plan(s) to DOE for DOE and Ecology’s approval.

(VI) For the next WMA(s), prepare and submit the Tier 3 Closure Plan(s) to DOE for DOE and Ecology’s review and comment. Submit the Final Tier 3 Closure Plan(s) to DOE for DOE and Ecology’s approval.

(D) Complete Waste Incidental to Reprocessing (WIR) and associated Performance Assessment (PA) activities.

(E) Continue support for Hanford Composite Analysis (CA) work for site closure.

(F) Participate in the Annual Interim Measures Meeting to determine the specific work scope to support interim TPA milestone compliance.

(3) **Interim Actions:** Design and install interim surface barriers in the order of highest risk to the groundwater.

(4) Deliverables are as referenced in Section J-10.

(b) **Scope Requirements:**

(1) Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)

(2) DOE/ORP-2018-01, Draft D, *Draft Waste Incidental to Reprocessing Evaluation for Closure of Waste Management Area C at the Hanford Site*

(3) RPP-ENV-58782, 2016, Performance Assessment of Waste Management Area C, Hanford Site, 26 Washington, Rev. 0

(4) RPP-RPT-41918, 2010, Assessment Context for Performance Assessment for Waste in C Tank 25 Farm Facilities after Closure, Rev. 0

(c) **Scope Assumptions:**

(1) Core functions and services will be provided by Tank Farm Base Operations.

(2) Central Tank Operations scope is for a 6-month period.

(3) WMA-C Tier 1 Closure Plan submitted to Washington State Department of Ecology (Ecology) on September 2015 for review and comment.

(4) WMA-C Tier 2 Closure Plan submitted to Ecology on May 2017 for review and comment.

(5) WMA-C 200 Series Tanks Tier 3 Closure Plan submitted to Ecology on May 2017 for review and comment.

(6) RCRA WMA-C 100 Series Tanks Tier 3 Closure Plan includes the following components:

(i) Tanks C101-C106

(ii) Tanks C107-C112

(iii) Tank C-301 (Catch Tank)
(iv) CR Vault

(v) Ancillary Equipment.

(7) Draft WIR Evaluation for Closure of WMA-C is under review by the U.S. Nuclear Regulatory Commission (NRC).

(8) Future Performance Assessments are for WMA-A/AX.

(9) WMA-A/AX will have similar types of component plans as WMA-C.

(10) Performance Assessments requires:

   (i) 435.1 Performance Assessment

   (ii) Baseline Risk Assessment

   (iii) Past Leaks Document

   (iv) RCRA Closure Assessment.

(11) Existing interim barrier(s) require adherence to the maintenance and performance plan that was previously approved.

(12) TX Farm interim barrier design will be completed by September 30, 2019, similar to other interim barriers on the Hanford Site.

(13) Interim surface barrier to be constructed within the Tank Farm fence line based on Ecology approved design.

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

(15) Nuclear Safety and Licensing is not required.

(16) No new permitting is required.

(17) No archeological artifacts will be encountered during excavations.

(18) Minimum excavation work will be required.

(19) Removal of existing equipment will not be required prior to basin construction and barrier installation.

(d) **Exclusions:**

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

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

(3) Risk and performance assessments are performed as part of other WBS elements.
(a) Scope of Work:

(1) The Single Shell Tank (SST) Retrievals includes work scope to retrieve tank waste from SSTs and transfer to DST receiver tank consistent with the Consent Decree, as referenced in Section C.4.2 and C.4.3.

(2) SST Retrieval Management and Support: This work scope includes management of operational and maintenance activities, field oversight, project management, administrative support, and project controls, as well as communications with any other entity within or outside of the Tank Closure Contract (TCC). Work release and operator training is performed under T.3.2.1, Central Tank Operations.

(3) SST Retrieval Engineering and Technical Support: Provide SST Retrieval specific engineering support, engineering & design initiatives, design authority functions, and system design description updates. Direct technical support for the SST System Operations organization includes Authorization Basis implementation, Corrective Action Management, Assessment Program implementation, Performance Assurance Management, and Engineering Support for special projects. Also, maintain configuration control of engineering drawings in support of maintenance activities for various reports, plans, and other documents, as needed.

(i) Develop, implement, and maintain an approved process for the selection and sequencing of SSTs for remediation, associated interim, and final closure methods based upon a DOE validated set of environmental risks, which includes at least Tc-99 and economy of scale, as referenced in Section J-10.

(ii) Maintain and update the Integrated SST Remediation Plan, previously known as the Integrated SST Retrieval Plan, which describes closure objectives, remediation methodologies, near-term SST commitments, and risk-based sequence, as referenced in Section J-10.

(iii) Incorporate and integrate SST remediation planning into the overall Radiation Protection Program System Plan.

(iv) Continuously evaluate existing and alternative waste remediation and leak detection methods and technologies, demonstrate improved system efficiencies and equipment reliability for SST remediation, and achieve efficiently optimized pathway(s) to tank closure. For each method and associated technology determine:

(A) Limitations

(B) Efficiencies

(C) Safety and environmental concerns and/or improvements

(D) Cost and schedule impacts.

(v) Establish process controls to prevent transfer line and equipment degradation, preserve DST integrity, prevent flammable gas issues, and other potential safety and environmental concerns.
(vi) Manage, maintain, and operate the Cold Test Facility to support testing and development of retrieval and tank sampling technologies; this will include simulated operations for personnel training.

(vii) Support and enable use of the Cold Test Facility for Tank Closure Mission technology initiatives sponsored by DOE in a cost-effective manner.

(4) **SST Retrieval Operations**: Retrieve SSTs and transfer tank waste to Double-Shell Tank (DST) receiver tank consistent with the Consent Decree requirements for Tank Waste Retrievals.

(i) Complete the design, procurement, field installations, and testing of the retrieval systems and interconnected transfer route.

(ii) Ensure the design, installations, testing, and operational activities address loss of tank integrity.

(iii) Ensure readiness for testing, commissioning, and operation of retrieval systems.

(iv) Develop and execute SST Retrieval standard operating procedures (SOP) for the retrieval and transfer of tank waste to the DST system. At a minimum SOPs must address:

   (A) Operator, radiological control, and IH rounds and surveillances

   (B) Operations and maintenance.

(v) Retrieval operations are complete for each tank when the following has been accomplished:

   (A) Limits of technology are met

   (B) Certification of completion received from Ecology.

(5) **SST Retrieval Maintenance**: Perform preventive maintenance (PM) and corrective maintenance (CM) of SST waste retrieval and transfer systems, structures, and components (SSCs). This includes the scheduling and deconflicting of work in the field.

(i) **SST Corrective Maintenance**: Provide corrective maintenance of retrieval and transfer system SSCs to support retrieval operations and the safe storage of tank waste.

   (A) Provide corrective maintenance, as needed, in support of SST retrieval and transfer system SSCs repair or replacement of systems, structures, and components (SSCs) needed to maintain or preserve the facility’s safe and compliant condition, or normal operational functions.

   (B) Manage and oversee the development, review, approval, execution, and closeout of maintenance work packages.

(ii) **SST Preventative Maintenance**: Provide SST retrieval and transfer system SSCs preventative maintenance to retrieval operations and support safe storage of tank waste.

   (A) Provide preventative maintenance in accordance with manufacturer’s and/or design authority’s recommendations to maintain or preserve the facility’s safe and compliant condition, or normal operational functions.
Preventative maintenance includes predictive, periodic, and planned maintenance actions; is employed to satisfy regulatory requirements and manufacturer’s maintenance recommendations; and ensure optimum equipment operating life until facility closure.

Maintain configuration control of routine model work packages.

Manage and oversee the development, review, approval, execution, and closeout of maintenance work packages.

Maintenance activities are performed in accordance with the approved work control process plan, and worker safety and health processes/procedures, such as the Job Hazard Analysis (JHA) procedure and the Electrical Hazards Evaluation (EHE) procedure.

**Scope Requirements:**

1. HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
2. RPP-13033, Tank Farms Documented Safety Analysis
3. HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
4. RPP-13033, Tank Farms Documented Safety Analysis
5. Contract Deliverables are summarized in Section J-10, Attachment J-10
10. HNF-5183, Tank Farms Radiological Control Manual, and implementing Administrative Procedures
11. HNF-SD-WM-TRD-007, System Specification for the Double-Shell Tank System
12. HNF-4155, Double-Shell Tank Monitor and Control Subsystem Specification
13. HNF-4157, Double-Shell Tank Utilities Subsystem Specification
14. HNF-4159, Double-Shell Tank Maintenance and Recovery Subsystem Specification
15. HNF-4160, Double-Shell Tank Transfer Valving Subsystem Specification
16. HNF-4161, Double-Shell Tank Transfer Piping Subsystem Specification
17. HNF-4162, Double-Shell Tank Transfer Pump Subsystem Specification
18. HNF-4163, Double-Shell Tank Diluent and Flush Subsystem Specification
(19) RPP-SPEC-45605, Double-Shell Tank Ventilation Subsystem Specification

(c) **Scope Assumptions:**

1. SST Retrievals is for a 6-month period.
2. Core functions and services will be provided by Tank Farm Base Operations.
3. Self-Contained Breathing Apparatus (SCBA) required for SST farm entry.
4. DST Preventative and Maintenance provided by DST System Operations and is not included
5. Waste disposal (other than tank waste), including offsite disposal services, is provided by Central Tank Operations.
6. Warehouse services are provided by Central Tank Operations.
7. Hanford Site services provides water, electrical power, fire protection, and security.
8. 222-S Laboratory will continue to be available for tank sampling/analysis, per section J-3.
10. Tank Retrieval Work Plans for Tanks A-105 and A-106 have not yet been drafted.
11. Assume the following SST Retrieval status:

   i. AX-102 – Complete retrieval operations, conduct Post-Retrieval Sampling and Analysis, and submit preliminary Retrieval Data Report for review by WA Dept. of Ecology.
   ii. AX-104 – Complete waste receiver system installations, start-up and readiness.
   iii. AX-103 – Proceed with waste receiver system installations.
   iv. AX-101 - Proceed with waste receiver system installations.
   v. A-Farm Ventilation System work scope: exhausters and ducting installed to tank. Remaining work includes installing in-tank manifolds (tank risers cleared) and hot tie-in, and testing/readiness.
   vi. A-Farm DST Receiver Tank (AP-101) – Complete design work scope, initiate procurements and work planning for equipment installation.
   x. A-104 – Completed waste retrieval technology development.
(xi) A-105 – No work scheduled or planned.


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

(13) The Prime Contract requirements establishing the minimum elements of the technical and administrative SST Retrieval program will remain constant.

(14) 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.

(15) The tanks are structurally sound.

(16) Construction of the Tank Farm Retrieval System will be bounded by the existing Safety Basis.

(17) Required modification to the Safety Basis will bound future Tank Farm Retrieval Systems.

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

(19) Evaporator campaigns are performed as necessary to maintain DST space available to support tank retrievals.

(d) Exclusions:

Tank Closure or equipment layup/stabilization.
(a) **Scope of Work:**

(1) Tank Closure includes work scope for layup and closure of Single-Shell Tanks (SST), as referenced in Section C.4.6.

(2) **Tank Layup and Stabilization:** This scope includes layup and stabilization of SSTs 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:** Execute closure activities in accordance with approved Tier 3, 2, 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) TFC-PLN-135, Safety Improvement Plan

(21) This activity will be performed in accordance with applicable requirements in the following:

   (i) Contract No. DE-AC27-08RV14800, U.S. Department of Energy (DOE)

   (ii) Office of River Protection Hanford Federal Facility Agreement

   (iii) Consent Order (HFFACO).

(c) **Scope Assumptions:**

(1) Tank Closure is for a 6-month period.

(2) Core functions and services will be provided by Tank Farm Base Operations.

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

(4) SST Preventative and Maintenance provided by SST System Operations and is not included.

(5) Waste disposal (other than tank waste), including offsite disposal services, is provided by Central Tank Operations.

(6) Warehouse services are provided by Central Tank Operations.

(7) WMA C closure planning to date established a standard for use in WMA A single shell tank farms, i.e. closure planning and draft conceptual design report

(8) WIR and Tier 3 have been approved

(9) Interim barrier/cap, if required, will be planned to cover whole tank farms
(10) Closure of inactive waste sites is performed under other WBS elements.

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

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

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


(15) The 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.

(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.
(a) **Scope of Work:**

(1) Establish and maintain the capability to pretreat tank waste and transfer pretreated low-activity waste to a treatment facility, as reference in Section C.8.

(2) **Management and Support:** Assume responsibility for management and oversight of the existing at-tank cesium removal capability and low activity waste feed delivery system designs and associated construction subcontract(s) that will be in place under the Tank Operations Contract (TOC).

   (i) Maintain, manage, and execute to the existing lifecycle scope, schedule and cost baselines for the Low Activity Waste Pretreatment System (LAWPS) Sub-Projects 1 and 2 through Critical Decision (CD)-4, Approve Start of Operations, and Project Completion, for each subproject, in accordance with requirements set forth in this Contract and DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

   (ii) This work scope also includes developing a reporting Project Performance on the technical scope, schedule, and cost profile until U.S. Department of Energy (DOE) approves CD-4 for each subproject. The requirements and procedures for this system shall be defined in the Earned Value Management System (EVMS) description. Deliverables are listed below and as referenced in Section J-10.

   (A) Project Management Plan

   (B) Earned Value Management System Description

   (C) Performance Measurement Baseline

   (D) Risk Management Plan

   (E) Monthly Performance Reports

(3) **Engineering, Procurement, Installation and testing:**

   (i) Complete the design, installation, testing activities for at-tank cesium removal capability prior to delivery of pretreated low activity tank waste to WTP.

      (A) Assume responsibility for management and oversight of the existing at-tank cesium removal capability design and associated construction subcontract(s) that will be in place under the Tank Operations Contract.

   (ii) Complete the design, installation, testing, and readiness activities for low activity waste feed delivery to the tank waste delivery system necessary to:

      (A) Deploy the at-tank cesium removal capability.

      (B) Transfer pretreated low activity waste to WTP.

      (C) Receive waste streams from WTP to DST system.

(4) **Start Up and Readiness:** Complete readiness activities prior to startup of the at-tank cesium removal and low activity waste feed delivery systems and delivery of pretreated low activity tank waste to WTP. Startup and Readiness includes ensuring that the facility, programs and personnel
are prepared for, and successfully complete, both Contractor and DOE Operational Readiness Review (ORR) within the DOE approved Performance Measurement Baseline (PMB) and in accordance with DOE O 425.1, Verification of Readiness to Start Up or Restart Nuclear Facilities, or current version, prior to start of operations (hot commissioning). The Contractor Declaration of Readiness may include a manageable list of pre- and post-start corrective actions for identified deficiencies.

(b) **Scope Requirements:**

Tri-Party Agreement (TPA) Appendix D – Milestone M-045-91-I

(c) **Scope Assumptions:**

1. LAWPS Phase 1 Project Management is for a 6-month period.
2. Core functions and services will be provided by Tank Farm Base Operations.
3. At-tank cesium removal system will be located near AP-Farm, a DST farm.
4. Self-Contained Breathing Apparatus (SCBA) and/or air-purifying respirators (APRs) fitted with chemical filter cartridges required for DST farm entry.
5. DST Preventative and Maintenance provided by DST System Operations and are not included.
6. Waste disposal, including offsite disposal services, is provided by Central Tank Operations.
7. Central Operations assumes all responsibility for DST farms during off-shift.
8. Warehouse services are provided by Central Tank Operations.
9. Hanford site services provide water, electrical power, fire protection, and security.
10. 222-S Laboratory will continue to be available for tank sampling/analysis, per section J-3.
11. Permitting activities include, but are not limited to: updates of the Regulatory Strategy/Permitting Plan, as necessary, Resource Conservation and Recovery Act of 1976 (RCRA) Permit, Clean Air Act Permits, Water Quality Permits, and NEPA determination.
12. Maintenance and updates of the Safety Design Strategy, the Conceptual Safety Design Report, the Criticality Safety Evaluation, the Preliminary Documented Safety Analysis (PDSA), Documented Safety Analysis (DSA), Technical Safety Requirements (TSR), Process Hazard and Accident Analyses, Functions and Requirements Evaluation Document (FRED), and Safety Requirements Evaluation Documents (SRED) to continue under the Project Performance reporting system, as per Section C.8.2.
13. Contractor also accepts and concurs with:
   - (i) Certified Vendor Information Reviews
   - (ii) Quality Assurance Surveillances
   - (iii) Project Turnover Scoping Document
   - (iv) Updated Site Evaluation Report
(v) Electronic data for incorporation into design media
(vi) Licensed geotechnical engineer recommendations.

(14) Tank Side Cesium Removal is for a 6-month period.

(15) Installation activities include setting the TSCR skid, tie-ins/hooks-ups, and testing.

(16) Startup and readiness completed in conjunction with DST System Upgrades.

(17) Tank-Side Cesium Removal (TSCR) project management, support, permitting, safety analysis, readiness, testing, operations and decommissioning scopes and budgets are captured in T.4.2.1, LAWPS Phase 1 Project Management.

(18) AP-106 Grab Sample for Feed Qualification has not been completed and/or approved.

(19) Procurement for DST Upgrades includes fabrication, assembly, delivery, acceptance inspections, and payment of HIHTL, radiation shielding, drop-leg, pump assembly, electrical, and control equipment.

(20) DST Upgrades and installation activities performed in this period is limited to contractor mobilization, preparations for and HIHTL removals and installations from tank to TSCR; install IXC column mock-up unit, electrical and controls equipment, drop-leg and pump-assembly.

(21) Excavation, valving, and pit-work are considered incidental to HIHTL installation and/or pipe re-routing.

(d) **Exclusions:**

None.