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RCT-PXP-027

Revision 0

Project Execution Plan for the TRU Waste Sorting System-1 (TSS-1) Refurbishment Project

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1.0 PROJECT OVERVIEW

1.1 Background

The Waste Isolation Pilot Plant (WIPP) is a cornerstone of the Department of Energy's nuclear waste cleanup effort. The WIPP is designed to permanently dispose of transuranic (TRU) radioactive waste left from the research and production of nuclear weapons. Located in Southeastern New Mexico, 32 road miles east of Carlsbad, the project facilities include disposal rooms excavated in an ancient and stable salt formation 2,150 feet underground. Transuranic waste consists of clothing, tools, rags, and other disposal items contaminated with trace amounts of radioactive elements, including plutonium.

Washington TRU Solutions LLC (WTS) is the managing and operating contractor for the Department of Energy/Carlsbad Field Office (DOE/CBFO) at the WIPP.

WTS is acquiring technical support services to refurbish the existing TRU waste Sorting System-1 (TSS-1) at the Los Alamos National Laboratory (LANL) site. TSS-1 is a self contained TRU waste Visual Examination (VE) unit. TSS-1 is currently located at the DOE's LANL Site.

1.2 Purpose

The purpose of this Project Execution Plan (PXP) is to identify critical information necessary to manage the modification and deployment of TSS-1 to enhance waste remediation capabilities at LANL. When the modification is completed TSS-1 will be turned over to LANL for the Start-Up activities. This project will be performed and completed in accordance with all applicable DOE, WTS and CCP Quality Assurance (QA), Procurement, and Configuration Management (CM) requirements.

1.3 Work Scope

WTS will manage the refurbishment and functional testing of the existing TSS-1 and will turn over to LANL for Start-up activities. In order to refurbish the existing TSS-1, WTS will use Washington Safety Management Solutions (WSMS), RJR Engineering, PC, (RJR) which are on the qualified supplier list (QSL), and an additional subcontractor that will be selected. The scope of this project will include the following:

1.3.1 **Project Administration**- development and maintenance of this PXP, project controls, project management, and communications.

1.3.2 **Quality Assurance –** This project has been graded as QL-1. Perform QSL request as appropriate, and work with WTS QA to provide fabrication oversight.

1.3.3 **Development : Under PO's with respective subcontractors**

- Technical Support Services – [redacted]
  - Develop Safety Basis addendum to the 2003 Area G DSA
  - Develop TSR Changes
  - Design input for the refurbishment of TSS-1
  - Technical support for start-up activities
  - Specialty technical and regulatory support
- Technical Support Services – RJR
  - Visually inspect TSS-1 and prepare as-found drawings
  - Complete a redesign of TSS-1 that includes:
    - A. Improved Ventilation system
    - B. Bag-in/Bag-out system
    - C. Continuous air monitors
    - D. Fire suppression system
    - E. Neutron counter
    - F. Overall system integration
  - List of parts to be reused or replaced
  - Specifications for new parts
  - Detailed operating instructions of all systems
  - As-built drawings
  - Start-up Test Plan
  - Equipment Description and System Design Description
  - Request for Quotation (RFQ) information required for WTS to procure installation and test of new equipment
- LANL
  - Relocate and supply required utilities for TSS-1
  - Define requirements/inputs for AB issues
  - Coordinate all on-site activities

1.3.4 **Health and Safety Plan** (HSP) – identify the hazards associated with operation of TSS-1, perform an associated hazard analysis, and develop hazard controls; address both CCP and Host site Health and Safety Plans.

1.3.5 **Configuration Management** (CM) – enter TSS-1 unit into the WTS property system and set up a CM file.

1.3.6 Procurement-develop and manage all of the contract documents. They will guide the STR with all procurement activities and interface with the suppliers with any financial dealings.

Table 1. Work Scope Matrix

R – Responsible **C – Contributor**

	WTS	[redacted]	[redacted]	LANL	Subcontractor To Be Determined (TBD)
Project Administration	R			C	
Scope of Work for Technical Services	R				
Design of Refurbished TSS-1			R		
Design Description	R		R		
Procurement of Materials					R
Assembly and Integration					R
Certificate of Conformance					R
Addendum to Documented Safety Analysis		R			
Health and Safety Plan	R				
Evaluate Current Condition of TSS-1			R		
Statement of Work for Refurbishment			R		
Configuration Management	R		C		
Certification for operation at LANL	C			R	

1.4 Applicable Reference Documents

- Statement of Works (SOW) associated with PO 411875 and 411863
- WP 09-CN3005, *Graded Approach to Application of QA Controls.*

1.5 Priority

This project is to be given a priority to support the visual examination and repackaging effort at LANL.

2.0 CONTRACT OVERVIEW

The Project will be conducted in Area G at the LANL. LANL is the Host site for TSS-1. The Project Manager will interface directly with Area G Facility Management at LANL. Routine integration meetings and conference calls will be conducted by the Project Manager to provide integration and status on the project.

3.0 PROJECT ORGANIZATION AND RESOURCES

The development and deployment of TSS-1 will be executed by a variety of resources. The following individuals are assigned to this project:

- Project Sponsor
  [redacted] [redacted] [redacted]
- Project Manager
  [redacted] [redacted] [redacted]
- Project Engineer
  [redacted] [redacted] [redacted]
- Project Scheduling
  [redacted] [redacted] [redacted]
- Site Technical Representative (STR)
  [redacted] [redacted] [redacted]
- LANL Project Manager
  [redacted] [redacted] [redacted]
- Safety
  [redacted] [redacted] [redacted]
- Quality Assurance
  [redacted] [redacted] [redacted]
- Quality Engineer
  [redacted] [redacted] [redacted]

- Radiological Engineering
  To Be Determined (TBD)

- Procurement
  [redacted]

  Refurbishment subcontractor – TBD

As the project moves forward, and in accordance with scheduling and budget constraints, other individuals may be assigned as appropriate.

[redacted], WTS-CCP Financial Management of Retrieval, Characterization, and Transportation, is the Cost Account Manager (CAM) for this activity.

4.0 PROJECT ADMINISTRATION

WTS has a responsibility to ensure that this project is completed in a timely manner while remaining in compliance with requirements. WTS integrates these activities through the following key activities:

- Contractual agreement between WTS and RJR, WSMS and subcontractor TBD
- Meeting all requirements for approval of technical data and drawings.
- Meeting all requirements for approval of procurement documents.
- Visiting the site, performing audits and overall progress verification.
- Correspondences originated either by WTS/LANL or the Supplier to determine various project costs and schedule improvements, as well as impacts due to changing technical requirements. These correspondences will be addressed through any of the following methods:
  - Meeting minutes
  - Memoranda
  - Telephone Conversations
  - Mailing addresses both physical and electronic
- Performing regularly scheduled budget meetings, integration and operations meetings that track project progress and identify and resolve issues.
- WTS ownership of design documentation.

5.0 PROJECT BUDGET AND SCHEDULE

5.1 Budget

LANL has agreed to provide 2 million dollars to fund the TSS-1 refurbishment project:

Sub-contractors: [redacted]
Material & Supply:
Travel:
WTS labor:

Account: [redacted]

WTS will manage the refurbishment of TSS-1 and LANL will take the responsibility of all the activities related to start-up outside this scope of work.

5.2 Schedule

This project was initiated July 2009. The schedule is driven by the desired completion milestone of TSS-1. A tentative schedule has been developed and will be maintained through Project Controls. A schedule for the design is listed as a deliverable in the Purchase Order with [redacted] A schedule for the material acquisition, assembly, and testing of the TSS-1 will be listed as a deliverable with the fabrication subcontractor. Refer to project schedule for dates.

6.0 PROJECT RESOURCES

Key project personnel are listed in Section 3.0.

7.0 UNIQUE PROJECT CONSIDERATIONS

The TSS-1 Project will have the following unique considerations:

- The supplier personnel will need to be escorted at LANL.
- The project will be managed by WTS personnel from Carlsbad and will require extensive coordination with the outside LANL Project Manager.
- The use of three subcontractors to perform technical services, design, procurement, installation, modification and testing.
- Existing equipment is used.

- Existing equipment is contaminated.
- There is no original documentation for existing equipment.

8.0 ENGINEERING AND DESIGN

The engineering and design of the refurbishment TSS-1 will be performed by RJR. WTS CCP and WIPP site resources will be utilized for all engineering and QA reviews. The design will be approved by WTS via the AR/VR process. The design of the TSS-1 will include components outlined in the SOW.

9.0 PROCUREMENT AND MATERIALS MANAGEMENT

Procurement will be managed by the WTS Procurement Group utilizing approved procurement procedures.

Two Purchase Orders have been placed for Technical Services:

PO 411875 with [redacted]
PO 411863 with [redacted]
PO ******* with TBD

A Purchase Order will be placed with a subcontractor to acquire materials, assemble, and test the refurbishment of TSS-1. A Cross Functional Team (CFT), consisting of individuals selected for their broad level of experience, will perform and document a technical evaluation of the proposals. The best value source selection proposal that complies with all of the technical requirements, delivery dates, and general terms and conditions of the Request for Proposal, and is in the best interest of WTS and the Government will be selected.

10.0 PROJECT CONTROLS

The project control system seeks to be responsive to internal management requirements and provide WIPP participants with an increased cost and schedule performance visibility of the accomplishment of project objectives. In addition to providing a formal integrated schedule and resource plan, the management control system provides analysis of planned versus actual performance and early detection or prediction of problems that require management attention. In summary, the WIPP Project Control System provides for:

- Organization: Contractual efforts are established and responsibilities assigned for the work.
- Planning and Budgeting: Work is formally planned, scheduled, budgeted, and authorized.
- Accounting: Costs of work and material are accumulated.

- Analysis: Planned and actual performance is compared and variances analyzed.
- Revisions and Access to Data: Estimates of final costs are developed along with methods to incorporate baseline changes in these estimates.
- Risk Management: Describes the WIPP risk identification, assessment, mitigation, and monitoring process.

This PXP addresses the detailed project scope and schedule for the upgrade of the TSS-1. Formal processes are established and documented in this PXP for communications, configuration control, and issues management. The PXP will be controlled by the designated Project Manager to ensure that revisions are processed and approved by appropriate parties, that distribution is maintained, and that associated changes are maintained for record purposes.

11.0 PROJECT QUALITY PLAN

All work will be performed under each subcontractor's approved QA Program as a QSL qualified supplier. Fabrication oversight will be conducted by qualified individuals and performed in accordance with the provisions of 13-QA3020, Fabrication Oversight. This includes the verification of critical attributes and/or technical requirements specified by RCT Engineering; including criterion cited in the respective SOW.

QA requirements, including the QA Program, Engineering Design Program, Inspection Requirements, Personnel Qualification, Quality Clauses, and Documentation Requirements shall be the primary basis for submittals and deliverables as specified in the respective SOW.

12.0 CONSTRUCTION

Refurbishment and testing of the TSS-1 unit will be performed under a purchase order with the fabrication subcontractor. The refurbishment will only occur after the design has been approved by WTS via AR/VR. It is anticipated that once the TSS-1 is operational, electrical and utility hook-ups will be needed to run the TSS-1.

13.0 COMMISSIONING AND START-UP

Per the SOW, a functional Test Plan is to be provided by the supplier. The functional test will be performed at LANL site before TSS-1 will be turned over to LANL. The Start-Up of the unit will be managed by LANL and is outside of this scope of work.

14.0 ENVIRONMENT, SAFETY, AND HEALTH

This project will incorporate the Integrated Safety Management System (ISMS) requirements. The DOE requires all nuclear sites to have a ISMS that systematically integrates safety into management and work practices at all levels to protect the public, the worker and the environment. All facets of work planning and execution are incorporated into the system, which requires a systematic approach for selecting and incorporating appropriate safety standards and work controls into each project. The ISMS ensures that all hazards are identified and abated, controlled or otherwise mitigated before work begins with new equipment or systems.

The TSS-1 project scope must incorporate two of the ISMS Guiding Principles: # 5 - Identification of Safety Standards and Requirements, and #6 - Hazard Controls Tailored to Work Being Performed.

Guiding Principle #5 states that clearly defined safety requirements must be incorporated into WTS subcontracts for operation and construction activities such as TSS-1. Compliance with applicable safety and technical requirements is expected and verified.

Guiding Principle #6 states that safety hazards are identified and controlled, especially for high potential events with unacceptable consequences such as a potential for uptake. Safety analyses used to identify hazards must be comprehensive and based on sound engineering judgment and data. Selection of hazard controls must consider the type of hazard, magnitude of the hazard, type of work and life cycle of the facility, and be designed and implemented commensurate with the level and type of hazard. Defense-in-depth must be designed into high hazard operations and activities, and includes independent, redundant and diverse safety systems, which are not overly complex.

Emphasis is placed on designing work and controls to reduce or eliminate the hazards, prevent accidents and unplanned releases and exposures. Inherently safe designs are preferred over those requiring external engineering controls.

Upon successful design, fabrication, and testing, TSS-1 shall conform to the requirements of the PO, addressing all specific Environmental, Safety and Health issues.

15.0 RISK MANAGEMENT PLAN

A unique risk associated with the development and deployment of the TSS-1 is that the equipment was abandoned after a contamination incident and has been exposed to the elements for four years. Another risk is the redesign, fabrication, and assembly is outside of CCP's normal area of expertise. The procurement of such activities/items is described in CCP-QP-015, CCP Procurement. It invokes the involvement of organizations outside of CCP such as WTS QA in the

process. This risk is being managed through the development of this PXP and associated procurement documents. Meetings are scheduled to address concerns from past events.

The Risk Management Assessment is shown in attachment 1.

16.0 PROJECT CLOSEOUT

The TSS-1 refurbishment project will be considered closed upon the completion of **ALL** contractual agreements between WTS and [redacted] and the subcontractor that does the refurbishing. When considered closed the TSS-1 will be fully functioning and ready for LANL to begin the Start-Up procedures.

17.0 PROJECT PROCEDURES

The WTS/CCP specific procedures involved with this project are listed below:

- WP 09-CN3005, *Graded Approach to Application of QA Controls*
- CCP-QP-010, *CCP Document Preparation, Approval, and Control*
- CCP-QP-015, *CCP Procurement*
- CCP-QP-022, *CCP Software Quality Assurance Plan*
- CCP-CM-001, *CCP Equipment Change Authorization and Documentation*
- WP 13-1. WTS Quality Assurance Program Description
- WP 15-PC3609, WTS Preparation of Purchase Requisitions

Attachment 1 – Risk Management Assessment

TSS-1 – TRU Waste Sorter System Project

Item Number	Description of Condition	Probability	Consequence	Overall Risk	Mitigation Actions
1.	Inability to use existing Glove Box or Transportainer in their current condition	Low	High	Medium	Inspect TSS-1 • Make repairs /modifications as needed • decontamination of TSS-1
2.	Specifying incorrect or unclear requirements. Misinterpreting or missing requirements.	Medium	Medium	Medium	Design reviews • Expert reviews • ID high risk areas • Plan frequent status meetings with LANL project management
3.	Subcontractor unable to meet schedule or technical requirements.	Medium	High	Medium	Assure subcontractor qualifications meet project needs • Provide clear performance expectations • Create deadlines based on scheduling milestones
4.	Inability to communicate clearly between all parties involved, i.e. WTS Carlsbad/LANL, [redacted] and the fabrication subcontractor	Medium	Low	Medium	Schedule effective meetings/phone conferences to resolve issues • Inform **ALL** parties of any changes to scope
5.	Limited Access to LANL/DOE facilities where TSS-1 is located	Medium/ High	Medium	Medium	Define site access requirements for CCP personnel as well as non-CCP personnel and inform subcontractors of those requirements• Coordination with LANL management

Attachment 1 Risk Management Assessment (Continued)

TSS-1 – TRU Waste Sorter System Project

Item Number	Description of Condition	Probability		Consequence	Overall Risk	Mitigation Actions
6.	Lack of clear and documented definition of LANL's Roles, Responsibilities, and Resource Commitments	Medium/ High		Medium	Medium	Implement and execute interface agreement between LANL and CCP
7.	Project Execution Roadblocks - Staffing/ Participation - Management Priority - Weather/Force Majeure - Change in Scope	Medium	Medium	Medium	Keep senior management advised of potential and current roadblocks • Create project team and have frequent status meetings • Issue frequent status reports with detailed action items •	