

RCT-PXP-018

Revision 1

Project Execution Plan for Remote-Handled Lifting and Ancillary Equipment

EFFECTIVE DATE: 09/28/2006



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APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	07/03/2006	Initial issue.
1	09/28/2006	Additional equipment fabrication and delivery.

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1.0 PROJECT OVERVIEW

This Project Execution Plan (PXP), Revision 1, describes the scope, schedule, and budget for completing the procurement, fabrication, test-out, and delivery of additional remote-handled (RH) lifting and ancillary equipment. This plan has been prepared under the guidelines of Washington Group International's (WGI) Project Execution Management Program, in accordance with MP1.42 Washington TRU Solutions (WTS) Project Execution Management Program and WP15-GM.01 WTS Project Execution Plans. The revised plan documents the continuing work scope, schedule, and budget for this project and delineates the processes to be used to provide sound project management oversight and control of procurement, fabrication, and delivery of the RH equipment. This plan utilizes a graded approach to address key issues associated with the project.

The scope of this PXP, Revision 1, is to identify methods, schedules, and costs for the equipment to be delivered for the RH Program. All resources, including all personnel committed and assigned to the project, are described and planned. References to existing WTS programs for Quality Assurance (QA), Configuration Management, and Issues Management/Corrective Action and Reporting are made to the maximum extent practical to minimize redundancy and unnecessary infrastructure.

The scope of work will be integrated and performed in concert with the work scope contained in RCT-PXP-020, *Project Execution Plan for Remote-Handled TRU Waste Mobile Loading Unit*. Work in Revision 1 of this PXP consists of the continued procurement, fabrication, testing, verification, and delivery of the following RH lifting and ancillary equipment:

1. Removable-Lid Canisters
2. RH Facility Grapples
3. 72B Cask Storage Racks
4. 72B Cask Lid Stands
5. 72B Cask Lifting Yokes
6. 72B Cask Impact Limiter Pallets
7. Removable-Lid Canister Lid-Latching Tool
8. Test Port Tool Assembly for Outer Cask (OC) and Inner Vessel (IV) Leak Tests
9. 72B Outer Cask Lid Lift Tool (Ultra-Light)
10. 72B Cask Inner Vessel Lid Lift Tool
11. RH Grapple Crane Hook Adapter (with Pintle Hook) and Hook Stand
12. 72B Cask Lifting Yoke Stand
13. RH MLU Crane Shackles and Rigging
14. MLU Tools and Supplies

The following sections describe the scope for each equipment item, including description of the container, standing, rack, or lifting device, number of procured items, and design references. The Statement of Work (SOW) and associated procurement documentation contains the detailed specifications and work scope for each item. DOE/WIPP 02-3283 (Draft), *RH Packaging Program Guidance*, provides additional description, equipment diagrams and drawing numbers, equipment requirements, and work instructions.

1.1 Removable-Lid Canisters

The removal-lid canister is a Department of Transportation (DOT) 7 Type A cylindrical container designed to confine and handle the payload of the 72B Cask from initial preparation to final disposal. All RH Transuranic (TRU) waste will be loaded directly into the waste canister or into waste containers (e.g. 30- or 55-gallon drums, metal cans, etc.) and overpacked into the RH canister. The canister uses a 26-in. outside diameter by ¼-in. thin-wall cylinder as the outer shell. The body, lid, and lift pintle are constructed of either carbon or stainless steel. Once the canister is loaded, the lid is pressed and locked in place to seal the canister. The overall length of the canister is 121 in. A carbon composite filter(s) is incorporated either in the pintle or lid to provide protection from particulate leakage during shipment or build-up of internal pressure.

An initial 5 units have been ordered from Engineered Productions Division for testing, evaluation, and possible use. An additional 45 units (with future option orders) have been ordered with Premier Technology.

1.2 RH Facility Grapples

The facility grapple is a special lift fixture that is designed to engage the pintle for lifting the RH waste canister. The grapple rated lift capacity is 21,000 lbs. The facility grapple has an axially-mounted actuator that will rotate a drive gear through a limited travel distance. The gear will drive three lifting lugs into or out of engagement under the circular pintle. The drive shaft has an auxiliary bevel gear which allows the grapple to be manually operated if the electrical actuator fails to operate.

Four facility grapples have been procured and fabricated. One additional unit will be ordered.

1.3 72B Cask Storage Racks

Racks are positioned to store 72B casks after the impact limiters are removed. The racks are designed to be used with extensions for more efficient space utilization. Saddles at the top support the main cask trunnions and hold casks in a vertical position. Guides below the saddles capture the lower trunnions as casks are lowered onto the rack. This secures the casks in a vertical position to prevent them from rotating. Racks are rated for 40,000 lbs, fully-loaded casks.

Six storage racks have been procured and fabricated. An additional unit is required for replacement at WIPP, but is unfunded at this time.

1.4 72B Cask Lid Stands

72B Cask lid stands are used to support and store the outer and inner lids after removal from the 72B Cask following unloading. The outer lid storage stand is used to support and store the shielded road cask outer lid after it has been removed from the road cask. The inner lid storage stand is similar to the outer lid stand, but is used for supporting the inner lid for inspection, minor maintenance operations, and protection of the inner lid seal surface. The outer lid weighs approximately 1,700 lbs. and the inner lid weighs about 1,400 lbs.

Two sets of both lid stands have been procured and fabricated. Another set will be ordered.

1.5 72B Cask Lifting Yoke

The cask lifting yoke is used to rotate and lift the RH 72B shielded road cask to a vertical position from the transport vehicle by engaging the handling trunnions of the road cask. The 72B cask, with its payload waste canister, is then moved from the transport vehicle and placed in the road cask transfer car. The cask lifting yoke is a lifting fixture rated for 45,000 lbs. lifting capacity.

Two RH 72B lifting yokes were initially procured and fabricated, but will require re-fabrication due to dimensional problems and welding nonconformances. Following corrective actions, two additional units will be ordered for a total of 4 units.

1.6 72B Cask Impact Limiter Pallets

Pallets are provided to store impact limiters. Pallets are smaller, lighter, and are more portable than storage racks and hold only one impact limiter.

Fourteen Impact Limiter Pallets have been procured and fabricated. Eight additional units will be ordered.

1.7 Removable-Lid Canister Assembly Tool

The Lid Latching and Silo are being designed under a subcontract to facilitate lifting the canister and removing or installing the canister lid using the same device. This subcontract is to design a simple tool with manual controls and no process control interlocks. The silo will be used to adapt a 72B Cask Storage Rack to hold a removable-lid canister while it is being loaded and the lid removed or installed.

The design of the lid-latching tool and Silo has been completed. Fabrication under a separate purchase order will be issued to produce one manual lid latching and silo assembly for fabrication.

To satisfy safety and authorization basis controls at the INL, a separate subcontract is planned to add automated controls and interlocks to meet INL requirements. The automated controls and modifications will be designed based on experience with the manually-controlled lid latching tool.

1.8 Test Port Tool Assembly for Outer Cask (OC) and Inner Vessel (IV) Leak Tests

The OC and IV Test Port Tool provides for:

- Installing and removing port closure bolts;
- Venting OC and IV cavities
- Checking the lid and port closure bolt containment O-rings for leakage.

The tool is equipped with a quick-disconnect for compressed air to operate the tool.

Nine units have been procured and fabricated. An additional 5 units will be ordered.

1.9 72B Outer Cask Lid Lift Tool (Ultra-Light)

The Ultra-light OC Lid Lift Tool is a light-weight tool that attaches to a crane with appropriate rigging for engaging the OC lid for placing or removing the OC lid. The lift tool is rated to lift 4,000 lbs and weighs approximately 60 lbs.

Four units have been procured and fabricated. An additional unit will be ordered.

1.10 72B Cask Inner Vessel Lid Lift Tool

The IV Lid Lift Tool is used for removing and replacing the IV lid in the same manner that the OC lid lift tool attaches to the outer lid. The IV lid fixture is rated to lift 4,000 lbs and weighs approximately 60 lbs.

Two units have been ordered. However, this initial procurement will be cancelled and closed out since the tool can be replaced with the Ultra-Lite lid lift tools identified in Section 1.9 above.

1.11 RH Grapple Crane Hook Adapter (with Pintle Hook) and Hook Stand

The design of the RH Grapple Flange Crane Hook Adaptor (with Pintle Hook) and Hook Stand has been completed to assist the operator in multiple lifting operations. A Hook Stand, included in the assembly, prevents having to place the pintle hook on the ground during field operations.

One unit will be ordered.

1.12 72B Cask Lifting Yoke Stand

The OC Lifting Yoke Cart/Stand provides an engineered work platform and stand for the lifting yoke and associated tools. Design of the unit has been completed.

One unit will be ordered.

1.13 RH MLU Crane Shackles and Rigging

Various-size shackles, slings, and associated rigging are required to be attached to a crane to properly attach to the RH lifting and ancillary equipment. All equipment shall be load tested and certified for specified weights.

Two sets of rigging equipment will be ordered.

1.14 MLU Tools and Supplies

Numerous tools and supplies are required to outfit the two Mobile Loading Units for work at DOE host sites in the loading and preparation of RH waste for shipment to WIPP. A detailed list of power and hand tools, leak test equipment, consumables, and miscellaneous operations equipment has been prepared for order and delivery to the MLU team.

2.0 CONTRACT OVERVIEW

WTS is the Management and Operations (M&O) contractor for the Waste Isolation Pilot Plant (WIPP) near Carlsbad, NM. WTS performs these M&O services for the Department of Energy (DOE) under contract number DE-AC-29-01AL66444.

3.0 PROJECT ORGANIZATION

The Carlsbad Field Office (CBFO) Work Breakdown Structure (WBS) is shown in Figure 1. The scope of work for the RH Lifting and Ancillary Equipment project is contained within TRU Waste 1.0 (Level 1) and 1.1 Waste Services (Level 2) WBS elements.

The RH Waste Program Organization Chart is shown in Figure 2. The organization is comprised of matrixed managers and personnel from WTS, LANL, and various subcontractors to perform a variety of functions in preparation for readiness to certify, transport, and receive RH waste at WIPP. Most functions required under this PXP are shown under Engineering/Technical Support.



Carlsbad Field Office Work Breakdown Structure
August 10, 2005

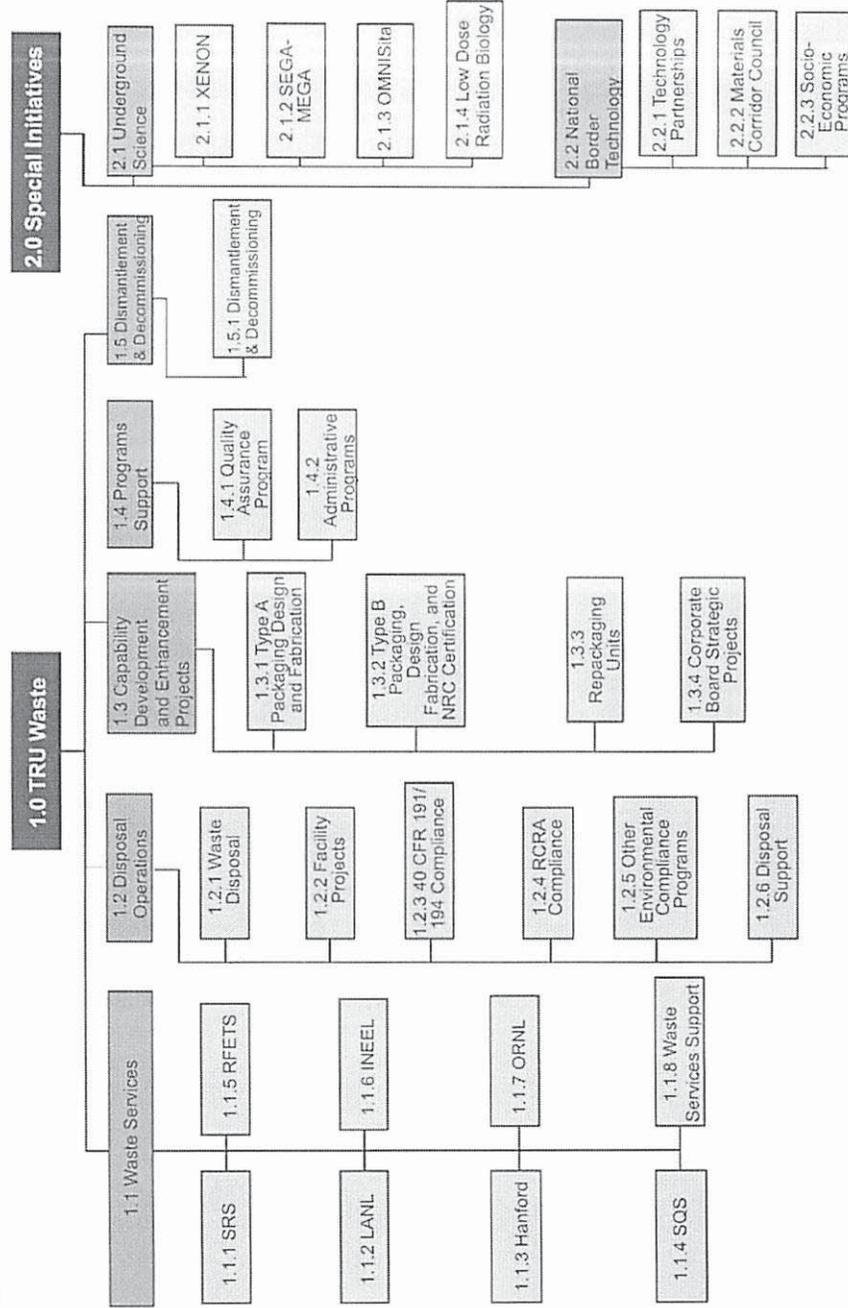


Figure 1. Carlsbad Field Office (CBFO) Work Breakdown Structure (WBS)

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Table 1 provides a responsibility matrix for the RH Lifting and Ancillary Equipment Project. The matrix includes the project manager, lead engineer, cognizant engineer, subcontract technical representative (STR), procurement specialist, lead quality engineer, and subcontractor project manager.

Equipment	Project Manager	Lead Engineer	Cognizant Engineer	Subcontract Technical Representative	Procurement Specialist	Lead Quality Engineer	Subcontractor Project Manager
Removable-Lid Canisters (EPD)							
Removable-Lid Canisters (Premier)							
RH Facility Grapples							
72B Cask Storage Racks							
72B Cask Lid Stands							
72B Cask Lifting Yoke							
72B Cask Impact Limiter Pallets							
Removable-Lid Canister Lid-Latching Tool							To be determined
Removable-Lid Canister Unshielded Silo							To be determined
Test Port Tool Assembly for OC & IV Leak Tests							
RH 72B OC Lid Lift Tool (Ultra-Light)							
RH 72B IV Lid Lift Tool							
RH Grapple Crane Hook Adapter (w/ Pintle Hook) and Hook Stand							To be Determined
RH 72B Cask Lifting Yoke Stand					To be determined		To be determined
RH MLU Crane Shackles and Rigging		N/A	N/A		To be determined		To be determined
MLU Tools and Supplies		N/A	N/A		To be determined		To be determined

Table 1. RH Lifting and Ancillary Equipment Responsibility Matrix

4.0 PROJECT ADMINISTRATION

In order to accomplish the planned scope of work successfully, External Programs has established a matrixed, program management organization to provide technical and administrative oversight of the equipment procurement, fabrication, and verification activities. Figure 2, Remote Handled Waste Program Organization Chart, illustrates the matrixed approach for executing the scope of work described in this PXP. A complete register of anticipated Approval Requests/Verification Requests (AR/VR) will be important to properly perform the fabrication and verification activities within approved budgets and in accordance with project needs.

The Project Manager will be responsible for the following functions:

- Serve as lead interface with CBFO and the RH equipment procurements;
- Comply to the scope of work and project objectives for the procurements, including all deliverables to be accomplished;
- Ensure project resources and planning;
- Coordinate and maintain subcontract documentation and records;
- Prepare, maintain, and update project budgets and schedules;
- Formally maintain configuration control of project scope, schedule, and budget;
- Coordinate and resolve issues for the project.

5.0 PROJECT BUDGET AND SCHEDULE

5.1 Budget

Table 2, RH Lifting and Ancillary Equipment Cost Estimate, provides the original equipment item, purchase order number, and estimated costs for performing the detailed design, fabrication, and verification activities for all deliverables described in Revision 0 of this PXP. Funding in FY-07 has been provided by the Idaho National Laboratory (INL) and/or CBFO to procure the additional equipment items show in Section 5.2 through modifications of existing purchase orders and similar unit costs. New purchase orders are also being pursued, although cost estimates and purchase orders have not yet been finalized or issued. Fabrication of equipment, designed under Revision 0, will be completed under Revision 1 of this PXP.

Equipment	Purchase Order	Cost Estimate	Subcontract Type
Removable-Lid Canisters (EPD)	405510	██████████	Affiliate Agreement (EPD)
Removable-Lid Canisters (Premier)	405536	██████████	Firm Fixed Unit Price (Premier)
RH Facility Grapples	405295	██████████	Firm Fixed Unit Price
72B Cask Storage Racks	405280	██████████	Firm Fixed Unit Price
72B Cask Lid Stands	405374	██████████	Firm Fixed Unit Price
72B Cask Lifting Yoke	405338	██████████	Firm Fixed Unit Price
72B Cask Impact Limiter Pallets	405375	██████████	Firm Fixed Unit Price
Removable-Lid Canister Lid-Latching Tool			To be determined
Removable-Lid Canister Unshielded Silo			To be determined
Test Port Tool Assembly for OC & IV Leak Tests	405339	██████████	Firm Fixed Unit Price
RH 72B OC Lid Lift Tool (Ultra-Light)	405373	██████████	Firm Fixed Unit Price
RH 72B IV Lid Lift Tool	To Be Determined	To Be Determined	To Be Determined
RH Grapple Crane Hook Adapter (w/ Pintle Hook) and Hook Stand	To Be Determined	To Be Determined	To Be Determined
RH 72B Cask Lifting Yoke Stand	To Be Determined	To Be Determined	To Be Determined
RH MLU Crane Shackles and Rigging	To Be Determined	To Be Determined	To Be Determined
MLU Tools and Supplies	To Be Determined	To Be Determined	To Be Determined

Table 2. RH Lifting and Ancillary Equipment Cost Estimate

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5.2 Schedule

Table 3, RH Lifting and Ancillary Equipment Plan, Revision 1, depicts the fabrication status, as of September 30, 2006, for each RH equipment item. The equipment items are targeted for delivery to the INL and the LANL-Carlsbad Mobile Loading Unit (MLU) Team. The equipment to be fabricated and/or procured under this PXP are scheduled to be completed by January 31, 2007.

Equipment	Purchase Order	Number of Units	Site Location	Status (as of 9-30-06)
Removable-Lid Canisters (EPD)	405510	5	To Be Determined	Schedule to be developed; fabrication on hold
Removable-Lid Canisters (Premier)	405536	45	30 (INL); 15 MLU	1 st Article fabrication complete
RH Facility Grapples	405295	5	2(INL); 3(MLU)	4 units complete and delivered; 1 additional unit - To be Ordered
72B Cask Storage Racks	405280	6	4 (INL); 2 (MLU)	Complete and delivered; WIPP Replacement – TBD (unfunded)
72B Cask Lid Stands	405374	3 Sets	1 (INL); 2 (MLU)	Sets 1 & 2 Complete and delivered; Set 3 – To be Ordered
72B Cask Lifting Yoke	405337 & 406338	4	2 (INL); 2(MLU)	Re-fabrication required for Units 1 & 2; Two additional units - To be Ordered
72B Cask Impact Limiter Pallets	405375	22	14 (INL); 8 (MLU)	14 units complete and delivered; 8 additional units – To be Ordered
Removable-Lid Canister Lid-Latching Tool	TBD	1	1 (INL)	Design Complete; 2 Units – To be Ordered
Removable-Lid Canister Unshielded Silo	TBD	1	1 (INL)	Design Complete; 1 Unit – To be Ordered
Test Port Tool Assembly for OC & IV Leak Tests	405345	14	5 (INL); 9(MLU)	9 units complete and delivered; 5 units – To be Ordered
RH 72B OC Lid Lift Tool (Ultra-Light)	405339	5	2 (INL); 3 (MLU)	4 units complete and delivered; 1 unit – To be Ordered
RH 72B IV Lid Lift Tool	405373	2	1 (INL); 1 (MLU)	To be cancelled; replaced by Ultra-Light Tools
RH Grapple Crane Hook Adapter (w/ Pintle Hook) and Hook Stand	TBD	1	1 (INL)	Design Complete; 1 unit – To be Ordered
RH 72B Cask Lifting Yoke Stand	406617	1	1 (INL)	Design Complete; 1 unit – To be fabricated & delivered
RH MLU Crane Shackles and Rigging	406750 , 407016 & 406746	3 Sets	1 (INL); 2 (MLU)	3 Sets – To be Delivered
MLU Tools and Supplies	N/A	2 MLU Kits	2 MLU Kits	To be Delivered

Table 3. RH Lifting and Ancillary Equipment Baseline Schedule

6.0 PROJECT RESOURCES

Primary personnel contacts are identified in Figure 2, Remote Handled Waste Program Organization Chart, and Table 1, RH Lifting and Ancillary Equipment Responsibility Matrix. Project resources are provided by WTS RCT, Site Operations, Procurement, and QA organizations and include the project manager, lead engineer, cognizant engineer, subcontract technical representative, procurement specialist, lead quality engineer, and subcontractor project manager.

7.0 UNIQUE PROJECT CONSIDERATIONS

External Programs will accomplish its mission following accepted project management principles, including the development and execution of this PXP. Integration activities include coordination with the project team and CBFO. Internal project integration throughout WTS is also required. This coordination and integration will specifically include WTS QA and Procurement organizations during all phases of the project.

This PXP will be issued and controlled during the entire equipment procurement effort. This plan describes the plans and objectives for the project and establishes a formal structure for conducting work processes for the project. This formal structure will include the following:

- Establishment of baseline project schedules;
- Establishment of baseline cost estimates, personnel resources, and budgets;
- Weekly progress tracking and monthly variance reporting;
- Maintaining project action tracking and completion;
- Develop concise, standardized informational briefings for WTS and CBFO management;
- Develop an agenda and establish weekly Project Reviews.

8.0 ENGINEERING AND DESIGN

The Project Manager will coordinate and utilize WIPP site resources and/or subcontracted services for all engineering functions, as required. All deliverables will be reviewed by WTS.

This PXP provides project planning for lifting and ancillary equipment for RH wastes to be packaged and loaded at the Idaho National Laboratory (INL) and other DOE sites using the Mobile Loading Unit (MLU) equipment operated by LANL-Carlsbad. Fabricated equipment and tools will be provided to both INL and the MLU team.

A second PXP, *RCT-PXP-020, Project Execution Plan for Remote-Handled TRU Waste Mobile Loading Unit*, will plan the fabrication and purchase of additional equipment, tools, and supplies to outfit two (2) complete MLU "kits". Some equipment purchased through implementation of RCT-PXP-018 will be used to outfit the MLU kits. Project Managers will work closely together to ensure effective communications and integration.

The engineering processes include design of RH equipment and development of associated design documentation such as drawings and specifications, procurement requisitions and change notices, installation instructions, and acceptance testing, as required. The project will utilize a Cognizant Engineer (CE), or designee, to maintain configuration control and the design basis documents; and provide a technical focal point for the RH equipment associated with this plan.

As such, the CE "function" provides the project with individuals having the requisite knowledge of the equipment and lead responsibility for the configuration management of the design. CEs (or designee) are the responsible authority of the design and are the primary authority for approving changes to the design and are the primary authority for approving changes to the design details for the designated RH equipment. CEs (or designee) are responsible for the technical management of the assigned equipment/systems, including:

- Understanding of the design basis and technical authority for design and design changes
- Procurement actions, as required
- Operating/installation instructions
- Specification of acceptance parameters to validate design

9.0 PROCUREMENT AND MATERIALS MANAGEMENT

The WTS purchasing system is certified by the DOE as a Certified Purchasing System. The DOE performs system reviews periodically to ensure compliance with the Federal and DOE Acquisition Regulations.

WTS operates in accordance with DOE-approved procedures implementing all aspects of procurement from sole-source to source selection and vendor qualification.

Purchasing is performed in accordance with approved procedures. WTS maintains procurement staff that is Certified Purchasing Managers through the Institute of Supply Management.

10.0 PROJECT CONTROLS

The project control system seeks to be responsive to internal management requirements and provide WIPP participants with 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.

The CBFO Office of Business is responsible for interpreting the requirements of this document as they apply to a particular program situation and for maintaining and updating this document, including coordinating changes with other project participants when appropriate.

The CBFO Baseline is actually comprised of three baselines that integrate the schedule, cost, and performance measures for the site. These baselines are as follows:

- **Schedule Baseline:** The Integrated Project Schedule is the primary controlled schedule from which schedule performance is measured. It is used to status and update summary level schedules. Only changes authorized through the Baseline Change Control process are incorporated into the schedule baseline.
- **Cost Baseline:** Contract funding levels, contained in the fiscal year program guidance letter from CBFO plus approved changes, are allocated to Cost Account Plans (CAPs), developed at Level 5 of the WBS, to form the cost baseline.
- **Performance Measurement Baseline:** The Performance Measurement Baseline (PMB) is the time phased budget plan against which cost and schedule performance are measured. The resource loaded schedule activities contained in the Complex Wide Integration Tool (CWIT) form the basis of the PMB.

This PXP addresses the detailed project scope, schedule, and budget for the project. Formal processes are established and documented in this PXP for communications, configuration control, and issues management. The PXP will be controlled 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

WTS' QA Department performs and documents assessments of Subcontractor Quality Programs. These assessments determine the degree of adequacy in addressing both the Basic and Supplemental requirements of ASME/NQA-1-1989. Corrective actions and/or modifications to the QA program may be required before proceeding.

WTS QA also performs periodic surveillances, inspections, and oversight functions, at a frequency in accordance with approved procedures and Statements of Work. These surveillance and oversight functions will serve two

purposes: (1) to verify adequate implementation of the Subcontractor Quality Program; and, (2) oversight of the design, fabrication, and verification activities.

All work shall be performed under the WTS or WTS approved Subcontractor QA Program. The Subcontractor shall, upon WTS request, submit quality program documentation that includes, but is not limited to, the Subcontractor's QA Manual, QA procedures, internal quality audit reports, etc. The Subcontractor shall grant WTS, or its designee, rights of access to Subcontractor's facilities and records for inspection or audit.

QA requirements, including the QA Program, Engineering Design Program, Inspection Requirements, Personnel Qualification, Quality Clauses, and Documentation Requirements form the primary basis for submittals and deliverables. Quality Clauses applicable to the test program are delineated in the SOW. The subcontractor shall be responsible for their fabrication inspections and verification tests to ensure the finished products meet the requirements of this statement of work. Results shall be recorded and traceable to the manufacturing travelers used.

Test and inspection activities are documented and controlled by instructions, procedures, checklists and travelers. Applicable Nondestructive Examination (NDE) procedures shall be submitted to the WTS in accordance with the AR/VR submittal register. Each person who verifies conformance of work activities for purposes of acceptance shall be qualified to perform the assigned task.

The subcontractor shall plan, implement, and maintain a QA program as specified in the SOW. In addition, the QA specifications identified with this SOW apply to the subcontractor's QA program. This program is subject to a pre-contract award survey and subsequent QA assessments by WTS applicable to the procurements described in this SOW.

The subcontractor shall require, in writing, lower-tier subcontractors to comply with all applicable quality program/system requirements. The quality system and control of "Special Processes" of the subcontractor and lower-tier subcontractors may be subject to QA assessment by WTS to the extent practicable.

The subcontractor shall tender for acceptance only those item(s), supplies, or services that have been inspected and tested in accordance with its quality program/system and have been found to conform to contract requirements. When post-installation testing is identified as a method of acceptance, then post-installation test requirements and acceptance documentation shall be identified and agreed upon by the purchaser and supplier.

12.0 CONSTRUCTION

There are no significant facility construction activities planned for the procurements described in this PXP.

13.0 COMMISSIONING AND START-UP

There are no commissioning and start-up activities associated with this PXP.

14.0 ENVIRONMENT, SAFETY AND HEALTH

Achieving successful project completion demands implementation and integration of safe work performance, environmental stewardship, and quality into the management and performance of project work. The primary objective is to deliver the project work scope with no safety incidences or injuries. The successful integration of these compliance elements is vital for successful project completion.

To help ensure project performance and compliance, training of personnel in their specific project requirements and responsibilities is required in accordance with the following safety principles:

14.1 Integrated Safety Management System

The DOE Integrated Safety Management System (ISMS) is an integrated approach to ensure that work is planned, analyzed, reviewed, approved, and executed in a safe manner and that safety is continuously improved through worker feedback. Five core functions of ISMS form the basis for working safety: 1) define the scope of work, 2) identify and analyze the hazards, 3) identify and implement controls, 4) do the work, and 5) provide feedback throughout the process.

14.2 Environmental Compliance

The Project will comply with governing regulations, agreements, and orders under the contract applicable to the test facility. At a minimum, project activities will be evaluated for consistency with Resource Conservation and Recovery Act (RCRA) and compliance with applicable water, air, waste, and natural resources requirements.

15.0 RISK MANAGEMENT PLAN

WTS managers involved in project execution participate in the identification and assessment of program risks. They review program documents, evaluate lessons learned, and use brainstorming and their own experience to identify risks.

Project risks are identified in the following areas:

- Cost and Schedule
- Technical
- Programmatic (Obtaining and utilizing resources outside the control of the program manager)
- Support
- Safety and QA
- Regulatory/Permitting
- Site specific (Including alternative site locations)

Once risks are identified, WTS categorizes the identified risks by probability and severity (consequences) of each event.

After risks have been identified and categorized, a risk management approach and mitigation actions are developed for each High and Medium risk. For Low risk elements not judged to require documented mitigation actions, WTS Managers assure that they are controlled through the normal management functions and work processes. All risks and mitigation actions are identified in the CBFO Risk Management Plan, which is updated annually.

In order to determine the effectiveness of the Risk Management Plan, the areas of Medium and High risks are monitored and statused during monthly program meetings with CBFO. In addition, periodic reassessments of programs are performed to determine if new areas of risk need to be identified and assessed.

There have been several risks identified for the RH lifting and ancillary equipment that are shown below. Both engineering and fabrication challenges exist that require actions to effectively manage and mitigate these risks. The equipment items, risks, and mitigative measures are shown below.

ITEM	EQUIPMENT	RISKS	MITIGATIVE MEASURES
1	RH - Removable Lid Canisters (RLCs)	RLC Body seal area diameter requirements are difficult to achieve during manufacture	The supplier will propose improvements to their manufacturing processes before manufacturing additional units and incorporate lessons-learned during manufacture.
2	RLC Assembly Tooling	Risks identified for RLC Lid closure may affect the ability of the RLC Assembly Tools to close RLCs if interface exists between the lid and body.	The RLC Silo will have a device that can be used in off-normal events to grip the RLC to allow manual operation of the lid.
3	RLC Assembly Tooling	RH-MLU operators want their RLC Assembly Tool to have manual controls to the greatest extent possible for reliability. NL operators prefer increased automation to improve safety and operation.	RLC Assembly Tools will first be designed and built with manual controls. These tools will be tested and operated first to help INL and WTS make informed decisions on what additional controls and features are needed and how to best implement them. Based on experience, features and components identified for INL needs, additional design features will be evaluated and incorporated as options under separate scope.

16.0 PROJECT CLOSEOUT

Most of the RH lifting and ancillary equipment are scheduled to be primarily delivered during FY-2006. However, some of the items do not have final committed schedules at this time and may extend into FY-2007. Project closeout and documentation activities will also carryover in FY-2007.

17.0 PROJECT PROCEDURES

The supplier will prepare and implement nondestructive test and quality verification procedures.

The supplier shall also deliver all Supplier Data Packages (SDP) as required by the Purchase Order. The content and form of the package are specified on the order either as a QA clause or in the procurement specification. The size of the data package may range from a few pages consisting of a certification of conformation and nonconformance reports to a large volume of documentation including such things as inspection reports, test reports (including NDE reports), manufacturing and inspection travelers, checklists, performance data, installation procedures, operating procedures, maintenance procedures, as-built drawings, and specifications. Such documentation shall be suitable for scanning with electronic media.

WTS requires the submittal of SDPs for a number of reasons other than the need for QA documentation of the order. The package is retained and used to (1) revise drawings and specifications, (2) provide a history file in case of an unexpected failure, and (3) provide as-built data for future reference as required by our customers, which may be verified by audit. It is essential that SDPs be complete, accurate, legible, and submitted in a timely manner as required by the SOW. The following guidelines are applicable to the data package:

Completeness

Advanced planning and organization are key elements in achieving a complete data package. It is suggested that a list of order requirements for submittals be made in the form of an index which references paragraph numbers in the order. The index should be used to assemble and check the data package. A copy of the index should be submitted with the data package. An independent review should be made to ensure that forms have been properly completed; drawing numbers, part numbers, and serial numbers have been included; test reports contain actual results and are signed; inspection data identifies each characteristic to the drawing; and applicable limits are identified.

Accuracy

Accuracy depends upon the discipline of the personnel taking and recording the data. WTS prefers a copy of the raw data or a computer printout to a neatly transcribed tabulation of data. Errors are not to be erased or obliterated but shall be corrected by lining out the incorrect data and entering the correct data so that the corrected data is identifiable. The use of correction fluid is not permitted. Each corrected entry shall be signed and dated by the corrector. Inspection and test data that must meet a tolerance or limit should have an independent review to ensure compliance. Any nonconformance must be identified, properly documented, and dispositioned.

Legibility

Supplier data submitted to WTS must be legible and in compliance with ANSI Y-14. Most Supplier data are reviewed by WTS personnel upon receipt; however, in some cases, data may not be reviewed until after they have been electronically scanned; therefore, the original data must be clear enough to be copied and microfilmed. Data must be reviewed to ensure that the submitted copies are legible and reproducible. Data that are of poor quality, illegible, or not reproducible may be rejected and rework may be required by the Supplier at no added cost to WTS.

Timeliness

WTS requires that the SDP accompany each deliverable. Supplier schedule should allow sufficient time to generate the required data, assemble the data into a package, and obtain the required reviews. A final review should be performed by responsible Supplier management. Where WTS source inspection is required, time should be allowed for WTS QA representative review. WTS QA representatives have instructions to withhold release for shipment until the SDP is in order.

The Supplier shall maintain quality assurance records for up to one year following subcontract closure. Disposition of subject records shall be performed at any date thereafter, at the Supplier's discretion.