

RCT-PXP-001
Revision 0

Project Execution
Plan for the
Box Autoclave Demonstration
Test Program

Approved by:



WTS Manager
External Programs

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RECORD OF REVISION

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2.0 CONTRACT OVERVIEW

Washington TRU Solutions, LLC (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. The applied research and development provision of this contract states that "The Contractor may address issues associated with orphan wastes and prohibited items at a characterization site with a goal of treating up to 100 drums per week."

WTS has chosen to address the issues of orphan waste and prohibited items called out in its contract by procuring transuranic (TRU) treatment services for a major DOE site over a five-year time frame. A Box Autoclave Demonstration Test Program is being initiated to gather process information and address issues associated with large wastes containing prohibited items. The demonstration tests will confirm the use of the patented [REDACTED] on large box wastes. Specifically, the services to be provided include design, fabrication, and installation of a large box test autoclave, test planning and development, demonstration testing, and preparation of the test report. Project management, engineering, and procurement functions will be important elements of the demonstration tests.

WTS conducted a technology evaluation to determine what technologies would remove prohibited items and eliminate the gas generation problems associated with high-activity waste. The evaluation criteria for selection of a technology made use of the past evaluation criteria used by the Secretary of Energy's Advisory Board's Panel on Emerging Technological Alternatives to Incineration (the Panel). Added to the Panel's evaluation criteria were the project-specific criteria for a non-incineration thermal treatment technology appropriate for the treatment of the TRU waste streams. The results of the technology evaluation showed that the [REDACTED] is the only technology that met all specific requirements.



Carlsbad Field Office Work Breakdown Structure

August 10, 2005

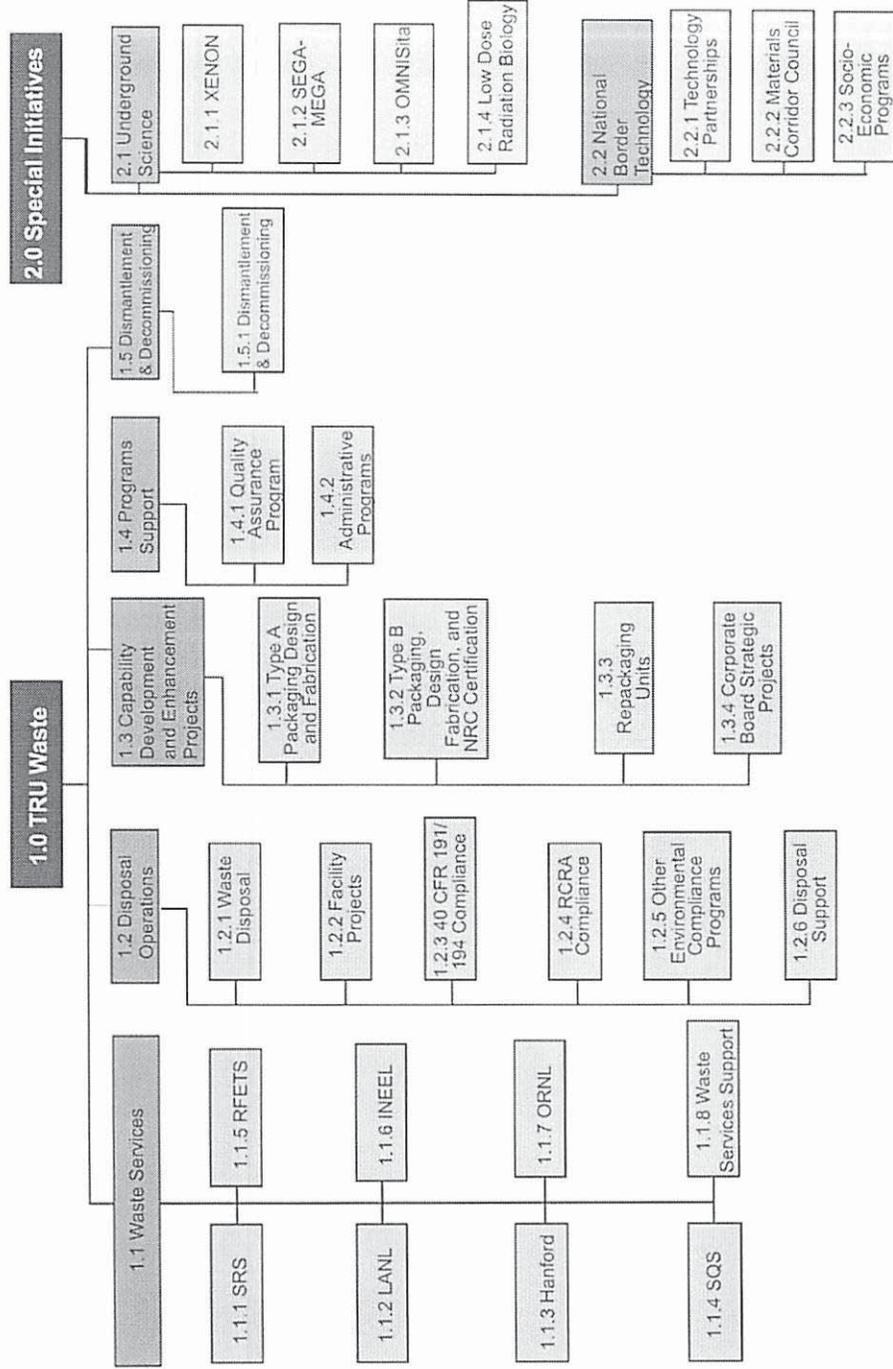


Figure 1. Carlsbad Field Office (CBFO) Work Breakdown Structure (WBS)

3.0 PROJECT ORGANIZATION

The Carlsbad Field Office (CBFO) Work Breakdown Structure (WBS) is shown in Figure 1. The scope of work for the box autoclave demonstration tests is contained within TRU Waste 1.0 (Level 1), 1.1 Waste Services (Level 2), and SRS 1.1.1 (Level 3) WBS elements, as shown below.

Figure 2 provides a preliminary organization chart for the Demonstration Test Project. The entire test project organization will be identified and established following subcontract award. The organization is currently comprised of a subcontract Project Manager and Chief Engineer. Upon subcontract award, [REDACTED] will identify the remaining key personnel: Engineering Manager, QA Manager, Environmental, Safety, and Health (ES&H) Manager, and the Test Manager. Other program personnel will be selected from Washington Group International's qualified staff at the Denver Operations Center. Subcontracted services for equipment design and fabrication, test operations, and engineering support are also planned. External Programs is comprised of one WTS project manager assigned to provide effective oversight on the project. Quality Assurance personnel are independently matrixed and assigned to the project from WTS.

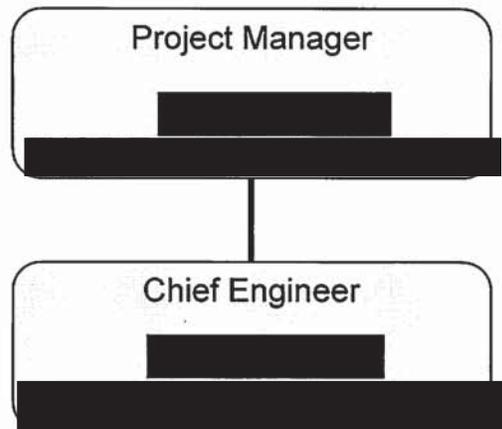


Figure 2. Box Autoclave Demonstration Test Project Organization



5.0 PROJECT BUDGET AND SCHEDULE

5.1 Budget

Table 1, Box Autoclave Demonstration Test Program FY06 Cost Estimate, provides the estimated costs for performing the detailed planning, design, and document development for all activities planned in FY-2006. Baseline funding of [REDACTED] has been approved by CBFO for FY-2006; DOE budget guidance for FY-2007 includes an additional [REDACTED] to conduct and complete the test program.

The required total annual funding for the Box Autoclave Demonstration Test Project is included in the Activity Based Cost (ABC) Sheets submitted in April 2006 to CBFO.

Table 1. Box Autoclave Demonstration Test Program FY-2006 Cost Estimate

Activity	Subcontracts	Labor Hours	Total Cost
Project Management			\$
Design and Engineering			\$
Box Autoclave Design	\$		\$
Test Program Plan			\$
Procurement Packages			\$
Subcontract Subtotal	\$		\$
Subcontract Travel			\$
General and Administrative			\$
Insurance			\$
Subcontract Total			\$
WTS Travel			\$
WTS Project Management			\$
WTS Quality Assurance and Oversight			\$
WTS Subtotal			\$
Total FY-06 Total	\$		\$

5.2 Schedule

Figure 3, Box Autoclave Test Program Schedule, depicts the major test program phases and activities planned and budgeted for FY-2006 and FY-2007.

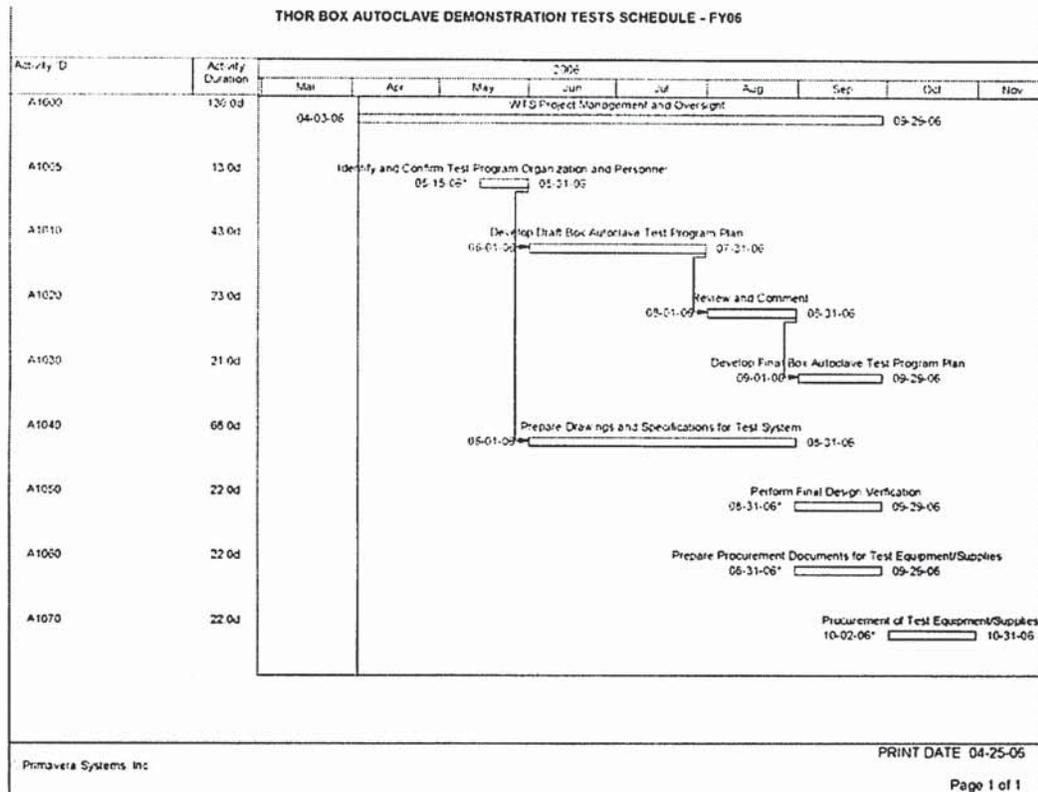


Figure 3. Box Autoclave Test Program Schedule

6.0 PROJECT RESOURCES

All test program personnel will be identified, including background, experience, and education as an initial deliverable under the subcontract in FY-2006. Roles and responsibilities during the entire testing project will be delineated. The project manager, engineering support personnel, QA officer, Procurement lead, and environmental, safety, and health (ES&H) professional will be identified and shown in the organizational chart.

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 Quality Assurance and Procurement organizations during all phases of the project.

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

- Establishment of baseline project schedules for the test program;
- Establishment of baseline cost estimates, personnel resources, and budgets;
- Monthly progress tracking and variance reporting on the test program;
- Maintaining project action tracking and completion;

8.0 ENGINEERING AND DESIGN

External Programs will utilize WIPP site resources and/or subcontracted services for all engineering functions, as required. WTS Quality Assurance will provide project oversight and perform periodic assessments throughout the project duration. Test program deliverables will be reviewed by WTS. The Detailed Test Plan will be subject to DOE CBFO and DOE-SR approval.

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.

The subcontract to perform the Box Autoclave Demonstration Test Program will be issued as a sole-source procurement due to the specific, proprietary system protected under U.S. patent.

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 FY-2006. Formal processes are established and documented in this PXP for communications, configuration control, and issues management. The PXP will be controlled by External Programs 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' Quality Assurance Department will be required to perform and document an assessment of the Subcontractor Quality Program. This assessment will 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 Quality Assurance will also perform periodic assessments and oversight functions, at a frequency to be determined by WTS. These assessment and oversight functions will serve two purposes: (1) to verify adequate implementation of the Subcontractor Quality Program; and, (2) oversight of the sampling and analytical processes for all test program data.

All work shall be performed under the Subcontractor's Quality Assurance Program. In the event that full compliance with any requirement is in question, WTS may opt to implement that requirement through increased involvement through "dedicated quality" under the auspices of the WTS Quality Assurance Program. The Subcontractor (if required) shall submit an uncontrolled copy of their company QA Manual/Plan for evaluation by WTS Quality Assurance. This will enable WTS Quality Assurance to do a preliminary assessment of the Subcontractor's QA system as it relates to the development and performance of the box autoclave demonstration test program while using the existing [REDACTED]

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 audit reports, etc. The Subcontractor shall grant WTS, or its designee, rights of access to Subcontractor's facilities and records for inspection or audit.

Quality Assurance requirements, including the Quality Assurance Program, Engineering Design Program, Inspection Requirements, Personnel Qualification, Quality Clauses, and Documentation Requirements shall be the primary basis for

submittals and deliverables. Quality Clauses applicable to the test program are delineated in the Statement of Work (SOW)

The subcontractor shall be responsible for their fabrication inspections and 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 shall be documented and controlled by instructions, procedures, checklists and travelers. Applicable 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.

12.0 CONSTRUCTION

There are no significant facility construction activities planned for the test program. The box autoclave will be purchased, fabricated, and installed with the existing test program equipment at the off-site test facility in Golden, Colorado.

13.0 COMMISSIONING AND START-UP

The Supplier shall plan, implement, and maintain a QA program as specified in the Statement of Work. In addition, the QA specifications identified with this SOW apply to the Supplier's QA program. This program is subject to a pre-contract award survey and subsequent QA audits by WTS applicable to the test program in this SOW.

Prior to WTS authorization to proceed on implementation of the demonstration test program, including purchase of the box autoclave system and other longer lead items, the detailed test program plan shall be approved by WTS, CBFO, and DOE-SR.

The Supplier shall require, in writing, subcontractors of all tiers to comply with all applicable quality program/system requirements. The quality system and control of "Special Processes" of the Supplier and subcontractors of all tiers shall be subject to audit by WTS to the extent practicable at all times and places.

The Supplier 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.

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
- 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.

16.0 PROJECT CLOSEOUT

The Box Autoclave Demonstration Test Program is scheduled to be closed out in late 2007. The FY-2007 Statement of Work will include all closeout activities, including equipment disassembly, demobilization, and disposal of process wastes.

17.0 PROJECT PROCEDURES

The supplier will prepare and implement facility test procedures to be identified in the Detailed Test Program Plan.

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 shipment. 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.