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Tank Waste Remediation System Fiscal Year 1997 Multi-Year Work Plan WBS 1.1

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EXECUTIVE SUMMARY

ES-1 BACKGROUND, MISSION, AND OBJECTIVES OF TANK WASTE REMEDIATION SYSTEM

The U.S. Department of Energy (DOE) established the Tank Waste Remediation System (TWRS) Program to manage and immobilize for disposal the waste contained in underground storage tanks at the Hanford Site. The TWRS program was established as a DOE major system acquisition under an approved Justification of Mission Need (JMN) dated January 19, 1993. The JMN states that the purpose of the TWRS Program is to:

- Resolve the tank waste safety issues
- Integrate the waste disposal mission with the ongoing waste management mission
- Assess the technical bases for tank waste management and disposal
- Determine the technology available and develop any needed technologies
- Establish a dedicated organization and provide the resources to meet the technical challenge.

The principal objectives of management of existing and future tank wastes is to cost-effectively minimize the environmental, safety, and health risks associated with stored wastes, with reduction of safety risks given the highest priority. The potentials must be minimized for release of tank wastes to the air and to the ground (and subsequently to the groundwater) and for exposure of the operating personnel to tank wastes.

ES-1.1 Background and Changes Resulting from the 1993 Justification for Mission Need

Hanford has the largest volume of tank wastes in the total DOE Complex. Approximately 350 million liters (92 million gallons) of waste were put into single-shell tanks (SSTs) from Hanford Site processes between 1944 and 1980; large volumes of waste have also been placed in double-shell tanks (DSTs), some of it since 1980. The SSTs currently hold about 210 million liters (55 million gallons) of waste, including low-level, hazardous, and/or plutonium-contaminated salt cake and sludge. Most of it is now solid, although there are pockets of liquids and semi-liquids as well. Sixty-six of the 149 SSTs may have leaked as much as 3.8 million liters (1 million gallons) or more of waste into the nearby soil. There are 28 newer DSTs holding about 90 million liters (24 million gallons) of liquid radioactive, hazardous waste; the first of these tanks was put into use in 1971. No DSTs have leaked to date. The Hanford tanks and tank-related systems are all located in the 200 Area plateau. Confinement, separations, and volume reduction operations have been conducted for many years at Hanford, but the JMN was the critical step for initiating the remediation effort; this marked the beginning of the program that this document describes.

an environmentally acceptable form that will not pose an unacceptable threat to present or future generations. Further, this transformation must be accomplished in a time of declining budgets and a myriad of regulatory requirements, while minimizing safety and health risks. The tank waste will be safely managed, retrieved, pretreated, immobilized, and disposed. The storage tanks will be decontaminated to acceptable levels and closed under approved closure plans. Surveillance and maintenance costs will be reduced to minimum levels necessary to safely manage the waste. Appropriate controls will be defined and implemented. To the extent practical, routine monitoring of the safety basis will be achieved without staff needing to enter the tank farms. Essential drawings will be as-built, and the technical safety basis will be established and maintained.

ES-1.3 Objectives

TWRS is one of several major efforts that make up the Project Hanford work scope to accomplish the overall Hanford mission as described in the MDD (DOE/RL-96-14 draft). The MDD identifies a specific goal for tank waste and documents a set of endpoints as well. The radioactive tank waste goal, as found in the MDD June 1996 draft, states that "Tank waste from both the SSTs and DSTs will be retrieved for immobilization. Waste will be separated into HLW and LLW fractions. LLW will be immobilized and disposed of onsite. HLW will be immobilized for disposal in a federal repository." Endpoints for this goal are also given in the MDD: after the waste has been retrieved from the tanks, the tank farms and the tanks will be closed, and cesium/strontium capsules declared waste will be sent to the HLW repository for disposal, with the immobilized HLW disposed in canisters. Table ES-1 presents the goals and objectives of the TWRS Mission.

ES-2.0 TWRS STRATEGY

The TWRS Program strategy integrates waste operations, safety issue resolution, waste retrieval, pretreatment, immobilization, waste disposal, and decontamination and decommissioning of facilities following processing. The strategy is described below in two parts, technical and program management. These parts in concert are to implement the intent of the Life Cycle Asset Management (LCAM) process as articulated in DOE Order 430.1, a directive that relies heavily on an effective system management and systems engineering program for TWRS. LCAM defines a point of view that encompasses all activities from concept and need through decommissioning and close-out.

TWRS projects are responsible for applying systems engineering within their work scope and for providing technical baseline information to support the site-wide systems engineering efforts. The functions, requirements, and physical systems (architecture) will be maintained in the Hanford Site Technical Baseline (HSTB), as contained in the RDD-100 database. The project planning will be consistent with the MDD and directed toward achieving the technical requirements contained in the HSTB.

Table ES-1. TWRS Mission Goals and Objectives

GOAL	OBJECTIVES
Operate and maintain facilities to provide continued safe and environmentally sound storage	Resolve tank system safety issues
	Upgrade facilities
	Reduce operating cost to minimum levels necessary to safely management the tank waste
Retrieve tank waste	Prepare tank for reuse or closure
	Remove 99% of waste from SSTs
	Close SSTs, DSTs, and designated MUSTs
Pretreat tank waste	Minimize impact on repository and Hanford land use
Immobilize and dispose of any remaining mixed or low-level waste (LLW)	Minimize safety and environmental risk
	Produce an immobilized low-activity waste form suitable for permanent disposal by shallow burial on the Hanford Site
	Minimize volume of LLW
Close the underground storage tanks	Minimize safety and environmental risk
Immobilize high-level and transuranic (TRU) constituents of waste	Minimize safety and environmental risk
	Minimize volume of high-level waste (HLW)
	Enable permanent disposal
Transfer excess facilities and equipment to the Environmental Restoration Mission Area	Minimize the number of active facilities
	Reduce operational liabilities
	Minimize generation of secondary waste and effluent to reduce environmental impact and cost

ES-2.1 *Management Strategy*

The success of the TWRS Program depends on developing and implementing a fully integrated plan and management approach. To accomplish this, TWRS will operate as a single strategic system under the LCAM and integrate operations, technology development, and project activities using the systems engineering approach. Program documentation will be developed to ensure that consistent controls and requirements are established. The TWRS Management System project is the focal point for the development and maintenance of the project control systems needed to accomplish the technical work.

TWRS will use the systems engineering approach to ensure work is performed in a manner and sequence that results in successful completion of the mission. The following are specific TWRS Program Management objectives:

- Fully implement the systems engineering approach for defining the technical bases for the TWRS Program. This approach is described in the *TWRS Systems Engineering Management Plan* (SEMP)(WHC-SD-WM-SEMP-002, Rev 0).

- Implement disciplined program management techniques to develop high-quality cost estimates and achievable schedules that are fully integrated with the technical bases as mandated in the LCAM directives.

- Implement a two-phased company-owned, company operated (COCO) approach for disposal that provides for a proof-of-concept phase followed by a full-scale production phase that satisfies the Tri-Party Agreement milestones and represents an innovative approach to contracting.

The MDD is the starting point for all cleanup endpoint targets that must be implemented through technical requirements contained in the HSTB. Where a specific technical requirement cannot be established, an enabling assumption will be made and identified. All enabling assumptions are traceable to a specific higher level requirement or technical issue for resolution and must be provided to the Site-Wide System Engineering Integration Group (SWSEIG) for inclusion in the HSTB. The innovative approach to contracting for immobilization and disposal reflects the DOE objective of managing Hanford as a business.

ES-2.2 Technical Strategy

The technical strategy for TWRS is implemented through the various technical projects that it comprises, and these projects have their genesis in the Hanford mission planning process. Hanford mission planning provides for the following:

- Tank waste from both SSTs and DSTs will be retrieved, immobilized, and disposed.

- Waste will be separated into HLW and LLW fractions.

- LLW fraction will be immobilized and disposed onsite.

- HLW will be immobilized for disposal in a federal repository.

- Residual waste remaining in the tanks after retrieval operations are completed, in-tank equipment, tank structures, ancillary equipment, and any adjacent contaminated soils will be disposed in accordance with approved closure plans.

An additional strategy item was added for encapsulated cesium and strontium based on an enabling assumption as follows:

- Cesium and strontium capsules will be overpacked for disposal in a federal repository.

The TWRS technical strategy is to integrate waste operations, characterization, safety issue resolution, retrieval, pretreatment, and disposal of the tank waste. The TWRS JMN describes it as:

- Mitigate (interim reduction of severity) or resolve (eliminate) safety issues.
- Manage the waste and operate the tank farms in a safe and environmentally sound manner.
- Restore or upgrade existing facilities and build new facilities to the extent required to support the Hanford cleanup mission.

ES-3.0 MANAGEMENT APPROACH

Hanford management for TWRS represents an integrated team of agencies, contractors, and stakeholders focused on the tank waste issues as a part of the broader Hanford remediation mission. The Management System is one of the eight major work elements for TWRS and is specifically defined as a project in the TWRS WBS. Effective and efficient management systems play an essential role in implementing the LCAM process and Hanford-specific direction found in DOE RLPD 430.1 and RLID 430.1. The overall management approach includes a clear definition of the interfaces between the various TWRS projects and the elements of LCAM. This section describes how each of the TWRS projects relates to the LCAM process. The technical project work is covered in Section ES-4.

The systems management concept being applied to manage the TWRS program responds to DNFSB Recommendation 92-4 and is consistent with the "Reinventing Government Initiative." The approach provides a framework for total program management, integrated and structured under an ongoing systems engineering process. Systems engineering will result in definition of a complete, integrated, requirements-driven configuration of the physical system that must be acquired, operated, and disposed of to accomplish the TWRS mission. A significant outcome of the systems management process as implemented for TWRS is the decision to privatize a significant portion of the work. Under the privatization effort DOE will only pay for finished product that meets specifications; Section 3.4 provides more information on this innovative approach.

This approach also features organization and management by project of all TWRS system work scope. The TWRS management system will incorporate the organizations, policies, and processes necessary for formulating, executing, and evaluating projects and will establish major decision points for the control of planning, resources, and risks. The approach supports the RL system for performance-based management and includes delegation from Headquarters (HQ) for TWRS to effect productivity improvements. Fundamental elements of this management approach are described below.

ES-3.1 Organization and Responsibilities

The TWRS organizational structure and associated roles and responsibilities reflect the following factors: (1) the Secretary of Energy's direction to provide for decision-making and accountability by field offices, as appropriate; (2) realignment of DOE and contractor roles in terms

of owner, design authority, and design agent; (3) lines of authority; (4) revised contract strategy; and (5) planned privatization strategies.

DOE owns the TWRS Program and is responsible for its successful completion. DOE has distributed responsibilities and authority for the management of the program among HQ, RL, and the RL TWRS Program Office (see Figure ES-1). The TWRS and participating contractors have been organized on a project basis, with clearly defined responsibilities, authorities, and accountabilities.

DOE oversight focuses on execution of direction by the Project Hanford Management Contractor (PHMC). The PHMC, with other prime contractors, provides technical direction to all TWRS participants, including architect-engineer/constructors, Pacific Northwest National Laboratory (PNNL) (the Hanford contractor for research and technology development), and other subcontractors. Contractual and technical direction to contractors selected for privatization of TWRS waste disposal functions will be provided by RL through the RL Contracting Officer (CO) or, if designated, by the Contracting Officer's Representative (COR). The COR is limited to giving directions that do not change the scope, price, terms, or conditions of a contract.

The principal roles and responsibilities of current TWRS organizations are discussed in the following sections. TWRS organizational structures, roles, and responsibilities are reflected in management policies and processes; they provide the basis for management staffing decisions, qualifications, and training.

ES-3.2 TWRS Program Participants

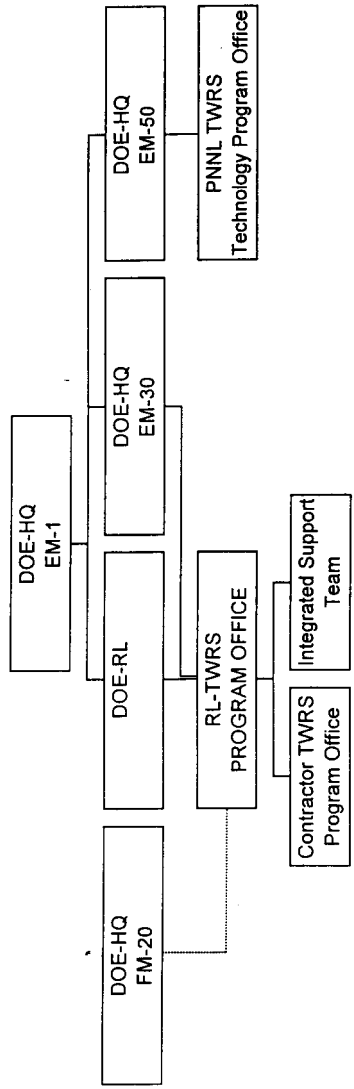
DOE-HQ

The Secretary of Energy is the Acquisition Executive (AE) for TWRS, with responsibility for approval of critical decisions and procurement key decisions that require major resource commitments. A TWRS critical decision already approved is the *Justification of Mission Need*, which ensures that the program complies with departmental strategic planning. The *Baseline Approval* decision will establish technical, schedule, and cost elements of the program baseline, for which an implementation plan will serve as contract between the AE and RL. The *Program Closure* decision will determine whether the criteria for successful program completion have been met.

Subsequent to AE approval of the TWRS baseline, the Assistant Secretary for Environmental Management (EM-1) will receive delegated authority for all program decisions that require AE approval. Consistent with DOE-HQ initiatives to increase field office accountability and empowerment, EM-1 may delegate specific authority to the RL manager for approving project key decisions and others. EM-1 will conduct semiannual review of overall program status, issues, and recommended actions; and, annually, will review program status with the Secretary of Energy. Each review is expected to result in a decision memorandum that authorizes continuation of the program and documents baseline changes, management decisions, and outstanding issues/actions.

The DOE-HQ Office of Waste Management (EM-30) is assigned responsibility for TWRS program management. The EM-30 role is to establish policy, allocate resources, provide programmatic direction, oversee execution, and evaluate performance. EM-30 is supported by the Office of Hanford Operations (EM-38) in performing these activities. The Office of Field Management (FM) supports EM-30 and RL by providing business management guidance,

Figure ES-1. TWRS Organization



coordinating resolution of DOE-wide field issues, and conducting independent cost assessments and budget validations of TWRS projects.

Primary responsibilities of DOE-HQ that are pertinent to the TWRS Program include the following:

- Establishing environmental management policy
- Developing TWRS strategy
- Advocating for the program
- Overseeing and evaluating program execution and performance
- Supporting RL in timely processing of issues and approvals through DOE-HQ and Congress
- Establishing program priorities and issuing program execution/budget guidance
- Providing resources to execute TWRS projects and achieve program objectives.

Richland Operations Office (RL)

The RL manager, who reports to EM-1 and is the top contracting officer for RL, has overall responsibility and authority for management of the TWRS Program, including authority for approval of those project key decisions formally delegated to RL by HQ. The RL manager is supported by members selected to the RL Site Management Board, who review and make recommendations for the decisions delegated from HQ. The process for RL key decisions provides for three-tier review and approval and includes independent assessments. Responsibility for everyday management of TWRS is delegated to the Assistant Manager (AM) for TWRS, who also acts as the top technical contracting representative.

The RL role is to support the project-oriented TWRS organization; establish Hanford Site strategies, priorities, and policies; and provide TWRS with the resources and infrastructure needed to achieve program objectives.

RL responsibilities particularly relevant to the TWRS program include the following:

- Establishing Hanford Site strategies and goals in conjunction with DOE-HQ
- Ensuring that site policies, procedures, and plans are established and suitable to support TWRS management in execution of required projects
- Supporting the integration of TWRS planning with other Hanford Site projects
- Managing and allocating site resources required for successful execution of TWRS projects

- Coordinating interfaces with regulatory agencies and other external organizations
- Providing functional and administrative support related to human resources, procurement, training, finance, legal/public affairs/media issues, environment, safety, and health
- Overseeing/evaluating TWRS environmental, safety, health and quality activities
- Supporting TWRS in timely resolution of cross-site issues and decision review/approval
- Making contract changes.

RL TWRS Program Office

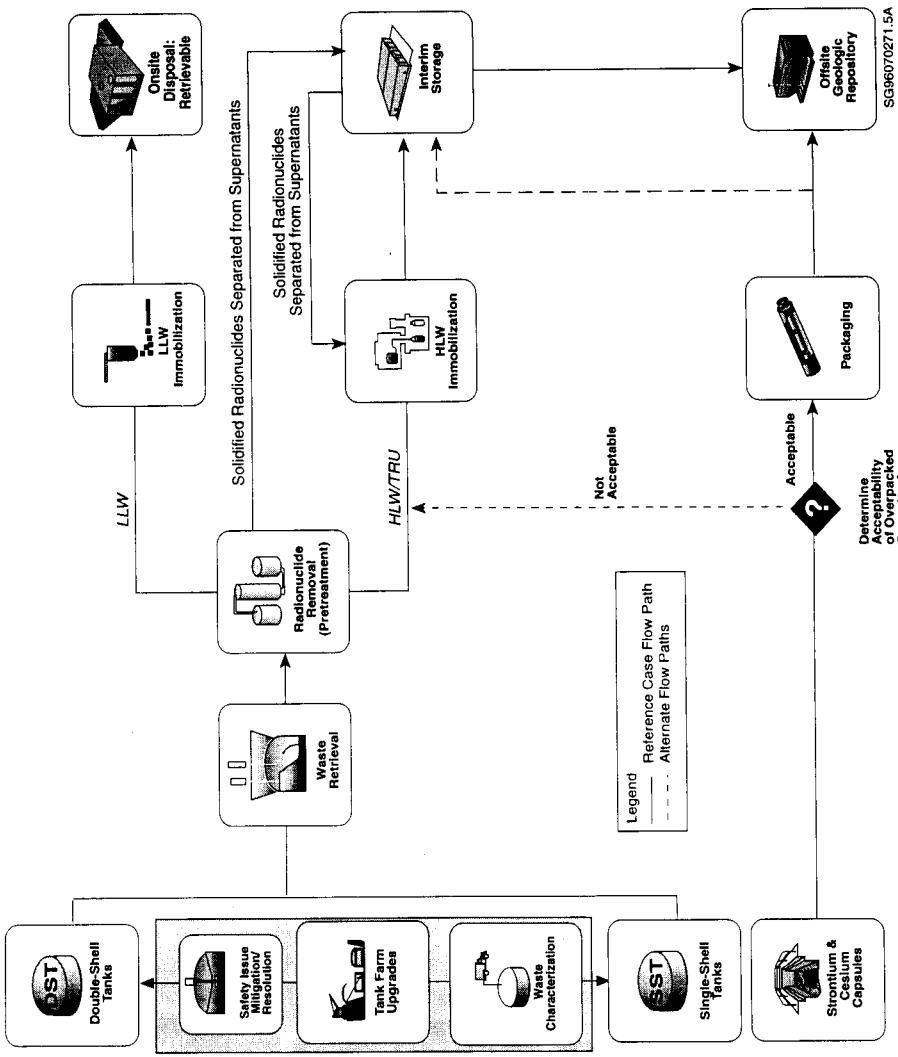
The role of the RL TWRS Program Office is day-to-day oversight of all TWRS work scope and participants. The TWRS Program Office organizes, plans, and controls in accordance with HQ and RL strategic direction and policies. The TWRS AM reports to the RL manager and interfaces with other RL program offices and divisions as required.

The organization established to facilitate effective oversight and management of TWRS as a project is depicted in Figure ES-2 as directly aligned with the TWRS Work Breakdown Structure (WBS). This figure shows the relationships among the various functions as part of the TWRS Program and the various Project Elements within the TWRS Program. Project managers are responsible for direct management of the projects, and they report up to Project and Division Directors. Project managers are empowered with appropriate decision-making authority and are accountable for organizing, planning, and successfully executing to meet all project goals and objectives. Project organizations will be structured by clearly defined roles and responsibilities. Staff will be qualified for their project assignments. Specific roles and responsibilities are identified in TWRS project plans and procedures.

RL TWRS Program Office responsibilities include the following:

- Overseeing and controlling all TWRS activities
- Establishing program policy guidance and direction for contractor management systems and project execution consistent with DOE-HQ and RL policies and guidance
- Ensuring adequate definition and organization of work scope for clear understanding of expectations and product specifications
- Ensuring development and integration of baseline plans that incorporate performance measures for each TWRS project
- Obtaining and allocating resources necessary for efficient execution of project activities
- Monitoring and evaluating project and contractor work performance

Figure ES-2. Relationship of TWRS Program Elements



- Accepting or rejecting completed work scope.

Contractor TWRS Program Office

The TWRS role for the Hanford Site PHMC and its major subcontractors is management, integration, and operation of TWRS storage tanks and other facilities. The contractor(s) executes RL and TWRS direction. Contractor(s) responsibilities include the following:

- Serving as TWRS design authority
- Safely operating all TWRS facilities
- Completing systems definition
- Supporting project formulation and baseline planning, organizing, and development
- Providing and maintaining a comprehensive technical baseline
- Executing authorized projects according to baselines and management plans
- Supplying and managing the resources necessary to efficiently perform project work scope
- Providing technical direction
- Establishing and maintaining contractor management systems
- Integrating and overseeing subcontractors and acting as their contracting officer
- Identifying technology needs to PNNL.

The project-oriented organization established for contractor management will align generally with the RL TWRS organization. Contractor project managers will be accountable to respective RL project managers for successful execution of projects. Contractor organization and responsibilities are described in the *TWRS Multi-Year Work Plan* (MYWP) and in the PHMC's TWRS program management documentation.

Waste Disposal Integration Team

The Waste Disposal Integration Team (WIT) is responsible for providing project planning and continuous assistance to the Waste Disposal Division of TWRS. This assistance will include, among other things, providing program integration and coordinating the actions of private contractors and the PHMC; developing and maintaining the technical and programmatic baselines; establishing overall program logic and performance measures; evaluating contractor products based on the specifications, statements of work, performance measures, and the private contractor's Integrated Master Schedules; and integrating Disposal Division into the Hanford environmental compliance framework. The WIT also provides direct support to the LLW and HLW project managers, including management support, Integrated Product/Process Team (IPT) coordination, and technical analyses and issue resolution.

PNNL TWRS Technology Program Office

PNNL is the Hanford Site contractor for research, development, and integration to meet program technology needs. Toward cost-effective accomplishment of the TWRS mission and project objectives, PNNL is responsible for developing or improving technologies as needed to characterize , retrieve, and store/dispose waste. PNNL responsibilities include activities funded and managed by the DOE Office of Technology Development (EM-50) to monitor and interface with other national laboratories and universities in support of TWRS technology needs.

ES-3.3 SYSTEMS DEFINITION

Systems definition is the systems engineering process to establish configuration of the physical system that will accomplish the TWRS mission. The systems engineered configuration is developed from the top down to establish program functions and requirements and identify construction projects necessary to achieve the TWRS mission and objectives. Systems and design engineering within each project continue to define the TWRS physical system at levels that support procurement and construction. The TWRS system configuration is described by the technical baseline, which evolves under formal baseline change control and configuration management processes.

Major systems engineering functions performed at each level (site, TWRS mission, project) result in definition of a technical baseline comprising functions, requirements, technical logic, and systems definition. Detailed description of systems definition processes and systems engineering management policies and requirements is part of the TWRS Program Management Policies (DOE/RL-93-0106), the TWRS Systems Engineering Management Plan (WHC-SD-WM-SEMP-002), and the TWRS Configuration Management Program Plan (WHC-SD-WM-CM-013).

ES-3.3.1 Management System

The TWRS management system is based on the following concepts: (1) work is planned and defined to the level of detail appropriate to ensure timely accomplishment of all objectives; (2) work is organized, authorized, and managed on a project basis to accomplish planned objectives and produce tangible results; (3) specific acceptance criteria and performance measures are established to assess progress and performance.

The management system supports DOE project management requirements and interfaces with systems for EM-30 and RL management. Management system documentation indicates the policies, practices, and procedures required to be implemented for management of the program.

ES-3.3.2 Management System Processes

TWRS management system processes establish the sequence for activities, products, and interfaces among program participants. Specific process activities and interfaces characterize the formulation, execution, and evaluation phases of the program, as detailed in the TWRS Program Management System Description.

Formulation

TWRS formulation activities at the program level include (1) definition of strategic direction and boundaries for the program, and scope for all projects; (2) integration of technical, cost, and schedule baseline elements that reflect the program technical approach, work priorities, schedule objectives, and funding constraints; (3) determination of work and organization breakdown structures to support projectization; (4) development and implementation of management systems; (5) specified expectations for products and performance; (6) resource acquisition; and (7) demonstration of readiness to work.

Significant contractor, HQ, and RL activities that support the TWRS Program and project formulation process include strategic planning; technical baseline development; multi-year activity-based planning and baseline development that incorporates performance measures; organization and development of human and institutional resources; management systems development; and resource acquisition.

Execution

Project execution is actual performance of authorized work. The TWRS Program is organized into projects for execution according to baseline plans for achieving goals and objectives. Under the TWRS management system, project managers have single-point responsibility and accountability for successful project execution.

Execution phase activities and processes include formal work authorization; administration to manage/expend funds and other resources; physical performance of work to specified criteria; application of management systems in oversight of work performance; change control; and status reporting.

Evaluation

Program evaluation activities include review of progress and performance against approved baselines; analysis of completed work and products delivered; identification of baseline variances within contexts of occurrence, causes, and impacts; information input to decision-making processes; corrective actions; internal assessments; and management of responses to external assessments of the program or its elements.

Major activities and processes to evaluate and control the TWRS Program and projects include analysis to determine status in terms of actual expenditures, schedule performance, and acceptability of work products. Specific comparisons and trend analyses determine variances from cost, schedule, and technical elements of the baseline and need for corrective action. Performance improvement actions based on analyses, recommendations, and risks may entail changes to the established baseline.

The TWRS management conducts monthly program progress/performance reviews and reports to DOE-HQ. TWRS conducts regular project-specific reviews to address status, issues, and recommended actions. Project managers review projects as often as required to ensure effective

oversight and control. At higher levels, evaluation includes semiannual review of the program by EM-1. The Secretary of Energy receives an annual briefing regarding overall program status, issues, and TWRS integration within Hanford Site programs.

Systems Engineering

Systems engineering is a generalized and systematic method for defining problems and evaluating and implementing solutions. This approach emphasizes clearly defined goals, careful analysis of functions and requirements, complete evaluation of alternative solutions, and verification and testing of implemented solutions.

Mission analysis is the first step in the systems engineering process. The purpose of performing the mission analysis is to transform a problem or problem statement into a well-defined mission statement and to identify the mission boundary. A mission analysis identifies (1) the mission inputs or initial state; (2) the mission outputs or desired final state; (3) the mission boundary and interfaces; (4) the mission requirements; and (5) the needed information. The mission statement describes a top-level function suitable for functional decomposition in subsequent applications of the Functions and Requirements (F&R) Analysis and Allocation procedure.

The mission analysis objective is to define the problem and develop a TWRS mission statement that will form the basis for a system that will resolve the problems with the Hanford tank waste. The mission analysis provides the basis for (1) defining the system in terms of its functional, operational, and final configuration; (2) identifying, quantifying, and allocating programmatic and system requirements; (3) characterizing the relationships among the functions, requirements, and products; and (4) establishing the bounding conditions for the physical and programmatic systems to be provided for executing the mission.

ES-3.3.3 Management Systems

An overall view of Hanford Management and the document flow associated with this view has been established. Figure ES-3, which shows the basic elements of Hanford Management, was extracted from the MDD and the RL policy directive on systems engineering. The basic elements in the figure have a matching set of documents that capture the results of exercising the Hanford Management effort. The documents are shown in Figure ES-4. The management systems for TWRS encompass the infrastructure of processes, procedures, and tools used to define, plan, and control work including the budget, cost, and scheduling processes. Processes that make up the infrastructure begin with RL processes to develop and maintain the Hanford Mission Direction Document. Management Systems is one of the 17 projects within TWRS. Management Systems will span the entire TWRS life cycle and must provide a unifying thread of analysis of performance and feedback within and between each of the other individual projects described in ES-4 in their turn.

ES-4 Acquisition Strategy

TWRS acquisition policies and processes reflect the management approach and contractual basis of the program. Acquisition of materials and services will cost effectively support program needs. TWRS acquisition strategies comply with the intent of the Secretary of Energy's contract reform report, which identified contracting factors relevant to the DOE mission.

Figure ES-3. Hanford Management

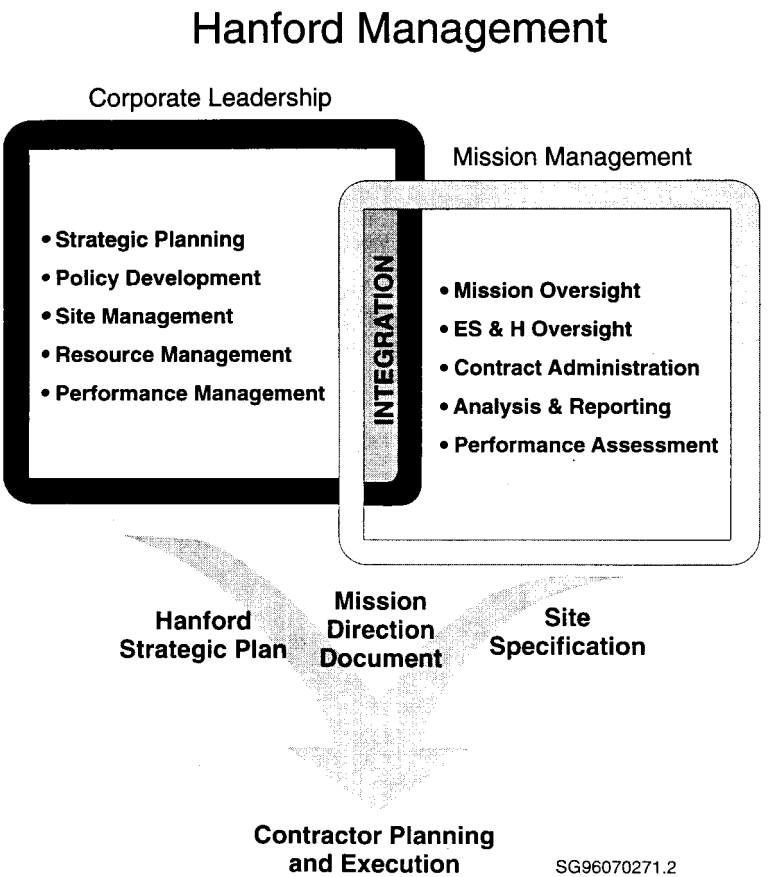
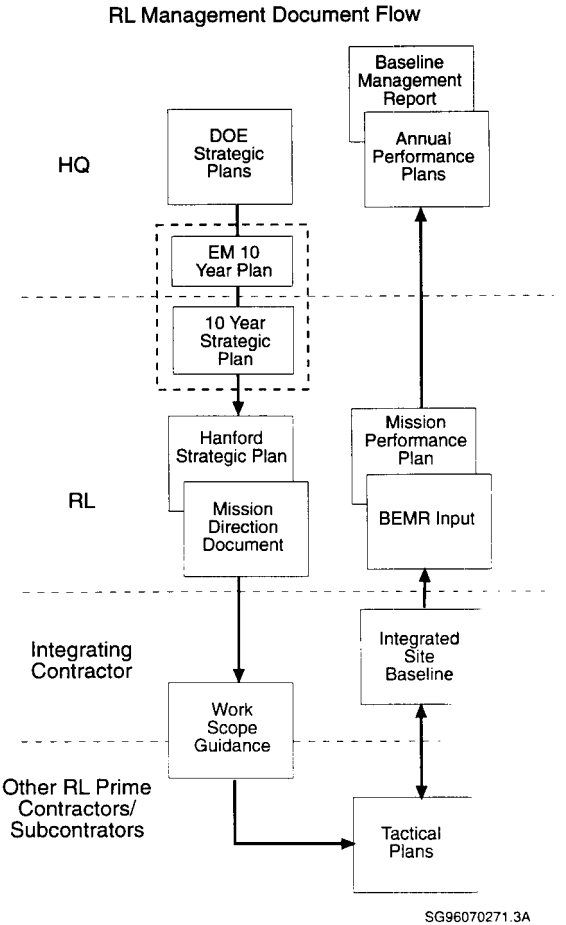


Figure ES-4. RL Management Document Flow



TWRS acquisition processes and contracting strategies depend upon clear definition of the contract expectations understood by all involved organizations, and development of objective, results-oriented performance criteria and measures. A comprehensive procurement specification will define the level of reporting and control necessary to ensure effective oversight by RL. Current efforts to improve the qualification of existing personnel will support the definition of contract expectations and improve contract oversight.

RL will guide and direct the PHMC and major subcontractors in procuring materials and services to complete the portion of the TWRS work scope that is not to be privatized. All acquisition management activities associated with privatization will be executed directly by RL with appropriate HQ oversight, and with support of the WIT. Privatization services will be contracted by RL under acquisition authority formally delegated from the Assistant Secretary for EM. TWRS staff from the PHMC and the WIT will support the Source Selection Official and the Source Evaluation Board in the RL acquisition process.

Implementation of privatization for TWRS waste disposal functions involves innovative strategy that incorporates a phased approach and multiple contractors to ensure price competition. The privatization strategy will demonstrate that treatment of Hanford tank waste is commercially viable and that DOE is able to meet long-term Tri-Party Agreement schedule commitments in a cost-effective manner. Following are summaries of the contracting strategies that will be implemented for program acquisitions, including privatization services.

ES-3.4.1 Privatization

Privatization represents a major departure for the TWRS Program, from existing cost-plus contracts for facilities and equipment that are government-owned and contractor-operated (GOCO) to vendor contracts for products that meet DOE performance specifications. Contracting will provide for privately financed design, permitting, construction, operation, and deactivation of equipment and facilities to treat tank waste. Contractors will recover their costs for services when they receive DOE payment of fees charged for delivery of treated waste products that meet acceptance criteria.

Privatization will be implemented in two phases through competitive procurement, under which at least two contractors will compete for all work. The first privatization phase will provide pilot-scale demonstration of the pretreatment and vitrification of tank waste on a commercial basis. For this "proof-of-concept" phase, vendors will be awarded contracts based on their technical proposals and ceiling prices. Capital payments to defray contractor costs will be made after technical deliverables are met and environmental permit applications are accepted for review and processing. Following sufficient design/development, DOE will conduct a firm fixed-unit-price determination to select two contractors who will continue to demonstrate waste processing capability. The primary selection criterion for the two successful contractors will be their proposed firm fixed unit price for the products to be delivered.

After Phase I successfully demonstrates operation of pilot plants, Phase II will be initiated. Phase II will involve full-scale production facilities for the retrieval, pretreatment and vitrification of all remaining tank waste and conduct of decontamination and decommissioning. This phase will consist of open competition for the award of two contracts for privately owned and operated retrieval systems and production plants, with government payment for acceptable waste products delivered.

This phased acquisition strategy is expected to mitigate some of the major risks associated with privatization. The approach will allow DOE to learn how to make privatization work and how to prepare effective contracts for full-scale processing, and it will support the successful completion of the TWRS mission. DOE will actively solicit private industry and stakeholder input to the contracting strategies and requests for proposal.

ES-3.4.2 Performance-Based Contracting

Recognizing the need for improved cost performance, TWRS will structure performance-based contracts (PBCs) for management, operations, and research and technology development. Performance-based contracts may be applied also to other procurement for equipment and services if significant benefit may be gained. Implementation of PBCs for a range of procurement is expected to foster innovative incentive mechanisms, improve cost-efficiency, and enhance performance.

To ensure the success of PBCs, TWRS will (1) state DOE expectations to reward superior performance and minimize government costs; (2) define results-oriented performance criteria and measures; (3) determine appropriate incentives for contractors to meet and exceed performance criteria; (4) determine appropriate penalties for substandard performance; (5) apply criteria and incentives expected to prompt contractors to seek more efficient performance of some tasks, even if it means subcontracting; and (6) incorporate specific incentives toward cost savings.

ES-3.5 Management Decision and Risk Management Process

Management decisions have a major bearing on the success of large complex systems such as TWRS that are ongoing over long periods of time, in this case, decades. Documenting key decisions and decision bases is an essential element of the discipline of decision management. Formal decision management processes have been implemented for TWRS to ensure effective results and systematic considerations of new information relative to previous decisions. Risk management is an integral element of projects and is closely coupled with the overall decision management process. For that reason, risk management has also been undertaken in a formal structured manner, and the decision and risk management processes have been closely coupled to reflect the synergy between the two processes.

ES-3.5.1 Decision Management

The program critical decisions discussed in the Program Management System Description are associated with strategic direction, authorization of major expenditures, and long-term commitments of DOE resources. Other significant decisions required to accomplish objectives, mitigate or resolve uncertainties, or validate planning assumptions are key decisions and major procurement decisions for construction projects. Such primary decisions may affect non-TWRS interfaces and/or involve risk, and TWRS has structured a process for their control and traceability.

The process incorporates specific standards and criteria to determine which decisions will be made at what levels. TWRS procedure 01-04 delineates the process for achieving and documenting approval of decisions delegated from HQ, including key project decisions. The process consists of a three-tier review/ approval of support documents and incorporates independent assessment, decision evaluation, and interfaces with RL processes for review by the Site Management Board and others.

The decision-making process includes (1) identification of need for a major decision, which may be planned or unplanned; (2) preparation of packages that describe the decision, the level required for its approval, and associated alternatives/risks; (3) review and recommendation by stakeholders; (4) decision-making based on evaluation of recommendations/risks, and (5) implementation of the decision under appropriate management system processes.

ES-3.5.2 Risk Management

Recognizing the need for risk assessment and supporting HQ requirements for the process, TWRS has incorporated into the management system a quantitative, disciplined approach. Risk evaluation activities are embedded in program management processes and render fundamental input to the decision-making process. Risk management includes identification, assessment, and mitigation of technical and programmatic risks.

ES-3.5.2.1 Risk Identification

Risks are identified and described in technical and program management documentation that addresses the impacts of one type of risk on others. Technical risk identification is part of systems engineering, technical baseline development, and technology development. Programmatic risks are identified under processes for strategic and program planning, including baseline development.

ES-3.5.2.2 Risk Assessment

Identified risks will be evaluated within the contexts of the factors creating the risk and the potential impacts to the program. Generally, full description and quantification of specific risks require extensive evaluation and risk modeling, including sensitivity analysis to isolate the risk factor(s) of greatest impact. The magnitude of potential impacts provides a basis for ranking risks, planning risk mitigation, and prioritizing resources toward mitigation.

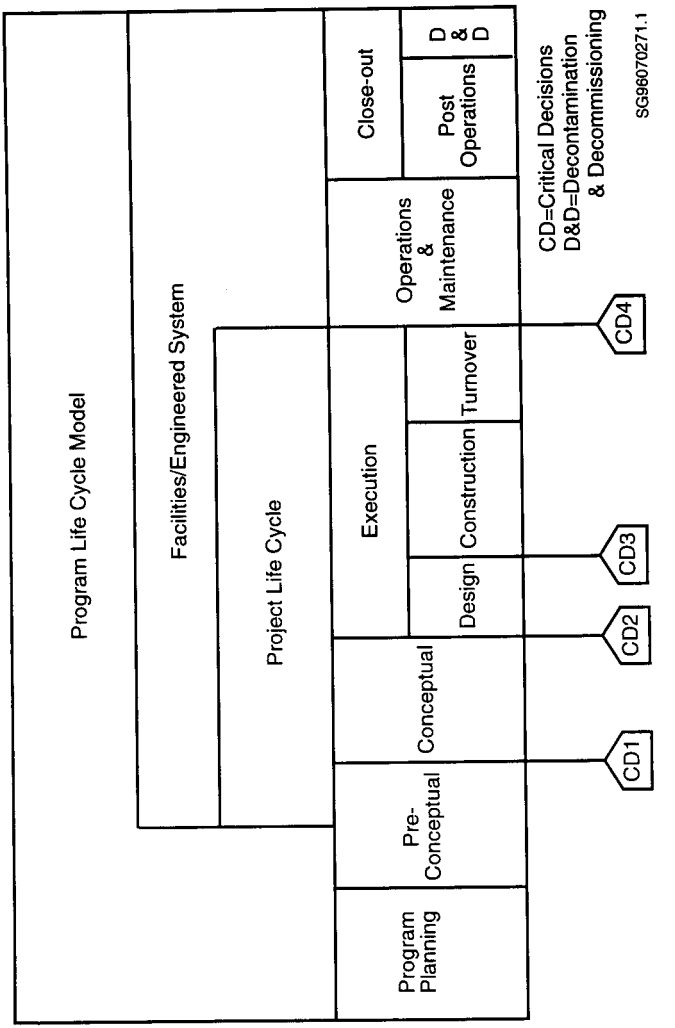
ES-3.5.2.3 Risk Mitigation

The TWRS management system incorporates the application of management and engineering methods, processes, strategies, and resources to reduce or eliminate the impacts of identified risks. Results of these mitigation efforts are feedback to the other elements of decision and risk management to ensure that experience informs both the ongoing efforts and planning for future activities.

ES-3.6 Life Cycle Asset Management Framework

LCAM practices will be implemented for TWRS as required by DOE Order 430.1. LCAM is a unified system of processes and decisions that frame the activities over the entire life cycle for the TWRS system elements. The LCAM model is shown in Figure ES-5. Each element of the LCAM framework must be clearly met by work within TWRS, and a critical effort within the management approach for TWRS is to establish the relationship between the TWRS projects and LCAM.

Figure ES-5. LCAM Life-Cycle Model



ES-3.6.1 LCAM Model for Life Cycle Asset Management

LCAM divides a project into discrete but related elements that cover the project effort from the time a need is defined until the need is met and the system elements have been decommissioned and disposed of. Conceptually there is no trace of the system that achieved the required outcome, only the outcome. LCAM requires that the vision of an effort systematically address all work from program planning through the D&D of the system.

Life cycle refers to all activities from planning through acquisition operations and maintenance and final disposition. RL has issued two field office-level documents to support implementation of DOE Order 430.1, Hanford Site Systems Engineering Policy document, RLPD 430.1(01-31-1996), and the Systems Engineering Criteria Document and Implementing Directive, RLID 430.1(01-31-1996).

ES-3.6.2 LCAM and TWRS Projects

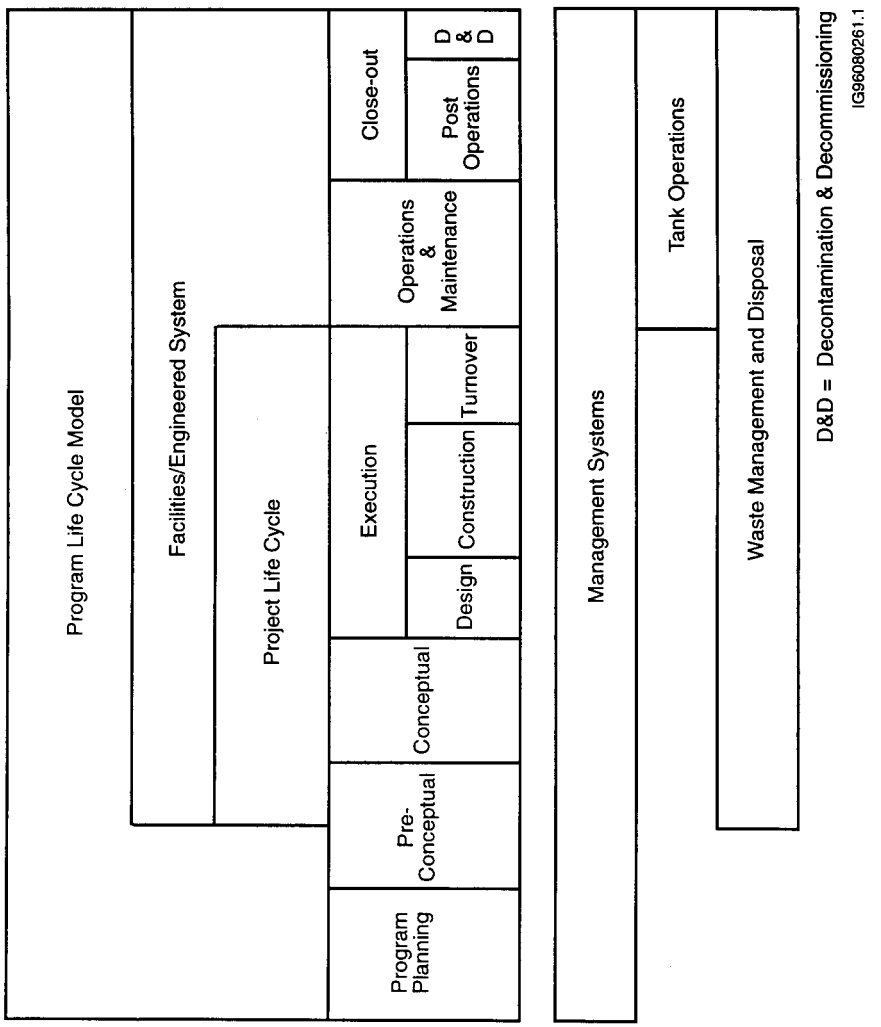
TWRS projects together accomplish all of the elements of the Program Life Cycle Model shown in Figure ES-5. Specific projects contribute to different elements of the program cycle; for simplicity, the specific projects are grouped into Management Systems, Tank Operations, and Waste Storage and Disposal. Management Systems is a singular project and spans all of the elements of the LCAM model; Tank Operations encompasses the projects that make up tank farm operations, safety issue resolution, and characterization; Tank Farm Operations is associated with Facilities/Engineered Systems elements of the model; Waste Storage and Disposal encompasses the projects associated with retrieval, LLW, HLW, and storage and disposal and spans both the Project Life Cycle and the Facilities/Engineered Systems elements of the model. Figure ES-6 shows the roles of each of these major TWRS program groupings versus the LCAM Program Cycle Model elements.

ES-4.0 TECHNICAL BASELINE

The technical baseline for TWRS comprises a substantial amount of information generated from many sources but organized and controlled by an Integrating Contractor under DOE's direction. This information is organized and published in one of two categories of documents, Site Technical Specifications and Interface Control Documents. These documents take several forms but contain requirements, assumptions, inputs/outputs, schedule logic, and risk management lists. The basic information is contained in automated form for configuration management. The Integrating Contractor is responsible for generating and maintaining the technical baseline information. For the Waste Disposal Division of TWRS, which includes the activities of the privatization vendors, the PHMC will rely on technical baseline input from the WIT. In this context, the Integrating Contractor "owns" the technical baseline, with input from WIT, and is accountable for its completeness and accuracy. The DOE, as the responsible agency, oversees this effort and buy- in to the baseline and can be said to "co-own the information and therefore the baseline." This section summarizes treatment of the some of this baseline information.

This section provides some background information and an overview of the technical objectives and approaches for completing the objectives for (1) tank farm operations, (2) safety issue resolution, (3) characterization, (4) retrieval, (5) low-level waste, (6) high-level waste, and (7) storage and disposal. Project summary write-ups are contained in Sections 6 through 22 of this document.

Figure ES-6. Life-Cycle Model



The other program element, Management Systems, was covered in Section ES-3 and is not part of the technical baseline discussion that includes Sections ES-4.1 through ES-4.7.

The TWRS WBS-to-functions relationships are shown in Table ES-2. This table shows the functions addressed by specific TWRS WBS elements and the projects associated with that WBS. Sections ES-4.1 through ES-4.7 are organized by the WBS, and within each of these sections the sixteen projects that make up the TWRS technical work are covered as subsections. ES-2 also shows those elements of the WBS associated with privatization efforts. This table is a highly summarized version and, as such, some functions correlate with more than one WBS element. For example, the WBS for Waste Retrieval (1.1.1.3.1) is responsible for performing all of the function "Retrieve Tank Waste" (4.2.2), a portion of the function "Process Waste" (4.2.3), and a portion of the function "Dispose Waste" (4.2.4). The shading indicates applicability and the reference and where there is text in the shaded area that refers to elements of the privatized work scope.

Table ES-2. TWRS WBS-To-Functions Relationships

Functions	Tank Farm Operations 1.1.1.2.1	Safety Issue Resolution 1.1.1.2.2	Waste Characterization 1.1.1.2.4	Waste Retrieval 1.1.1.3.1	Low-Level Waste 1.1.1.3.2	High-Level Waste 1.1.1.3.3	Storage & Disposal 1.1.1.3.4
Manage Tank Waste 4.2.1						[Phase II privatized]	
Retrieve Tank Waste 4.2.2						[Phase II privatized]	
Process Waste 4.2.3					[Phase I privatized]	[Phase II privatized]	
Dispose Waste 4.2.4				[Tank and Retrieval System Closure]			

The Manage Waste functions correlate to the high-level grouping of WBS elements that includes Tank Farm Operations, Safety Issue Resolution and Waste Characterization. Waste Retrieval is the beginning of the high-level grouping of WBS elements called Storage and Disposal. Wastes are separated into high- and low-activity fractions and sent to the respective immobilization facilities. The immobilized low-activity waste is disposed onsite, but high-activity wastes are interim stored until the geologic repository is available. The cesium/strontium capsules will eventually be managed by the program as well; activities will be integrated with the interim storage and possibly the HLW immobilization activities.

Background

The SSTs were constructed under ground with a single carbon steel shell within a structural concrete shell. Their are several types of SSTs, with capacities that range from 0.2 million liters (53,000 gal) to 3.8 million liters (1 million gal). Most have capacities of 2 million liters (528,000 gal) or more.

The DSTs were constructed under ground with a primary tank and a secondary liner both of carbon steel. There are some differences in tanks constructed at different times. Twenty-four of the tanks have capacities of 4.4 million liters (1.06 million gal), and the remaining four have capacities of 3.8 million liters (1 million gal).

The tanks now contain a mixture of salt cake, liquid, and sludges with both radioactive and hazardous components. Sludge consists primarily of solids (hydrous metal oxides) precipitated from the neutralization of acid waste. Salt cake consists of the various salts formed from the evaporation of water from the waste. Liquids exist as supernatant (liquid above solids) and interstitial liquid (liquid filling the void between solids) in the tanks. These waste types do not necessarily exist as discrete layers but are intermingled to different degrees. Some sludges and salt cake may contain interstitial liquids and be relatively soft, while others are drier and harder.

The tank waste is mostly inorganic and consists primarily of sodium hydroxide; sodium salts of nitrate, nitrite, carbonate, aluminate, and phosphate; and hydrous oxides of aluminum, iron, and manganese. The radioactive components consist primarily of mixed fission product radio nuclides such as strontium-90 and cesium-137; and elements such as uranium, plutonium, and americium. Complexed waste contains the chelating agents EDTA and HEDTA. There may also be detectable halogenated and nonhalogenated organic compound contamination. The mixed waste in some tanks may have detectable amounts of heavy metals such as lead, chromium, and cadmium.

Chemical processing activities in the 200 East and 200 West areas designed to separate plutonium from spent nuclear fuel generated the majority of waste stored in the high-level underground storage tanks. The tanks contain radioactive slurries generated by one of the following processes: the bismuth phosphate process, the tributyl phosphate process, the reduction-oxidation process, the plutonium-uranium extraction process, and the B Plant waste fractionation process. Other tank waste was generated in smaller volumes from research and development programs, laboratory processes, and Plutonium Finishing Plant operations.

All of the fuel processing methods generated acidic waste streams. Sodium hydroxide or calcium carbonate were added to the waste before it was transferred to the tanks to neutralize the acid and minimize tank corrosion. The tanks currently contain moderate to strong alkaline solutions. Additional post-processing of some wastes to recover plutonium and uranium or to reduce the volume of HLW added ferrocyanide and some organic compounds that are listed as hazardous wastes.

In addition to the major processes listed above, the following installations and actions have also added to tank waste inventory and complexity:

- C Plant (hot or Strontium Semiworks), a pilot plant for chemical separation processes and equipment development, C Plant was retired in 1967. A small amount of waste was generated, totaling 3.04 million liters (803,000 gallons); the waste is typically high in strontium content.

- Several smaller waste treatment facilities, known as vaults, were built near the tank farms to settle, evaporate, neutralize, and condition plant waste to reduce the waste volumes directed to the tanks and to make the waste alkaline to minimize corrosion. Vault configurations vary but generally consist of a segmented, underground, concrete structure with a steel tank in each segment, interconnected with piping. Equipment is accessed through concrete cover blocks at ground level. The vaults adjoin the related tank farms and processing plants with AR, BSR, and CR vaults in 200 East; and TXR, UR, and WR vaults in 200 West Areas.

- Miscellaneous past sources waste, various other wastes and material that were added to the tanks, comes from the 300 Area, 100 Area production reactors, various laboratories, and catch tanks. Unique additions to the waste included laboratory waste; shroud tubes; ceramic balls; experimental fuel elements; and relatively small amounts of enriched uranium, plutonium, cobalt-60, and natural uranium. Also, diatomaceous earth was added to tanks BX-102, SX-113, TY-106, TX-116, TX-117, and U-104 to absorb residual supernatant liquors. For the same reason, type 2 Portland cement was added to tank BX-105 in 1966. Miscellaneous waste streams include Hanford defense residual liquor, Hanford laboratory operations, filtered Hanford Site water, phosphate decontamination waste from N Reactor, and noncomplexed waste.

The waste derived from these complex activities is designated as hazardous due to its corrosivity, toxicity, and content (e.g., spent solvents). These conditions, in combination with the radioactivity, have increased the complexity of the TWRS Program. As a hazardous, radioactive waste, its storage, treatment and disposal and that of its associated secondary waste is subject to regulation under both Federal and State statutes. The key statutes are subtitle C of the Resource Conservation and Recovery Act (RCRA), Title 40 of the Code of Federal Regulations, and the State of Washington Dangerous Waste Regulations. In addition, emissions from the waste management activities are also regulated under the Clean Air Act and associated Federal and State programs. Compliance with these regulations involves coordination with regulatory agencies, acquisition of permits, monitoring, reporting and record keeping. In some instances, compliance is not attainable, and additional corrective action plans have been imposed through consent agreements. These consent agreements include the *Hanford Federal Facility Agreement and Consent Order*, NESHAPS Compliance Order - air emissions, Federal Facility Compliance Agreement for Radionuclide NESHAP, and Consent Order DE-91NM-177 for the Permitting of Liquid Effluent Discharges. All these actions are in addition to the other requirements for daily operations of TWRS facilities and the design of future facilities and have significant impacts on costs.

ES-4.1 Tank Farm Operations

The TWRS HLW tank complex is made up of 149 inactive SSTs, 28 DSTs, the 242-A Evaporator, and 39 catch tanks, plus piping, monitoring equipment, and other ancillary facilities and equipment required to support the safe storage and transfers of the tank wastes. The major components of the system are discussed in the following sections.

ES-4.1.1 Tank Operations

Tank Farm Operations is responsible for the operation, maintenance, and upgrade activities associated with ensuring the safe storage of the tank wastes. Ongoing activities include improvements to the tank farm conduct of operations and maintenance of tank farm facilities and operation of the 242-A Evaporator to reduce the volume of tank waste. In addition, the program is pumping interstitial liquids from the SSTs (interim stabilization), disconnecting piping to prevent further liquid intrusion (isolation), and reducing surface contamination above the tanks to bring them to a controlled, clean and stable condition. The pumping of interstitial liquids from SSTs is also called salt well pumping; this is a major element in SST stabilization and generates the largest stream of wastes to the DSTs. Interim stabilization of SSTs is to be completed by 2000.

Controlled, clean, and stable condition for SSTs and DSTs must be completed before Waste Retrieval assumes responsibility for the SSTs and the DSTs from Transition Project. After that assumption of responsibility, the Waste Retrieval elements must maintain minimum safe operations. Turnover will be accomplished in a two-stage process, with SST turnover in 2002 and DST turnover in 2006. The operations will be turned over to private contractors in 2011. Outlying areas will be prepared for turnover to Environmental Restoration (EM-40) as they are available. Specific activities that are included with Tank Operations include waste receipts, waste transfers, and concentration (evaporation) of wastes.

Waste Receipts

The DSTs continue to receive waste generated by decommissioning and cleanup operations in the 100, 200, 300, and 400 Areas. Waste streams continue to be directed to the DSTs, including effluents associated with the deactivation program for the Plutonium-Uranium Extraction Plant (PUREX), routine maintenance and operations waste, waste from B Plant maintenance activities and condensate; T Plant waste; waste from the 222-S Laboratory and the Waste Sampling and Characterization Facility in the 200 West Area and the 300 Area laboratories; miscellaneous waste streams from ion exchange resin regeneration; and equipment flush water. Wastes generated from terminal cleanout of inactive processing facilities such as Z Plant, B Plant, and PUREX are currently transferred to DSTs using underground pipelines. Other wastes are received into the DST system via shielded transport at the 204-AR railcar (low-activity waste) unloading facility. Interim stabilization work on SSTs is the largest single contributor to the volume; this work encompasses the salt-well pumping being conducted to remove liquids that could migrate out of the SSTs.

Waste Transfers

Although numerous waste transfer architectures (e.g., pipelines, railcar, tanker truck) have been evaluated, the principal method of tank waste transportation for the TWRS Program will continue to be underground piping systems. Shielded trucks and rail tankers will be used for specific

applications (e.g., B Plant and T Plant wastes) where evaluations support the benefits of these systems. A case-by-case evaluation is needed to determine suitable waste transfer methods for new waste generators and for tank waste retrieval activities. New waste generators may be associated with 400 or 300 Area wastes and changes in mission or new missions such as Fast Flux Test Facility restart for medical isotope or tritium production.

The underground transfer pipelines connecting DSTs in the 200 West Area with the 200 East Area DSTs, known as the cross-site transfer system, is used to transfer waste solutions collected in tank 241-SY-102 to the 200 East Area DSTs. Waste solutions collected in tank 241-SY-102 are generated from salt well pumping, cleanout of the Plutonium Finishing Plant (PFP), and operation of the 222-S Analytical Laboratory.

The existing cross-site transfer system consists of six transfer lines, four of which are either plugged or suspected to have failed; the remaining two are of questionable integrity. A cross-site transfer of tank wastes was successfully completed during 1995. An evaluation of cross-site waste transfer alternatives is contained in the *Final Environmental Impact Statement - Safe Interim Storage of Hanford Tank Waste, Hanford Site, Richland Washington*. The preferred alternative contained in the EIS is to construct a replacement underground pipeline system. Project W-058, Cross-Site Transfer System, will provide replacement underground transfer lines for the existing cross-site transfer system. In accordance with Tri-Party Agreement milestone M-43-07, Project W-058 is anticipated to be completed and operational by February 1998. The replacement transfer system will be used to transfer the waste from 200 West Area tanks once space in the 200-East Area DSTs is made available through concentration, consolidation, and treatment.

Concentrate Waste

With the continued generation of aqueous wastes directed to the tanks, concentration is necessary to avoid the construction of additional tanks. An alternatives evaluation has been conducted to select a suitable means for tank waste concentration. The existing 242-A Evaporator/Crystallizer was selected as the preferred waste concentration mechanism after comparing alternatives using criteria consisting of stakeholder values (e.g., health and safety risks, waste minimization), technical feasibility and maturity, implementation schedule, and life-cycle cost.

The 242-A Evaporator located in the 200 East Area was constructed in 1976 as the primary mechanism for reducing the volume of wastes stored within the Hanford underground tanks. Waste solutions are sampled, then transferred to the evaporator. After evaporation, the concentrated waste solutions are collected, sampled, and transferred to a storage tank. Process condensates evaporated from the tank waste solution are condensed and then collected in the Liquid Effluent Retention Facility (LERF) and subsequently treated at the 200 Area Effluent Treatment Facility (200 ETF). While LERF and 200 Area ETF are managed and operated by the Liquid Effluents Program and are not part of the TWRS program, their operations are critical to successful completion of the TWRS mission. It is anticipated that the 242-A Evaporator will operate through at least 2011 with a potential extension of operations by the private contractors. The private contractors selected for processing of tank wastes will evaluate the need for waste concentration and provide a suitable system, if necessary. Potential private contractor(s) needs for waste concentration will include evaporation of excess waste retrieval motive fluid, concentration of pretreated HLW/transuranic (TRU) wastes, and concentration of cesium and/or technetium separated from tank wastes.

ES-4.2 Safety Issue Resolution

The Safety Issue Resolution element has the responsibility for defining, evaluating, resolving and mitigating waste tank safety issues in the HLW tank complex. Safety issues have been raised for both SSTs and DSTs and resulted in Unreviewed Safety Questions (USQs) in the areas of flammable gas generation, organics, ferrocyanide, and high heat. The current baseline calls for the mitigation/resolution of tank safety issues for high-priority Watch List tanks by September 2001.

Flammable Gas Project

Several of the HLW tanks generate, retain, and release flammable gas mixtures, including hydrogen, ammonia, methane, and nitrous oxide, into the dome space. If an ignition source were present during a gas release the potential exists for a deflagration and release of radioactivity. Tank 241-SY-101 was the highest-priority flammable gas tank and a major concern for several years because it periodically released a large volume of flammable gas. A mixer pump was installed in the tank in 1993, and mixing has successfully mitigated the large periodic gas releases. Multifunction instrument trees that provide temperature, pressure, and gas concentration data are being installed in the tanks of concern. Studies of the chemical and physical mechanisms of gas generation and release are being conducted and equipment prepared to further increase levels of safety.

Ferrocyanide Project

As part of the previous chemical processing operations conducted to remove cesium from the wastes, ferrocyanide was added to many SSTs. Twenty-four tanks were originally considered to have the potential for more than 1000 g-moles of ferrocyanide precipitates. All 24 have been removed from the Watch List as of September 4, 1996, because studies on the remaining tanks have confirmed that ferrocyanide has degraded significantly over the 40 years of storage to the point where there is not enough fuel value remaining to sustain a reaction. Documentation providing the technical basis for classifying the tanks as safe was submitted on July 3, 1996, and DOE accepted the recommendation on September 4, 1996.

Organic Project

Twenty tanks have sufficient organic content (>3% total organic carbon) or floating organic liquid that they are of concern and included on the Watch List. It is postulated that if the tanks are heated to 180 to 250°C the organic-nitrate/nitrite mixture might react rapidly, damaging the tank and leading to releases of radioactive materials to the environment. It is believed to have a low probability of occurrence because of the large difference between the normal operating temperatures and the required temperature for initiation of a reaction. Efforts are under way to either demonstrate that there is not a significant problem or to control the tanks in a safe mode until they can be retrieved. Testing of waste materials and development of enhanced monitoring equipment are being pursued.

High Heat Project

Ten tanks have been considered as high-heat tanks (>40,000 Btu/hr). Tank 241-C-106 has the highest heat generation rate (>100,000 Btu/hr) and is the only tank placed on the Watch List because of heat. The tank temperature is controlled by adding water and removing steam through an

active filtered ventilation system. While this is effective, there is concern that the SST may corrode and begin leaking. Thus, liquid additions and the current temperature control method are of limited benefit. A chiller was added to the tank in FY 1996, and plans are being made for this to be the first tank retrieved to eliminate the potential problem. Corrosion control will also be implemented.

ES-4.3 Waste Characterization

The Characterization Project was established to characterize the Hanford Site high-level radioactive waste stored in large, underground DSTs and SSTs. Tank waste contents are characterized to ensure an acceptable level of public and worker health and safety in conjunction with safe storage of waste, and safe and cost-effective waste disposal.

Tank waste samples are gathered via several methods (i.e., liquid grab sampling, vapor sample of the tank headspace, and core sampling) depending on data needs and the types of wastes encountered. The waste samples are delivered to a laboratory for analysis; results and an evaluation of analytical data are documented in Tank Characterization Reports.

A revised characterization and safety strategy has evolved and builds on the improved understanding and significant progress made to date. A key element of the overall strategy is to analyze core samples from key tanks (referred to as the High-Priority Tanks contained in Tank Waste Characterization Basis, WHC-SD-WM-TA-164, Revision 2) to understand phenomena and resolve issues associated with groups of tanks. These tanks were selected by integrating the information needs of the Safety and Disposal Programs.

The following elements contribute to satisfying the information needs described in the technical basis: (1) sampling the High-Priority Tanks to satisfy the highest priority core sampling requirements; (2) sample analyses of the High-Priority Tanks to provide scientific and technical data to confirm assumptions, calibrate models, and measure safety-related phenomenological characteristics of the waste; (3) sampling and analyses of High-Priority Tanks to support important tests and studies required by waste disposal and privatization programs; (4) safety-screening of tanks using the existing Safety Screening Data Quality Objective (DQO); (5) qualification of the rotary mode core sampling system for use in flammable gas atmospheres (several core samples are otherwise unobtainable from many tanks); (6) monitoring of the headspace of all passively ventilated SSTs using combustible gas meters to determine steady-state flammable gas concentrations; and (7) sampling the headspace of all tanks and screening for the presence of organic solvents.

When the sampling and analyses activities associated with the High Priority Tanks are completed, the safety issues may be resolved to the point that the subsequent characterization requirements can be significantly restructured.

ES-4.4 Waste Retrieval

The Waste Retrieval element is responsible for the removal of the waste from the tanks and for providing conditioning and staging in the appropriate high-activity (soluble) and low-activity (insoluble) fractions for transfer to the treatment. It then has responsibility for providing regulatory closure for the tanks. The Waste Retrieval element consists DST Retrieval, SST Retrieval, Tank Farm Closure, and Long-Term Monitoring. These activities are discussed in the following paragraphs.

ES-4.4.1 Single-Shell Tank Retrieval

This project will remove and transfer wastes from SSTs to resolve safety issues, stabilize the tanks, provide feed for disposal operations, and remove waste to allow tank farm closure. The project will develop and use multiple technologies in the design, construction, and operation of systems to dislodge, mobilize, retrieve, and transfer the wastes. The technical baseline calls for the demonstration and use of past-practice sluicing to retrieve SSTs. The goal to achieve for each tank is either 99% removal or removal to the extent that programmatic, public health/worker safety, and environmental needs are met in a cost-effective manner. Past-practice sluicing methods will be used to retrieve the first SST farm and tank 241-C-106 (high-heat tank). Enhancements or non-sluicing methods will be employed to complete waste retrieval to meet retrieval goals in Tank 241-C-106. The onsite PHMC is responsible for development, design, construction, and operation of the SST waste retrieval systems. It is anticipated that 36 tanks will be retrieved before the project is turned over to the Phase II privatization contractors for retrieval of the remaining SSTs. Waste Retrieval assumes responsibility for the SST operations by 2002.

ES-4.4.2 Double-Shell Tank Retrieval

This project will remove mixed waste from the DSTs for waste consolidation (i.e., create receiving space for wastes from SSTs), safety issue resolution, and feed for disposal operations. The project will develop and use technologies in the design, construction, and operation of systems to dislodge, mobilize, retrieve, and transfer wastes from DSTs. The technical baseline calls for the deployment of two mixer pumps per tank to mobilize the waste. This is the same technology that is being used at Savannah River and West Valley to retrieve HLW from similar tanks. Waste removal will be accomplished by pumping the slurry (supernatant liquid with solids mobilized within) out of each tank. It is the responsibility of the DST Retrieval Project to blend wastes for pretreatment and to provide tank sludge washing. The DST Retrieval Project will take over responsibility for the tanks from the current operations project in 2006 and will turn over responsibility for the tanks to the Phase II privatization contractors in 2011 for removal of wastes from the remaining DSTs.

ES-4.4.3 SST and DST Closure and Long-Term Monitoring

Closure of tank farms is being integrated with the SST and DST retrieval projects. Several technical issues must be closed before tank farm closure can occur, including determination of (1) remediation approaches for residual tank wastes and ancillary equipment; (2) the disposal approach for SSTs and DSTs; (3) the subsidence prevention approach for SSTs left in place; (4) whether surface barriers will be used, and others. Miscellaneous underground storage tanks (MUSTs) will be addressed as ancillary equipment and are part of the SST Retrieval Project. The current strategy for Tank Farm Closure is to remove enough waste from the tanks that the ancillary equipment, contaminated soil, and the tanks themselves will be considered by the U.S. Nuclear Regulatory Commission (NRC) to be non-HLW and may be disposed of in place in accordance with applicable regulations and agreements. The current schedule calls for submission of the Tank Closure/Postclosure Plan by December 2004, initiation of closure on an operable unit or tank farm by March 2012, completion of closure of all SST farms by September 2024, and complete closure of all DST farms by 2032. The Tank Closure/Postclosure Plan will determine the levels and methods of long-term monitoring that will be required for the tank farm areas after 2032. It is expected that monitoring will continue for about 30 years, or until about 2064.

ES-4.4.4 Pretreated Sludges/Solids

The primary goal of sludges/solids pretreatment is to reduce the final volume of HLW resulting from treatment of the Hanford Site tank wastes through separation of nonradioactive components of the waste from insoluble, radioactively contaminated sludges/solids. The principal nonradioactive components that need to be separated from tank waste sludges/solids are sodium, aluminum, chromium, and phosphate. While achieving the primary goal of reducing HLW volume, the sludges/solids pretreatment process must also produce a supernatant stream compatible with the radionuclides separations capabilities of the supernatant pretreatment process.

The Tri-Party Agreement milestone M-50-03 established the enhanced sludge washing process as an initial reference process for pretreatment of sludges/solids. The Tri-Party Agreement further states that the enhanced sludge washing process must be capable of satisfying criteria that will be established by the three parties.

ES-4.4.5 Pretreated Supernatants

The architecture evaluation and selection of the supernatant pretreatment process will be conducted by the private contractor(s) selected by the DOE for processing tank wastes. The supernatant pretreatment process will separate insoluble (e.g., radionuclide solids entrained in supernatants and sludge wash solutions) and soluble radio nuclides (e.g., cesium, technetium, and chelated strontium and TRU elements) from tank waste supernatants and sludge wash solutions. Sufficient quantities of individual radionuclides must be separated form tank waste supernatants and sludge wash solutions to comply with the NRC incidental waste definition for DST wastes and to meet the performance objectives of the immobilized LLW disposal system.

ES-4.4.6 Secondary Waste Generation

The major secondary waste generated by waste retrieval consists of used equipment from retrieval operations. Retrieval will involve deploying a large amount of system equipment in the tanks or in contact with tank waste; retrieval equipment will be subject to contamination with hazardous waste and must be designated as secondary waste. Pending closure plan requirements, contaminated equipment may be left in place with the tank. Equipment removed must be treated in accordance with hazardous waste regulations for waste processing and burial. Equipment removed from Hanford tanks will require storage, transportation, and burial casks, all of which will add to the inventory of secondary wastes. Equipment types include sluicers, pumps, piping, instrumentation, valves, process tanks, transfer lines and soil.

Another major source of secondary waste is the sluicing medium (e.g., corrosion-inhibited water). The sluicing medium will add millions of gallons to the existing tank waste volume.

ES-4.5 Low-Level Waste

The LLW element is responsible for the immobilization of the low-activity fraction. Current plans for Phase I and II processing of tank wastes are to operate the LLW immobilization and supernatant pretreatment processes as close-coupled processes. Existing DSTs will to be used for interim storage (and feed) of retrieved tank wastes, radionuclides separated from pretreatment of tank waste supernatant (e.g., strontium/TRU solids), and the (separated)/pretreated HLW sludges/solids.

DOE has chosen to accomplish the pretreatment and immobilization of the TWRS Program's tank wastes via privatization, meaning that contractors to DOE will use private funding to design, permit, construct, operate, and deactivate their own equipment and facilities to treat tank waste. Payment for these services will take the form of fixed-price per unit of product that meets DOE's specifications. Contractors will be selected from a fixed-price competitive process.

The privatization of pretreatment and immobilization, as currently formulated by DOE, consists of two phases. The first phase, the Proof-of-Concept Phase, will be initiated by award of contracts in late 1996. This phase will operate through at least 2007 and treat approximately 6 to 13 percent of the tank waste. The goal of the Proof-of-Concept Phase is to establish and demonstrate the technical, commercial, and financial capabilities necessary for privatization of the remainder of the tank waste. Once established on this relatively small scale, a second phase will be initiated through a second contract competition. The second phase, the Production Phase, is expected to begin with contract award in 2005 and conclude shortly after 2024 [for LLW, HLW is scheduled for completion by 2028] with the completion of processing operations.

The LLW fraction separated during pretreatment of Hanford Site tank wastes will be treated to immobilize radionuclides and other hazardous waste components prior to disposal at the Hanford Site. The LLW will be disposed in a manner that allows for future retrieval [of the low-activity waste forms] for up to 50 years if conditions warrant. The architecture evaluation and selection for the LLW immobilization system will be conducted by the selected contractor(s).

Infrastructure upgrades necessary to enable both Phase I and Phase II TWRS privatization vendors to function at the Hanford Site will be carried out by the PHMC and are included in the LLW Project.

ES-4.6 High-Level Waste

The HLW/TRU waste fraction separated during sludges/solids pretreatment of Hanford Site tank wastes will be combined with glass-forming materials and vitrified to immobilize radionuclides and other hazardous waste components. The resulting glass will be put into stainless steel canisters, cooled, seal-welded, and leak-tested. It is expected that about 14,000 cubic meters of HLW will be produced. The canisters will be put into interim storage and maintained until disposal at a geologic repository for commercial spent nuclear fuel and DOE HLW. Vitrification of HLW was selected by the DOE as the reference process for tank waste treatment based on an evaluation of alternative technologies. The HLW products must meet the requirements for the repository to accept the wastes; therefore, interactions with the geologic repository and DOE-RW staff will continue so that immobilized waste can be accepted and disposed in the future.

Immobilized HLW will be produced at the private contractor's facilities in both phases of the privatization activities. The immobilized HLW will be accepted and transferred to interim storage facilities by the Storage and Disposal element. Secondary wastes generated by the immobilization project will be transferred to either the Liquid Effluents or Solid Waste Programs. Facilities used in the immobilization activities will be decontaminated and decommissioned by the privatization owners.

ES-4.7 Storage and Disposal

The Storage and Disposal element has three major functions: (1) prepare the cesium and strontium capsules for disposal; (2) store the HLW canisters until they can be shipped to a repository; (3) store and dispose of the immobilized low-activity fraction. Each is discussed below.

ES-4.7.1 Prepare Cesium/Strontium Capsules for Disposal

Encapsulated cesium and strontium isotopic sources are currently stored in the Waste Encapsulation and Storage Facility (WESF) at the Hanford Site. The 1,328 capsules of cesium chloride and 601 capsules of strontium fluoride contain a total of about 70 megacuries of activity, which represents about 38 percent of the total in the HLW tanks. The current baseline plan is to remove the capsules from the WESF and overpack them into canisters that can be put in the HLW storage building, assuming that they are determined to be waste. The encapsulated cesium and strontium wastes will continue to be stored safely until such time as a geologic repository is ready to receive them for disposal.

ES-4.7.2 Interim-Store Solidified High-Level Waste

Immobilized HLW, transferred from the immobilization plant, will be stored on the Hanford Site until shipped to a Federal geologic repository for final disposal. The HLW Interim Storage Project will design, construct, permit, and operate a facility that will provide for interim storage of immobilized HLW in canisters, (potentially) cesium and strontium capsules, and any other identified wastes until these waste products can be shipped to a geologic repository. The functions and requirements for the facility are expected to include transfer/transportation of immobilized HLW, (potentially) cesium/strontium capsules, and any other identified wastes; receipt/verification of the immobilized HLW and placement in storage; interim storage; and off-loading of the stored waste into casks provided by the Civilian Radioactive Waste Management System (CRWMS) for shipment to the geologic repository. The tentative schedule calls for achievement of operational readiness of the initial interim storage capacity prior to initial hot operation of the HLW immobilization facility in 2002 if Phase I privatization includes HLW, and construction/operation until all stored wastes are shipped to a geologic repository, currently forecast for 2035. It is anticipated HLW will be initially sent to the repository from other DOE sites (i.e., West Valley Demonstration Project and Savannah River Site,) because these sites will have already begun immobilization operations. Sufficient interim storage capacity for all the HLW canisters and the packaged cesium and strontium capsules (if packaging is selected) will be provided at the Hanford Site.

Only those canisters that comply with the geologic repository waste acceptance criteria will be accepted for interim storage and monitoring in the interim storage facility. Canisters that are determined not to comply with geologic repository waste acceptance criteria will be evaluated for rework at a HLW immobilization facility, repackaging, or acceptance by the geological repository as a non-standard waste form.

A formal architecture evaluation and selection for the interim storage facility has not been completed. Several architectural concepts for packaging and interim storage of immobilized HLW have been evaluated, but selection of an immobilized HLW package depends on acceptance by the geologic repository and will be negotiated with the CRWMS. The design of the interim storage facility is dependent upon the selected waste package.

Until a formal architecture selection can be completed, the interim storage facility is envisioned to be a below-grade concrete structure with lined shafts for interim storage of canisters. Cooling will be provided, as will an above-grade building to house equipment necessary for placement and retrieval of the canisters. This concept is consistent with the canister storage building constructed at the Savannah River Site in South Carolina.

The interim storage facility will be designed, constructed, and operated by the PHMC. The initial facility will be shared with the Spent Fuel Project and will be known as the Canister Storage Building. The interim storage facility will operate in parallel with the Phases I and II HLW immobilization facilities, receiving canisters from July 2002 through calendar year 2028.

ES-4.7.3 Dispose of Immobilized LLW

It is anticipated that the immobilization of the low-activity fraction of the waste will result in the generation of about 96,000 packages, anticipated to be about 1.2 by 1.2 by 1.8 m. A formal architecture evaluation and selection for the immobilized LLW disposal facility has not been completed; however, several alternative concepts have been evaluated. A baseline concept calls for using existing "grout vaults" to contain the hazardous materials. The initial placement of immobilized waste will be in a retrievable mode so that waste can be moved if it is determined that the storage location is not suitable. The immobilized LLW disposal facility architecture will be further evaluated and selected after an immobilized LLW package has been selected by DOE and the LLW immobilization process private contractor(s).

ES-5.0 RISKS

In response to the Assistant Secretary of Energy for Environmental Management, the Hanford Site contractors developed a conceptual set of risk-based cleanup strategies that (1) protect the public, workers, and environment for unacceptable risks; (2) are technically executable; and (3) fit within the expected annual funding profile.

These strategies were developed because (1) DOE and Hanford Site budgets are being reduced; (2) stakeholders are dissatisfied with the perceived rate of cleanup; (3) Congress and DOE are increasingly focused on risk and risk-reduction activities; (4) the present strategy is not integrated across the site and is inconsistent in its treatment of similar hazards; and (5) the present cleanup strategy is not cost-effective from a risk-reduction or future land-use perspective.

The risk-based strategies were developed through a systems approach that (1) analyzed the cleanup mission; (2) identified cleanup objectives, including risk reduction, land use, and mortgage reduction; (3) analyzed the existing baseline cleanup strategy from a cost and risk perspective; (4) developed alternatives for accomplishing the cleanup mission; (5) compared those alternatives with cleanup objectives; and (6) produced conclusions and recommendations regarding the current strategy and potential risk-based strategies.

This analysis produced a framework and a set of tools for dealing with changes to anticipated funding levels, changes in risk cleanup standards, and Congressional initiatives and inquiries. They include land-supply curves, cost profiles, risk profiles, mortgage-reduction curves, and minimum operations costs. The primary results of the study are (1) identification of the principal environmental, worker safety, and public health risks; (2) a description of what risk-based cleanup

strategies look like; and (3) a description of the implications of adopting a risk-based strategy at the Hanford Site.

ES-5.1 Technical Risks

Significant risks may be encountered in performing the technical work of the TWRS projects. A risk management program therefore is in place to address and monitor these risks, some of which include (1) lack of DST storage space (could result from tank failure, tank component failure, accelerated generation of wastes, loss of evaporator capacity, or several other events); (2) inability to provide private vendors with specified feed; (3) possibility of SSTs leaking during sluicing operations; (4) potential for hazardous conditions in the waste tanks if incompatible wastes are transferred to a tank; and (5) possibility that existing or new equipment used on flammable gas tanks could have potential spark sources that could cause an ignition.

ES-5.2 Programmatic Risks

Effective management of the program is required to avoid management errors that could also impact the program. Some of the more significant of these are (1) design authority function is not properly staffed; (2) cognizant or project engineers do not understand new design authority control or their interface with these functions, risking unsafe functions or authority; (3) supplier litigates or Ecology levies fines or other negative actions; (4) there is insufficient program and operations funding to complete all tank safety equipment commitments and requirements due to emerging safety issues (flammable gas, organic nitrates, salt well pumping characterization); and (5) durable decisions for systems engineering architectural selections, requirements, and scope are not made.

A specific policy has been established regarding core competency issues. The DOE is required to meet its obligations under the Tri-Party Agreement even if privatization fails. Thus, it is required to have access to the expertise required to manage and execute the Disposal Division program, including technical, regulatory, and management staff. Access to this expertise is a form of risk reduction.

Much of this expertise is maintained through the baseline activities of the program including those performed by the PHMC. Additional expertise is funded and provided by the Tank Focus Area, EM Science Program, and EM-50 technology development programs. Much of the remainder is provided through the core competency activities.

Core competency activities were developed using the three decision rules listed below.

1. The work is required whether private contracts are signed or not.

2. No activity is funded which has as its purpose the retention of staff solely to maintain certain expertise at PNNL or the PHMC.

3. Activities would not be funded which were almost certain to be conducted by the private contractors during Phase IA.

CONTENTS

[1] Section 1 is the print out from the RDD-100 database.

CONTENTS (continued)

[2] Common Occupation Classification System

LIST OF TERMS

AAS	Alternative Acquisition Strategy
ADS	Activity Data Sheet
AE	Acquisition Executive
AM	Assistant Manager
A&E	Architect and Engineer
ACTR	Acquiring Commercial Technologies for Retrieval
ADMP	Advanced Design Mixer Pumps
ALARA	As Low as Reasonably Achievable
BIO	Basis for Interim Operation
CDR	Conceptual Design Report
CFR	*Code of Federal Regulations*
CM	Corrective Maintenance
COCO	Contractor Owned Contractor Operated
COCS	Common Occupation Classification System
COR	Contracting Officer's Representative
CRWMS	Civilian Radioactive Waste Management System
Cs	Cesium
CSB	Canister Storage Building
D&D	Decontamination and Decommissioning
DCRT	Double-Contained Receiver Tank
DNFSB	Defense Nuclear Facilities Safety Board
DRD	Design Requirements Document
DOE	U.S. Department of Energy
DQO	Data Quality Objective
DST	Double-Shell Tank
EDL	Equipment Deficiency Log
EDTA	Ethylenediaminetetracetic Acid
EIS	Environmental Impact Statement
EM	Environmental Management
EPA	U.S. Environmental Protection Agency
ESH&QA	Environmental Safety Health and Quality Assurance
ETF	Effluent Treatment Facility
ETFTP	East Tank Farm Transition Project
F&R	Functions and Requirements
FFTF	Fast Flux Test Facility
FM	Field Management
FONSI	Finding of No Significant Impact
FSAR	Final Safety Analysis Report
FTE	Full-Time Equivalents
FY	Fiscal Year
GAO	General Accounting Office
HATS	Hanford Action Tracking System
HEDTA	N-(hydroxyethyl)-ethylenediaminetriacetic Acid
HLW	High-Level Waste
HLLW	High-Level Liquid Waste
HQ	Headquarters

HSTB	Hanford Site Technical Baseline
HTCE	Historical Tank Content Estimate
HTI	Hanford Tanks Initiative
HWVP	Hanford Waste Vitrification Plant
ICD	Interface Control Document
ICE	Independent Cost Estimate
IHLW	Immobilized High-Level Waste
ILAW	Immobilized Low-Activity Waste
IMUST	Inactive Miscellaneous Underground Storage Tank
ISB	Interim Safety Basis
ISSTRS	Initial SST Retrieval System
ITP	Integrated Product Team
JCO	Justification for Continued Operation
JMN	Justification of Mission Need
LANL	Los Alamos National Laboratory
LAW	Low-Activity Waste
LCAM	Life-Cycle Asset Management
LERF	Liquid Effluent Retention Facility
LFL	Lower Flammability Limit
LOW	Liquid Observation Well
LLW	Low-Level Waste
M&I	Management and Integration
MDD	Mission Direction Document
MEL	Master Equipment List
MIT	Multi-Functional Instrument Tree
MOA	Memorandum of Agreement
MSA	Major System Acquisition
MSAP	Major Systems Acquisition Program
MUST	Miscellaneous Underground Storage Tank
MYWP	Multi-Year Work Plan
MWTF	Multi-Function Waste Tank Facility
NCR	Nuclear Regulatory Commission
NDE	Non-Destructive Examination
NEPA	*National Environmental Policy Act*
NRC	Nuclear Regulatory Commission
OAC	Official Acceptance of Construction
ORNL	Oak Ridge National Laboratory
ORR	Operational Readiness Review
OTP	Operational Test Procedures
OWVP	Operational Waste Volume Projection
PA	Performance Assessment
PBC	Performance-Based Contract
PBFC	Performance-Based Fee Criteria
PFP	Plutonium Finishing Plant
PHMC	Project Hanford Management Contractor
PM	Preventative Maintenance
PNNL	Pacific Northwest National Laboratory
PRP	Peer Review Panel

PTS	Progress Tracking System
PUREX	Plutonium-Uranium Extraction (Plant)
RAM	Responsibility Assignment Matrix
RCRA	*Resource Conservation and Recovery Act*
RFP	Request for Proposal
RGS	Retained Gas Sampling
RL	Richland Operations Office
ROD	Record of Decision
RW	DOE Office of Civilian Radioactive Waste Management
S&D	Storage and Disposal
SA	Safety Assessment
SAR	Safety Analysis Report
SD	Supporting Document
SEMP	Systems Engineering Management Plan
SHMS	Standard Hydrogen Monitoring System
SMS	Site Management System
SOW	Statement of Work
SRIDS	Standards/Requirements Identification Documents
SRR	Systems Requirement Review
SST	Single-Shell Tank
Sr	Strontium
SWSEIG	Site-Wide Engineering Integration Group
TCD	Tank Characterization Database
TCP	Tank Characterization Plan
TCR	Tank Characterization Report
TFA	Tank Focus Area
TMACS	Tank Monitoring and Control System
TOC	Total Organic Carbon
Tri-Party Agreement	*Hanford Federal Facility Agreement and Consent Order*
TRR	Technical Requirements Review
TRS	Technical Requirements Specification
TSAP	Tank Sample Analysis Plan
TRU	Transuranic
TSD	Treatment, Storage, or Disposal
TWAP	Tank Waste Analysis Plan
TWR	Technical Requirements Document
TWRS	Tank Waste Remediation System
USQ	Unreviewed Safety Question
VPP	Voluntary Protection Program
WAC	Washington State Administrative Code
WBS	Work Breakdown Structure
WDD	Waste Disposal Division
WDOE	Washington State Department of Ecology
WESF	Waste Encapsulation Storage Facility
WHC	Westinghouse Hanford Company
WIT	Waste Disposal Integration Team
WVR	Waste Volume Reduction

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1 TECHNICAL BASELINE

The technical baseline describes the work (functions) to be accomplished and the technical standards that govern the work. The following information is provided in this section of the Multi-Year Work Plan (MYWP): Project Mission; Project End Point Targets; Summary-Level Forecasting Data (waste type, nuclear material, facility, infrastructure needs); Drivers (key mission and regulatory); Functional Definitions; Project Life Cycle Requirements; Project Issues and Assumptions.

1.1 PROJECT MISSION

1.2 PROJECT END POINT TARGETS

This section identifies the significant end point targets, technical objectives, and safety objectives to be achieved in accomplishing the project mission. This includes general and specific objectives, deliverables, or activities that are essential to the project mission. This information provides an overview of the activities and deliverables that are contained in the schedule section.

1.2.1 End Point Targets

Table 1.2.1-1 contains the End Point Targets that are established in the Hanford Mission Direction Document (MDD). They provide the basis for the project mission and are implemented through technical requirements contained in the Hanford Site Technical Baseline.

Table 1.2.1-1 End Point Targets

1	MDD, Central Plateau, Interim, 32 Retrieve tank wastes to the extent needed for tank closure; divide into high- and low-level fractions and immobilize.
2	MDD, Central Plateau, Final, 33 The high-level immobilized fraction will be interim stored until it can be shipped off-site for disposal (planned for the Yucca Mountain geologic repository).
3	MDD, Central Plateau, Final, 34 The immobilized low level fraction will be disposed on-site in a 200 Area disposal system.
4	MDD, Central Plateau, Final, 35 After the waste has been retrieved from the tanks, the tank farms-including the tanks-will be closed. (Closure is anticipated to include filling the tank void space and adding surface barriers.)
5	MDD, Central Plateau, Final, 44 For Cs/Sr capsules declared waste, send to Yucca Mountain for HLW repository disposal.

1.2.2 Technical Objectives

Table 1.2.2-1 contains the Technical Objectives that achieve the end point targets. They are established in various

Project specific documents and are implemented through technical requirements contained in the Hanford Site Technical Baseline.

Table 1.2.2-1 Technical Objectives

1	Technical Objectives - TWRS (tbd)

1.2.3 Safety Objectives

Table 1.2.3-1 contains the Safety Objectives that are established in the Hanford Mission Direction Document.

Table 1.2.3-1 Safety Objectives

1	MDD, Central Plateau, Safety Objective S54 Maintain Single Shell Tank (SST) Farm Facilities; maintain SST farm facilities within approved safety; envelope, upgrade as necessary; perform surveillance monitoring.
2	MDD, Central Plateau, Safety Objective S55 Operate and maintain Double Shell Tank (DST) Farm Facilities: maintain DST farm facilities within approved safety envelope, upgrade as necessary, perform surveillance monitoring, receive new liquid waste from other activities.
3	MDD, Central Plateau, Safety Objective S56 Maintain inactive Miscellaneous Underground Storage Tanks (MUSTS), maintain facilities within approved safety envelope.
4	MDD, Central Plateau, Safety Objective S57 Operate and maintain 242A Evaporator Facility including feed and receiver tanks, evaporate dilute wastes to conserve waste storage volume.
5	MDD, Central Plateau, Safety Objective S58 Resolve urgent safety issues associated with tank wastes; identify tanks with safety risks, analyze safety risks and determine corrective action, mitigate or resolve safety risks.
6	MDD, Central Plateau, Safety Objective S59 Stabilize/isolate Single Shell Tank (SST) Farms; remove pumpable liquid, provide liquid intrusion prevention.
7	MDD, Central Plateau, Safety Objective S60 Characterize waste to resolve safety risks , and operate tank farms.

1.3 SUMMARY-LEVEL FORECASTING DATA

This section contains forecast information about the project inputs and outputs during the project life cycle. The forecast information is an integral part of the technical basis for the planning, scheduling, and budgeting process.

1.3.1 Waste Type Data (Solid Waste, Tank Waste, Liquid Effluents, Special Case Waste)

Table 1.3.1-1 contains the waste (Solid Waste, Tank Waste, Liquid Effluents, Special Case Waste) inventory and volume projection data. These data are used to track the waste through generation, transfer, receipt, storage, and disposition. The Project schedule and budget reflect the plans for disposition of waste.

TANK WASTE REMEDIATION SYSTEM

FY 1997 MYWP **WBS 1.1**

Table 1.3.1-1 Waste Volume Inventory
(cubic meters)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
FY 1997														
Begin Inventory						221000.0								
Received						788.039	20.0	505.0						
Generated	269.0	364.171		63.61	8.09			5828.92		476958.0				
Reduced														
Transferred	269.0	364.171		63.61	8.09			5828.92		476958.0	0.178	709.96		
Disposed														
End Inventory														
FY 1998														
Begin Inventory						221800.0								
Received						528.766	54.2	300.0						
Generated	269.0	317.111		27.15	8.09			17070.4		1.16949e6				
Reduced														
Transferred	269.0	317.111		27.15	8.09			17070.4		1.16949e6	0.154	708.96		
Disposed														
End Inventory														
FY 1999														
Begin Inventory						220900.0								
Received						150.265		100.0						
Generated	273.0	450.281			8.09			13323.2		955897.0				
Reduced														
Transferred	273.0	450.281			8.09			13323.2		955897.0	0.13	704.96		
Disposed														
End Inventory														
FY 2000														
Begin Inventory						220900.0								
Received						1297.2		100.0						
Generated	287.0	637.731			8.09			4163.51		424784.0				
Reduced														
Transferred	287.0	637.731			8.09			4163.51		424784.0	7.09963	704.772		
Disposed														
End Inventory														
FY 2001														
Begin Inventory						221300.0								
Received						547.665	22.7	100.0						
Generated	286.0	1165.87		327.78	8.09			4049.96		420621.0				
Reduced														
Transferred	286.0	1165.87		327.78	8.09			4049.96		420621.0	7.88763	703.216		
Disposed														
End Inventory														
FY 2002														
Begin Inventory						219900.0								
Received						150.265								
Generated	1054.0	1328.99		347.78	38.136			9127.26		464446.0				
Reduced														
Transferred	1054.0	1328.99		347.78	38.136			9127.26		464446.0	34.4992	706.768		
Disposed														
End Inventory														

TANK WASTE REMEDIATION SYSTEM

Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
FY 2003														
Begin Inventory						218400.0								
Received						1240.35								
Generated	1057.0	777.281		347.78	38.136			22800.9		483825.0				
Reduced														
Transferred	1057.0	777.281		347.78	38.136			22800.9		483825.0	34.7702	713.28		
Disposed														
End Inventory														
FY 2004														
Begin Inventory						217000.0								
Received						150.265								
Generated	1073.0	1293.66		20.0	38.136			22763.1		480002.0				
Reduced														
Transferred	1073.0	1293.66		20.0	38.136			22763.1		480002.0	34.7702	713.28		
Disposed														
End Inventory														
FY 2005														
Begin Inventory						215600.0								
Received						150.265								
Generated	1072.0	1710.66		20.0	38.136			25639.7		642947.0				
Reduced														
Transferred	1072.0	1767.66		20.0	38.136			25639.7		642947.0	34.7702	713.28		
Disposed														
End Inventory														
FY 2006														
Begin Inventory						214200.0								
Received						150.265								
Generated	1053.0	1332.55		20.0	38.136			25450.4		631213.0				
Reduced														
Transferred	1053.0	1332.55		20.0	38.136			25450.4		631213.0	34.6139	477.58		
Disposed														
End Inventory														
FY 2007														
Begin Inventory						212800.0								
Received						136.26								
Generated	1061.0	1517.01		20.0	38.136			24466.3		577088.0				
Reduced														
Transferred	1061.0	1517.01		20.0	38.136			24466.3		577088.0	34.5319	12.58		
Disposed														
End Inventory														
FY 2008														
Begin Inventory						211400.0								
Received						136.26								
Generated	1082.0	2060.22		20.0	38.136			24466.3		577088.0				
Reduced														
Transferred	1082.0	2060.22		20.0	38.136			24466.3		577088.0	85.7869	12.58		
Disposed														
End Inventory														
FY 2009														

TANK WASTE REMEDIATION SYSTEM

FY 1997 MYWP

WBS 1.1

Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
Begin Inventory						209900.0								
Received						136.26								
Generated	837.0	2689.57			28.136			24239.2		563462.0				
Reduced														
Transferred	837.0	2689.57			28.136			24239.2		563462.0	85.7869	12.58		
Disposed														
End Inventory														
FY 2010														
Begin Inventory						208500.0								
Received						136.26								
Generated	845.0	2680.04			28.136			23709.3		533560.0				
Reduced														
Transferred	845.0	2680.04			28.136			23709.3		533560.0	85.7869	14.8		
Disposed														
End Inventory														
FY 2011														
Begin Inventory						207100.0								
Received						136.26								
Generated	3019.0	3393.14			108.063			37242.2		1.0895e6				
Reduced														
Transferred	3019.0	3393.14			108.063			37242.2		1.0895e6	85.7869	14.8		
Disposed														
End Inventory														
FY 2012														
Begin Inventory						204500.0								
Received						136.26								
Generated	3029.0	2998.97			108.063			62693.0		739766.0				
Reduced														
Transferred	3029.0	2998.97			108.063			62693.0		739766.0	58.7742	19.536		
Disposed														
End Inventory														
FY 2013														
Begin Inventory						196300.0								
Received						136.26								
Generated	4230.0	3964.38		100.0	158.063			62189.0		[illegible]				
Reduced														
Transferred	4230.0	3964.38		100.0	158.063			62189.0		[illegible]	51.8549	16.872		
Disposed														
End Inventory														
FY 2014														
Begin Inventory						185200.0								
Received						136.26								
Generated	4275.0	4261.16		100.0	158.899			62000.0		606766.0				
Reduced														
Transferred	4275.0	4261.16		100.0	158.899			62000.0		606766.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2015														
Begin Inventory						169800.0								
Received						136.26								

TANK WASTE REMEDIATION SYSTEM

FY 1997 MYWP **WBS 1.1**

Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
Generated	4243.0	1958.14		100.0	158.899			62000.0		606766.0				
Reduced														
Transferred	4243.0	1958.14		100.0	158.899			62000.0		606766.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2016														
Begin Inventory						154400.0								
Received						136.26								
Generated	4304.0	2633.54		100.0	159.901			62000.0		606766.0				
Reduced														
Transferred	4304.0	2633.54		100.0	159.901			62000.0		606766.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2017														
Begin Inventory						138900.0								
Received						136.26								
Generated	4299.0	2135.82		100.0	159.901			62000.0		606766.0				
Reduced														
Transferred	4299.0	2135.82		100.0	159.901			62000.0		606766.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2018														
Begin Inventory						123500.0								
Received						136.26								
Generated	4199.0	1332.74		100.0	158.899			62000.0		606766.0				
Reduced														
Transferred	4199.0	1332.74		100.0	158.899			62000.0		606766.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2019														
Begin Inventory						108100.0								
Received						136.26								
Generated	4164.0	1063.14		100.0	158.063			62000.0		596819.0				
Reduced														
Transferred	4164.0	1063.14		100.0	158.063			62000.0		596819.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2020														
Begin Inventory						92670.0								
Received						136.26								
Generated	4132.0	1044.14		100.0	157.061			62000.0		596819.0				
Reduced														
Transferred	4132.0	1044.14		100.0	157.061			62000.0		596819.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2021														
Begin Inventory						77250.0								
Received						136.26								
Generated	4100.0	1022.73		100.0	156.081			62000.0		596819.0				
Reduced														

Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
Transferred	4100.0	1022.73		100.0	156.081			62000.0		596819.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2022														
Begin Inventory						65710.0								
Received						136.26								
Generated	1368.0	503.491		100.0	56.108			62568.0		596819.0				
Reduced														
Transferred	1368.0	503.491		100.0	56.108			62568.0		596819.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2023														
Begin Inventory						54170.0								
Received						136.26								
Generated	1336.0	478.12		100.0	55.106			62758.0		596819.0				
Reduced														
Transferred	1336.0	478.12		100.0	55.106			62758.0		596819.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2024														
Begin Inventory						42630.0								
Received						136.26								
Generated	1304.0	458.12		100.0	54.134			62758.0		596819.0				
Reduced														
Transferred	1304.0	458.12		100.0	54.134			62758.0		596819.0	51.8549	16.428		
Disposed														
End Inventory														
FY 2025														
Begin Inventory						31090.0								
Received						136.26								
Generated	1261.0	433.12		100.0	52.954			62758.0		596819.0				
Reduced														
Transferred	1261.0	433.12		100.0	52.954			62758.0		596819.0	51.6986	12.728		
Disposed														
End Inventory														
FY 2026														
Begin Inventory						19550.0								
Received						136.26								
Generated	1254.0	429.12		100.0	52.125			62758.0		596819.0				
Reduced														
Transferred	1254.0	429.12		100.0	52.125			62758.0		596819.0	51.6986	12.728		
Disposed														
End Inventory														
FY 2027														
Begin Inventory						8012.0								
Received						136.26								
Generated	1246.0	425.12		100.0	52.125			62000.0		596819.0				
Reduced														
Transferred	1246.0	425.12		100.0	52.125			62000.0		596819.0	51.6986	12.728		
Disposed														

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Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
End Inventory														
FY 2028														
Begin Inventory						2243.0								
Received						136.26								
Generated	1238.0	420.12		100.0	52.125			62000.0		596819.0				
Reduced														
Transferred	1238.0	420.12		100.0	52.125			62000.0		596819.0	51.5736	9.768		
Disposed														
End Inventory														
FY 2029														
Begin Inventory						2243.0								
Received														
Generated	31.0	19.0			0.972			15784.0		596819.0				
Reduced														
Transferred	31.0	19.0			0.972			15784.0		596819.0	51.2549	3.848		
Disposed														
End Inventory														
FY 2030														
Begin Inventory						2243.0								
Received														
Generated	23.0	14.0			0.972			378.5		596819.0				
Reduced														
Transferred	23.0	14.0			0.972			378.5		596819.0	51.2549	3.848		
Disposed														
End Inventory														
FY 2031														
Begin Inventory														
Received														
Generated	15.0	9.0			0.972			378.5		596819.0				
Reduced														
Transferred	15.0	9.0			0.972			378.5		596819.0	51.2549	3.848		
Disposed														
End Inventory														
FY 2032														
Begin Inventory														
Received														
Generated	8.0	5.0						378.5		596819.0				
Reduced														
Transferred	8.0	5.0						378.5		596819.0	51.2549	3.848		
Disposed														
End Inventory														
FY 2033														
Begin Inventory														
Received														
Generated								378.5		596819.0				
Reduced														
Transferred								378.5		596819.0	51.2549	3.848		
Disposed														
End Inventory														
FY 2034														

Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
Begin Inventory														
Received														
Generated								95.0		596819.0				
Reduced														
Transferred								95.0		596819.0		0.888		
Disposed														
End Inventory														
FY 2035														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred												0.888		
Disposed														
End Inventory														
FY 2036														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred											0.2875	6.808		
Disposed														
End Inventory														
FY 2037														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred											0.2875	6.808		
Disposed														
End Inventory														
FY 2038														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred											0.2875	6.808		
Disposed														
End Inventory														
FY 2039														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred											0.2875	6.808		
Disposed														
End Inventory														
FY 2040														
Begin Inventory														
Received														

Table 1.3.1-1 Waste Volume Inventory
(cubic meters) (Continued)

	LLW (SOL)	LLMW (SOL)	TRU	TRUM	HAZ	HLW	LLW (LIQ)	LLMW (LIQ)	Industrial Waste Water	Treated Liquid Effluent	Sanitary (LIQ)	Sanitary (SOL)	Asbestos	Special Case Waste
Generated														
Reduced														
Transferred											0.2875	6.808		
Disposed														
End Inventory														
FY 2041														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred											0.2875	6.808		
Disposed														
End Inventory														
FY 2042														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred											0.2875	6.808		
Disposed														
End Inventory														
FY 2043														
Begin Inventory														
Received														
Generated														
Reduced														
Transferred												1.776		
Disposed														
End Inventory														

1.3.2 Nuclear Materials (Special Nuclear Materials, Nuclear Fuel, Cesium capsules, Strontium capsules)

Table 1.3.2-1 contains the nuclear materials (Special Nuclear Materials, Nuclear Fuel, Cesium capsules, Strontium capsules) inventory and projection data. These data are used to track the nuclear materials through transfer, receipt, storage, and disposition. The Project schedule and budget reflect the plans for disposition of nuclear materials.

Table 1.3.2-1 Nuclear Materials Inventory

	Pu/HEU (Kg)	Irradiated Fuel (MTHM)	Cs Capsules (Number of capsules)	Sr Capsules (Number of capsules)	Unirradiated Uranium (MT-U)
FY 1997					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					

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Table 1.3.2-1 Nuclear Materials Inventory (Continued)

	Pu/HEU (Kg)	Irradiated Fuel (MTHM)	Cs Capsules (Number of capsules)	Sr Capsules (Number of capsules)	Unirradiated Uranium (MT-U)
Disposed					
End Inventory					
FY 1998					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 1999					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2000					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2001					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2002					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2003					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2004					
Begin Inventory					

Table 1.3.2-1 Nuclear Materials Inventory (Continued)

	Pu/HEU (Kg)	Irradiated Fuel (MTHM)	Cs Capsules (Number of capsules)	Sr Capsules (Number of capsules)	Unirradiated Uranium (MT-U)
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2005					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2006					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2007					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2008					
Begin Inventory					
Received					
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2009					
Begin Inventory					
Received			600.0	300.0	
Generated					
Reduced					
Transferred					
Disposed					
End Inventory					
FY 2010					
Begin Inventory					
Received			728.0	301.0	
Generated					
Reduced					
Transferred					

Table 1.3.2-1 Nuclear Materials Inventory (Continued)

	Pu/HEU (Kg)	Irradiated Fuel (MTHM)	Cs Capsules (Number of capsules)	Sr Capsules (Number of capsules)	Unirradiated Uranium (MT-U)
Disposed					
End Inventory					

1.3.3 Facilities (Excess, Deactivated)

Table 1.3.3-1 contains the facility forecasting data (facility deactivation, decontamination and decommissioning, and closure). The facility data are used to track the facility through acquisition, operations and maintenance, and disposal. The Project schedule and budget reflect the plans for disposition of excess and deactivated facilities.

Table 1.3.3-1 Facility Inventory

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	204AF	Railcar Unloading Facility		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	209A	INSTRUMENT AIR COMPRESSOR		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	209E	209-E Critical Mass Laboratory		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	213W	WASTE COMPACTOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	216A271	VALVE CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	220A	STEAM CONDENSATE SAMPLER BLDG		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2400E	DRY MATERIAL FACILITY CONTROL ROOM		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2402EA	DMF Unloading Facility		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2403E	DMRHF DRY BLENDED STORAGE/TRUCK LO		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2403EA	COMPRESSOR LEANTO		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2404E	DMRHF COMPRESSOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241A	A-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		

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Table 1.3.3-1 Facility Inventory (Continued)

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	241A271	TANK FARM CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241A271A	INSTRUMENT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241A401	TANK FARM CONDENSER HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241A701	TANK FARM COMPRESSOR HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241A702	TANK FARM FAN HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AN	AN-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AN271	INSTRUMENT CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AN273	COMPRESSOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AN274	MIXER PUMP CONTROL ROOM		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AP	AP-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AP271	TANK FARM INSTRUMENT BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AP273	COMPRESSOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AP801	WATER SERVICE BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AW	AW-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AW271	TANK FARM CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AW273	COMPRESSOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AX	AX-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AX501	CONDENSATE VALVE PIT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AX801A	TANK FARM CONTROL HOUSE, NORTH		Tank Waste Remediation System	Tank Waste Remediation System		

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Table 1.3.3-1 Facility Inventory (Continued)

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	241AX801B	TANK FARM CONTROL HOUSE, SOUTH		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AY	AY-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AY401	VENT RECIRCULATION EQUIPMENT VAULT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AY402	VENT RECIRCULATION EQUIPMENT VAULT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AY51	ELECTRICAL EQUIPMENT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AY51A	SEISMIC SHUTDOWN SYS 1A		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AY51B	SEISMIC SHUTDOWN SYS 1B		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AY801	TANK FARM INSTRUMENT HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ	AZ-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ156	MIXER PUMP SPEED CONTROL		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ271	CONTROL ROOM		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ401	VENT RECIRCULATION EQUIPMENT VAULT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ402	VENT RECIRCULATION EQUIPMENT VAULT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ701	DIESEL GENERATOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ702	WASTE TANK VENTILATION		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ801	EP BLDG		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241AZ801A	241AZ801A		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241B	B-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241B701	INSTRUMENT AIR COMPRESSOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		

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Table 1.3.3-1 Facility Inventory (Continued)

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	241BX	BX-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241BY254	CONTROL HOUSE AND COMPRESSOR, ITS2		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241BY301	CONTROL HOUSE IN TANK SOLIDIFICATI		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241BY302	COMPRESSOR HOUSE, ITS1		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241BY302A	COMPRESSED AIR STATION		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241C	C-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241C51	ELECTRICAL EQUIPMENT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241C51A	SEISMIC SHUTDOWN SYS 1A		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241C51B	SEISMIC SHUTDOWN SYS 1B		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241C73	C-FARM SERVICE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241C90	AIR COMPRESSOR FACILITY		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241C91			Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241CR271	WASTE DISPOSAL CONTROL HOUSE, 241C		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241S	S-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241S271	ELECTRICAL AND INSTRUMENT CONTROL		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SX	SX-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SX271	TANK FARM CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SX281	EMERGENCY COOLING WATER PUMP HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SX701	WASTE DISPOSAL CONDENSER HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		

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Table 1.3.3-1 Facility Inventory (Continued)

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	241SY	SY-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SY271	INSTRUMENT AND ELECTRICAL CONTROL		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SY272	ELECTRICAL BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SY273	BACKUP GENERATOR		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241SY701	COMPRESSOR HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241T	T-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241T601	CHEMICAL MAKE UP BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241T701	INSTRUMENT AIR COMPRESSOR HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241TX	TX-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241TX701	INSTRUMENT AIR COMPRESSOR HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241TY	TY-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241U	U-TANK FARM AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241U271	U FARM CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241U701	INSTRUMENT AIR COMPRESSOR HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	241UR	WASTE METAL RECOVERY FACILITIES, U		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242A	242A Evaporator		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242A702	TURBINE BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242AB1	WATERSERVICE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242AB			Tank Waste Remediation System	Tank Waste Remediation System		

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Table 1.3.3-1 Facility Inventory (Continued)

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	242S	242S Evaporator		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242S702	TURBINE BUILDING, VENTILATION		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242T	242T Evaporator		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242T601	CONTROL FACILITY		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242TA	WASTE RECEIVING VAULT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242TB	VENT HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	242TC	TANK FARM MICROCOMPUTER EQUIPMENT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	243G	GROUT FACILITY		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	243G12	GPF MOBILE CONTROL ROOM		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	243G2	GPF DRY BLEND HANDLING & FEED MODUL		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	243G3	GPF ADDITIVES MODULE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	243G5	GPF STANDBY GENERATOR		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	243G6	GPF ELECTRICAL EQUIPMENT ROOM		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	243G9	GPF ELECTRICAL SUBSTATION		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	244A	WASTE VAULT AND INSTRUMENT HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	244AR	AR VAULT AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	244AR701	EMERGENCY GENERATOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	244AR715	COMPRESSOR BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	244CR	CR VAULT AND SUPPORT STRUCTURES		Tank Waste Remediation System	Tank Waste Remediation System		

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Table 1.3.3-1 Facility Inventory (Continued)

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	244S	WASTE LIFT STATION (VAULT)		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	244S2 1	INSTRUMENT CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	244U1	INSTRUMENT CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	254BY	CONTROL HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2701H	CONSTRUCTION WAREHOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2703E	CHEMICAL ENGINEERING LABORATORY		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2704H	TWRS OFFICE BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2707A	CHANGE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2707A	CHANGE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2707S	CHANGE HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2712B	ELECTRICAL INSTRUMENTATION BUILDIN		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2713W	REGULATED GARAGE AND HEAVY EQUIPME		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2714A	SLUDGE VAULT GENERAL STORAGE BUILD		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2715A			Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	271CF	SERVICE AND OFFICE BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2724S	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2724S	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2724T	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2724T	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		

Table 1.3.3-1 Facility Inventory (Continued)

Complex	Facility	Facility Description	Acquisition Project	M&O Project	Deactivation Project	D&D Project	Closure Project
TWRS	2724TXA	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2724TXB	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2724U	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2724UA	RADIATION MONITORING AND PROTECTIV		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2727WA	SODIUM STORAGE BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	272A	MAINTENANCE STORAGE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	272AW	TANK FARM OPERATIONS SUPPORT FACIL		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	272AW10	CALIBRATION SOURCE STORAGE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	272WA	TANK FARM SUPPORT FACILITY		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	273EA			Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	274AW	OFFICE BUILDING		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	278AW	TANK FARM DOCUMENT CONTROL CENTER		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	278WA	TANK FARM DOCUMENT CONTROL CENTER		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	2905R	VALVE HOUSE		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	291AR	EXHAUST AIR FILTER STACK BLDG.		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	292AR	VESSEL VENT		Tank Waste Remediation System	Tank Waste Remediation System		
TWRS	TC272HV	WAREHOUSE		Tank Waste Remediation System	Tank Waste Remediation System		

1.3.4 Infrastructure (Power, Steam, Water, Roads, Railroad, Sanitary Waste)

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This section contains the forecasting data for infrastructure support. These data are used to ensure the required infrastructure is available when it is needed. Table 1.3.4-1 provides the nominal, best estimate of infrastructure needs. Table 1.3.4-2 provides an estimate of the maximum probable need. The Project schedule and budget reflect the services (infrastructure) that are necessary to achieve the project mission.

Table 1.3.4-1 Infrastructure Requirements - Average Demand

Infrastructure Type	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006-2070	Units
Allocated Land											
Analytical Laboratory Services											
Bioassay and Dosimetry Services	6020.0	6020.0	6020.0	4839.0	3742.0	3766.0	3810.0	3810.0	3810.0	73.8684	SAMPLES/YR
Biological Laboratory Services											
Building Maintenance	66500.0	66500.0	66500.0	69350.0	69800.0	73400.0	80000.0	80000.0	80000.0	11172.4	SQ. FT.
Clean Laundry	285000.0	285000.0	245000.0	262900.0	216200.0	94600.0	143000.0	143000.0	143000.0	81255.3	LBS/YR
Custodial Services	113200.0	111550.0	110050.0	96250.0	85800.0	89400.0	95550.0	95400.0	95400.0	11314.5	SQ. FT.
Data (HLAN) Transmission	720.0	607.0	565.0	540.0	513.0	516.0	556.0	555.0	555.0	75.9737	NO. OF PCs
Development Laboratory Services											
Electricity	9324.9	9324.9	8993.6	75743.6	75493.6	342744.0	341546.0	341546.0	341546.0	550433.0	MW-HR/YR
Energy Management Services											
Environmental Molecular Science Lab Services											
Fab Shop Services	11000.0	11000.0	11000.0	7000.0	6500.0	8300.0	8300.0	8300.0	8300.0	1800.0	LABOR-HR/YR
Guaranteed Ride Home	91.0	91.0	91.0	133.5	146.0	206.0	316.0	316.0	316.0	184.671	PASSENGERS/YR
Hanford Road Sys. Heavy Traffic				52000.0	52000.0	4380.0	4380.0	4380.0	4380.0	21373.0	TRUCK LOADS/YR
Heavy Equipment	450.0	450.0	450.0	250.0	75.0	75.0	75.0	75.0	75.0		EQUIP-DAYS/YR
Heavy Trucks	1320.0	1320.0	1320.0	820.0	120.0	17625.0	17625.0	17625.0	17625.0	17520.0	VEHICLE-HR/YR
In-Field Laboratory Services											
Industrial Hygiene Services	1000.0	1000.0	1000.0	800.0	600.0	800.0	800.0	800.0	800.0		SAMPLES/YR
Lifting (Cranes)	496.0	496.0	496.0	246.0	196.0	158.0	158.0	158.0	158.0		CRANE DAYS/YR
Non-rad Standards (Calibrations)				120.0	120.0	120.0	120.0	120.0	120.0	120.0	CALIBRATIONS/YR
Office Space (Leased)	7800.0	6750.0	5700.0	4500.0	3900.0	3750.0	3600.0	3600.0	3600.0	3600.0	SQ. FT.
Office Space (Infrastructure Owned)	55000.0	55000.0	55000.0	40000.0	30000.0	30000.0	30000.0	30000.0	30000.0		SQ. FT.
Office Space (Program Owned)	88200.0	86550.0	85050.0	86250.0	85800.0	89400.0	95550.0	95400.0	95400.0	11314.5	SQ. FT.
Pager Service	186.0	186.0	156.0	141.7	127.6	124.8	138.0	138.0	138.0	22.6868	NO. OF PAGERS
Potable Water	18.9	18.5	18.5	25.1976	25.1976	52.1131	52.3882	52.3882	52.3882	42.5324	MGAL/YR
Radioactive Standards (Calibrations)	7200.0	7200.0	7200.0	6320.0	5570.0	5570.0	5570.0	5570.0	5570.0	120.0	CALIBRATIONS/YR
Rail Transportation											
Raw Water				30.2774	30.2774	151.387	151.387	151.387	151.387	266.588	MGAL/YR
Sedans/Light Trucks	82.0	82.0	74.0	70.9	66.2	68.6	73.0	73.0	73.0	7.38684	NO. OF VEHICLES
Steam	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0		LBS/YR
Storage Space (Infrastructure Owned)	5500.0	5500.0	5500.0	4500.0	3000.0	3000.0	3000.0	3000.0	3000.0		SQ. FT.
Storage Space (Leased)											
Storage Space (Program Owned)	4200.0	4200.0	4200.0	4200.0	4200.0	14200.0	14200.0	14200.0	14200.0	10000.0	SQ. FT.
Taxi Service	21325.0	21325.0	21175.0	21212.5	21350.0	21400.0	21950.0	21950.0	21950.0	1142.43	PASSENGERS/YR
Video Communication	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	HR/YR
Voice (Telephone) Communication	795.0	777.0	745.0	720.0	688.0	686.0	726.0	725.0	725.0	76.2368	NO. OF PHONES

Table 1.3.4-2 Infrastructure Requirements - Peak Demand

Infrastructure Type	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006-2070	Units
Allocated Land											
Analytical Laboratory Services											
Bioassay and Dosimetry Services	8420.0	8420.0	8420.0	7239.0	8142.0	8166.0	8210.0	8210.0	8210.0	73.8684	SAMPLES/YR
Biological Laboratory Services											
Building Maintenance	66500.0	66500.0	66500.0	69350.0	69800.0	73400.0	80000.0	80000.0	80000.0	11172.4	SQ. FT.
Clean Laundry	285000.0	285000.0	245000.0	262900.0	216200.0	94600.0	143000.0	143000.0	143000.0	81255.3	LBS/YR
Custodial Services	113200.0	111550.0	110050.0	96250.0	85800.0	89400.0	95550.0	95400.0	95400.0	11314.5	SQ. FT.
Data (HLAN) Transmission	720.0	607.0	565.0	540.0	513.0	516.0	556.0	555.0	555.0	75.9737	NO. OF PCs
Development Laboratory Services											
Electricity	16815.0	16815.0	16447.1	82585.1	82366.1	348346.0	346375.0	346375.0	346375.0	550365.0	MW-HR/YR
Energy Management Services											

Table 1.3.4-2 Infrastructure Requirements - Peak Demand (Continued)

Infrastructure Type	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006-2070	Units
Environmental Molecular Science Lab Services											
Fab Shop Services	12000.0	12000.0	12000.0	7200.0	6600.0	8300.0	8300.0	8300.0	8300.0	1800.0	LABOR-HR/YR
Guaranteed Ride Home	410.6	410.6	410.6	750.05	812.1	1245.5	2048.5	2048.5	2048.5	1348.1	PASSENGERS/YR
Hanford Road Sys. Heavy Traffic				102200.0	102200.0	8760.0	8760.0	8760.0	8760.0	42720.9	TRUCK LOADS/YR
Heavy Equipment	450.0	450.0	450.0	250.0	75.0	75.0	75.0	75.0	75.0		EQUIP-DAYS/YR
Heavy Trucks	5910.0	5910.0	5910.0	4450.0	1530.0	17625.0	17625.0	17625.0	17625.0	17520.0	VEHICLE-HR/YR
In-Field Laboratory Services											
Industrial Hygiene Services	1560.0	1560.0	1560.0	1260.0	1260.0	1260.0	1260.0	1260.0	1260.0		SAMPLES/YR
Lifting (Cranes)	496.0	496.0	496.0	246.0	196.0	158.0	158.0	158.0	158.0		CRANE DAYS/YR
Non-rad Standards (Calibrations)				120.0	120.0	120.0	120.0	120.0	120.0	120.0	CALIBRATIONS/YR
Office Space (Leased)	7800.0	6750.0	5700.0	4500.0	3900.0	3750.0	3600.0	3600.0	3600.0	3600.0	SQ. FT.
Office Space (Infrastructure Owned)	55000.0	55000.0	55000.0	40000.0	30000.0	30000.0	30000.0	30000.0	30000.0		SQ. FT.
Office Space (Program Owned)	88200.0	86550.0	85050.0	86250.0	85800.0	89400.0	95550.0	95400.0	95400.0	11314.5	SQ. FT.
Pager Service	186.0	186.0	156.0	141.7	127.6	124.8	138.0	138.0	138.0	22.6868	NO. OF PAGERS
Potable Water	115.364	89.084	89.084	132.68	132.68	141.502	141.502	141.502	141.502	83.1659	MGAL/YR
Radioactive Standards (Calibrations)	7200.0	7200.0	7200.0	6720.0	7020.0	7020.0	7020.0	7020.0	7020.0	120.0	CALIBRATIONS/YR
Rail Transportation											
Raw Water				30.2723	30.2723	151.362	151.362	151.362	151.362	256.355	MGAL/YR
Sedans/Light Trucks	82.0	82.0	74.0	70.9	66.2	68.6	73.0	73.0	73.0	7.38684	NO. OF VEHICLES
Steam	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0	3656.0		LBS/YR
Storage Space (Infrastructure Owned)	5500.0	5500.0	5500.0	4500.0	3000.0	3000.0	3000.0	3000.0	3000.0		SQ. FT.
Storage Space (Leased)											
Storage Space (Program Owned)	4200.0	4200.0	4200.0	4200.0	4200.0	14200.0	14200.0	14200.0	14200.0	10000.0	SQ. FT.
Taxi Service	41540.0	41540.0	40810.0	23226.7	41211.5	42379.5	43182.5	43182.5	43182.5	1567.18	PASSENGERS/YR
Video Communication	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	HR/YR
Voice (Telephone) Communication	795.0	777.0	745.0	720.0	688.0	686.0	726.0	725.0	725.0	76.2368	NO. OF PHONES

1.4 DRIVERS

This section identifies the documents that are sources of project requirements, including Key and Regulatory Drivers.

1.4.1 Key Drivers

Table 1.4.1-1 lists the source documents that tend to drive the project mission (e.g. Mission Direction Document, Tri-Party Agreement).

Table 1.4.1-1 Key Drivers

Name	Title
DOE Order 5633.3B	Control and Accountability of Nuclear Materials, 2/12/93
DOE/RL-96-14	Updated Draft Mission Direction Document, June 1996
Tri-Party Agreement	Hanford Federal Facility Agreement and Consent Order: 89-10, Rev. 1

1.4.2 Other Drivers

Table 1.4.2-1 contains the source documents that must be followed as the project mission is accomplished.

Table 1.4.2-2 Other Drivers

Name	Title
10 CFR 830.120	
"Bader" Letter: 95-PRI-073, "Tank Waste Remediation System (TWRS) Guidance for Update of the Multi-Year Program Plan (MYPP) - Supplemental Guidance for the Disposal Program", rom C. P. Bader to A. L. Trejo, July 26, 1995	
10 CFR 1046	Physical Protection of Security Interests
10 CFR 1047	Limited Arrest Authority and Use of Force by Protective Force Employees
10 CFR 61	Licensing Requirements for Land Disposal of Radioactive Waste
10 CFR 71	Packaging and Transportation of Radioactive Material
10 CFR 835	Occupational Radiation Protection
10 CFR 962	Radioactive Waste - Byproduct Material
29 CFR 1904	Recording and Reporting Occupational Injuries and Illness
29 CFR 1910	Occupational Safety and Health Standards
40 CFR 191	Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 61	National Emissions Standards for Hazardous Air Pollutants
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
40 CFR Chapter I, Parts 260-299	Protection of Environment, 1992
49 CFR 100 to 179	DOT Hazardous Materials Transportation Regulations
49 CFR 174	Carriage by Rail
49 CFR 177	Carriage by Public Highway
49 CFR, Subtitle B, Parts 100 to 399	Other Regulations Relating to Transportation
53 FR 12449 : Hanford High-Level, TRU, and Tank Waste EIS Record of Decision	
A Reassessment of Hanford Strategic Thinking	A Reassessment of Hanford Strategic Thinking, Discussion Materials, Draft, Rev 2, September 1995
ANSI Z88.2-1992	American National Standard for Respiratory Protection, 8/6/92
ANSI/ANS-3.2-88	
ASME-NQA-1-1994-IA	
Dangerous Goods Regulations, 1994	International Air Transport Association (IATA)
DOE M 5632.1C-1	Manual for Protection and Control of Safeguards and Security Interests, 7/15/94
DOE Order 1240.2B	Unclassified and Assignments by Foreign Nationals, 8/21/92
DOE Order 1324.2A	Records Disposition, 4/9/92
DOE Order 1360.2B	Unclassified Computer Security Program, 5/18/92
DOE Order 1540.1	Materials Transportation and Traffic Management
DOE Order 1540.1A	Materials Transportation and Traffic Management, 1992
DOE Order 1540.2	Hazardous Material Packaging for Transport - Administrative Procedures, Change 1, 1988
DOE Order 4330.4B	Maintenance Management Program

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
DOE Order 5000.3B, Change 1	Occurrence Reporting and Processing of Operations Information
DOE Order 5400.5	Radiation Protection of the Public and the Environment
DOE Order 5400.9	Sealed Radioactive Source Accountability, 2/8/90
DOE Order 5480.10	Contractor Industrial Hygiene Program
DOE Order 5480.11	Radiation Protection for Occupational Workers
DOE Order 5480.19	Conduct of Operations Requirements for DOE Facilities
DOE Order 5480.20	
DOE Order 5480.20A	Personnel Selection, Qualification, Training, and Staffing at DOE Reactor and Non-Reactor Nuclear Facilities
DOE Order 5480.21	Unreviewed Safety Questions
DOE Order 5480.22	Technical Safety Requirements
DOE Order 5480.23	Nuclear Safety Analysis Report
DOE Order 5480.24	Nuclear Criticality Safety
DOE Order 5480.3	Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Waste, 1985
DOE Order 5480.4	Environmental Protection, Safety and Health Protection
DOE Order 5480.5	Safety Of Nuclear Facilities
DOE Order 5480.7	Fire Protection
DOE Order 5480.7A	Fire Protection
DOE Order 5480.8A	Contractor Occupational Medical Program, 6/26/92
DOE Order 5483.1A	Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities
DOE Order 5484.1	Environmental Protection, Safety, and Health Protection Information Reporting Requirements
DOE Order 5500	
DOE Order 5500.10	Emergency Readiness Assurance Program, 4/30/91
DOE Order 5500.2B	Emergency Categories, Classes, and Notification and Reporting Requirements, 4/30/91
DOE Order 5500.3A	Planning and Preparedness for Operational Emergencies
DOE Order 5630.11B	Safeguards and Security Program, 8/2/94
DOE Order 5630.13A	Master Safeguards and Security Agreements, 6/8/92
DOE Order 5630.16A	Safeguards and Security Acceptance and Validation Testing Program, 6/3/93
DOE Order 5631.1C	Safeguards and Security Awareness Program, 5/4/94
DOE Order 5631.2C	Personnel Security Program, 2/17/94
DOE Order 5631.4A	Control of Classified Visits, 7/8/92
DOE Order 5632.1C	Protection and Control of Safeguards and Security Interests, 7/15/94
DOE Order 5632.7A	Protective Force Program, 4/13/94
DOE Order 5634.1B	Facility Approvals, Security Surveys, and Nuclear Materials Surveys, 9/15/92
DOE Order 5634.3	Foreign Ownership, Control, or Influence Program, 6/14/93
DOE Order 5639.1	Information Security Program
DOE Order 5639.3	Violation of Laws, Losses, and Incidents of Security Concern, 9/15/92
DOE Order 5650.2B	Identification of Classified Information
DOE Order 5700	
DOE Order 5700.6C	Quality Assurance, 8/21/91
DOE Order 5820.2A	Radioactive Waste Management
DOE Order 6430	
DOE Order 6430.1A	General Design Criteria
DOE-95-SWT-186	
DOE-EH0256T	DOE radiological Control Manual, 4/30/94
DOE-STD-1073-93	DOE Standard Guide for Operational Configuration Management Program
DOE/RL 93-08	Hanford Mission Plan, Volume 1, Site Guidance
DOE/RL-91-28 Rev 1	Hanford Facility Dangerous Waste Permit Application, General Information, Appendix 7A, Hanford Facility Contingency Plan, May 93
DOE/RW-0351P	Waste Acceptance System Requirements Document

Table 1.4.2-2 Other Drivers (Continued)

Name	Title
DOE/WIPP-069, Rev.4	Waste Acceptance Criteria for the Waste Isolation Pilot Plant
DOE/WIPP-069, rev.4	
EM-WAPS	Waste Acceptance Product Specifications for Vitrified High-Level Waste Forms
ETF State Discharge Permit	
Federal Register, Vol. 54, No. 16	Thursday, January 26, 1989/Notices, Department of Labor, Occupational Safety and Health Administration, Issuance of Voluntary Guidelines
Hanford Site Radiological Control Manual	
Hanford Site Weather Bureau Data	
RCW 70.136	Hazardous Materials Incidents
RLID 5480.7	Fire Protection
RLID 5630.3A	Protection of Hanford Facilities Against Radiological and Toxicological Sabotage
RLID 5633.3	Control and Accountability of Nuclear Materials at RL
RLID 5637.1	Classified Computer Security Program, 10/18/88
SRID, 10 Packaging anc Transportation	
SRID, 11 Quality Assurance	
SRID, 12 Radiation Protection	
SRID, 13 Safeguards and Security	
SRID, 14 Training and Qualification	
SRID, 18 Emergency Management	
SRID, 2 Environmental Protection	
SRID, 4 Fire Protection	
SRID, 8 Occupational Safety and Health	
States of Washington and Oregon: Denial of Petition for Rulemaking	
The Future For Hanford Uses and Cleanup	
TWRS Mission Analysis	
WAC 173-303	Dangerous Waste Regulations
WAC 173-307	Plans
WAC 173-400	General Regulations for Air Pollution Sources
WAC 173-460	Control for New Sources of Toxic Air Pollutants
WAC 173-480	Ambient Air Quality Standards and Emission Limits for Radionuclides
WAC 246-220	
WAC 246-247	Radiation Protection - Air Emissions
WAC 246-976	Emergency Medical Services and Trauma Care Centers
WAC 296-45	Safety Standards--Electrical Workers
WHC-CM-7-5	Environmental Compliance
WHC-EP-0063	
WHC-EP-0182	Tank Farm Surveillance and Waste Status Summary Report
WHC-EP-0750	Standards and Requirements Identification Document

1.5 FUNCTIONAL DEFINITIONS

TANK WASTE REMEDIATION SYSTEM

FY 1997 MYWP **WBS 1.1**

This section contains the Hanford Site Technical Baseline functions that are assigned to the project. It describes the project work in terms consistent with the Hanford Site Technical Baseline. The 'number' column in this section refers to the unique function number for the listed function as contained in the site technical baseline database maintained by Site Systems Engineering.

1.5.1 Manage Tank Waste Remediation System

1.5.2 Acquire Tank Waste Remediation System

1.5.3 Operate & Maintain Tank Waste Remediation System

Table 1.5.3-1 Operate & Maintain Tank Waste Remediation System Functions

Number	Name / Description
4.2	**Remediate Tank Waste** Store, treat, and immobilize highly radioactive Hanford waste (existing and future tank waste and the strontium and cesium capsules) in an environmentally sound, safe, and cost effective manner.
4.2.1	**Manage Tank Waste (MTW)** Manage existing tank waste (e.g., waste contained in DSTs, SSTs, and miscellaneous tanks), and new tank waste from Site level interfaces (e.g., facility operations, D&D, ER), that is not the product of retrieval for final processing. Manage Tank Waste will be limited to the storage of waste prior to retrieval for processing; waste characterization; transfer of supernatents for the resolution of safety issues, optimization of tank space, volume reduction, interim stabilization, and\or emergency pumping; concentration of tank waste to support tank space utilization. This function also includes treatment/preparation of liquid, gaseous, and solid wastes generated during the management of tank waste as necessary to meet criteria for release to the environment or acceptance criteria of recieving functions. This will continue until all waste is retrieved for final processing and waste is no longer received from external sources to Remediate Tank Waste.
4.2.1.1	**Store Managed Tank Waste** Contain and monitor SST waste, and waste in miscellaneous tanks. Receive, contain, and monitor DST waste that is not the product of retrieval for final processing. Mitigate / resolve safety issues, and the treat / prepare liquid, gaseous, and solid wastes generated during the storage of tank waste as necessary to meet the criteria for release to the environment or acceptance criteria of recieving functions.
4.2.1.2	**Characterize Waste** The Tank Waste Remediation System (TWRS) Characterize Waste function provides information about the waste contents in underground storage waste storage tanks (149 single-shell tanks, 28 double-shell tanks and 61 miscellaneous underground storage tanks) and supplies sample material to support the safe storage, retrieval, processing, and disposal of the waste. Tank waste characterization is the process that describes waste in terms of its physical, chemical, and radiological compositions, as well as the distribution of the wastes between tanks and within tanks. A goal of the Characterize Waste function is to provide data of known and sufficient quality and quantity to enable necessary, defensible programmatic decisions to be made and to assist in the reduction of safety and programmatic (e.g., cost/schedule) risks. The process of characterizing tank wastes involves defining and prioritizing issues concerning wastes, defining and integrating information needs for making decisions that will help resolve program issues, determining and evaluating sources of required information, selecting an approach to obtain the information, obtaining new information if needed, and reporting the results of this process. Each interfacing function identifies issues, information, and sample material needs and the tanks which must be characterized using the Data Quality Objectives (DQO) process. Interfacing functions identify criteria by which all tanks can be prioritized with respect to each issue. The Characterize Waste function then integrates the needs and tank priorities across various program customers to define an overall plan for obtaining information and/or sample material. Specific tank characterization efforts are considered complete only when all currently identified information or sample material needs have been met. Characterization is an iterative process since the domain of the tank wastes is dynamic and highly complex. Because characterization is dynamic and iterative, new paths of inquiry may develop leading to the need to obtain more information in specific areas. According to overall TWRS summary plans, characterization activities may extend until the completion of retrieval and disposal activities for all designated tank wastes.

Table 1.5.3-1 Operate & Maintain Tank Waste Remediation System Functions (Continued)

Number	Name / Description
4.2.1.3	**Transfer Managed Tank Waste** Transfer supernatant and interstitial liquids which have not been pretreated from SSTs, DSTs, and active miscellaneous tanks to DSTs for storage as necessary to resolve safety concerns, manage tank space or provide feed for the Concentrate Waste function. Also included are the receipt and transfer of liquid wastes to DST storage from: (a) generators external to the Remediate Tank Waste function; and (b) the 242-A Evaporator. This function also includes treatment/preparation of liquid, gaseous, and solid wastes generated as a result of the transfer of tank waste as necessary to meet criteria for release to the environment or acceptance criteria for recieving functions. No additional condition of waste will be performed by this function in-tank or during transfers. Active miscellaneous tank typically serve as catch tanks for diversion boxes and pipe encasements for active transfer lines and are identified in WHC-EP-0182-78, Table H-1. Transfer Managed Tank Waste is ongoing and will continue as long as liquid wastes are accepted from external generators and waste remains in storage awaiting retrieval for treatment and disposal by the Process Waste function.
4.2.1.4	**Concentrate Waste** Remove excess water from supernatant stored in DSTs to maximize utilization of available tank space. This function also includes treatment/preparation of liquid, gaseous, and solid wastes generated during the concentration of tank waste as necessary to meet environmental release criteria and acceptance criteria for recieving functions. Liquid effluents will be released to Manage Aqueous Waste, for disposal or additional treament /disposal as necessary. Function is currently being performed and will continue until low level waste disposal activities eliminate the need for concentration.
4.2.2	**Retrieve Tank Waste** The removal of wastes (i.e., liquids, saltcake, sludges, in-tank hardware, and discrete sources) from underground storage tanks (USTs) and the transfer of these wastes to the Process Waste function. Wastes will be removed to the extent required for turnover of the tanks for closure. This function does not include the removal of previously retrieved waste from the DSTs (see the Store In-Process Waste function). This function also includes treatment/preparation of liquid, gaseous, and solid waste generated during retrieval of tank wastes.
4.2.2.1	**Retrieve SST Waste** The removal of wastes (i.e., saltcake, sludges, in-tank hardware, and discrete sources) from single shell tanks (SSTs) and the transfer of these wastes to the Store In-Process Waste function. Wastes will be removed to the extent required for turnover of the tanks to closure.
4.2.2.2	**Retrieve DST Waste** The removal of wastes (i.e., liquids, saltcake, sludges, and in-tank hardware) from double shell tanks (DSTs) and the transfer of these wastes to the Store In-Process Waste function. Wastes will be removed to the extent required for turnover of the tanks to closure. This function does not include the removal of previously retrieved waste from the DSTs (see the Store In-Process Waste function).
4.2.2.3	**Remediate Ancillary Equipment and Systems** Wastes will be removed from the Ancillary Equipment and Systems to the extent required for closure and transferred to the Store In-Process Waste function. Ancillary Equipment and Systems include MUST's, double-contained receiver tanks, underground waste transfer pipelines, HVAC ducts, and exhausters, diversion boxes, pump pits, catch tanks, and other equipment associated with Operable Units.
4.2.3	**Process Waste** Process tank waste (including DST waste, SST waste, miscellaneous underground storage tanks that contain HLW), and prepare cesium/strontium capsules for disposal. This includes in-process waste transfer and storage, any pretreatment (if required), immobilization of low-level wastes, immobilization and certification of immobilized high-level wastes for acceptance into the Civilian Radioactive Waste Management System (CRWMS). Also included is the treatment/preparation of gaseous and liquid effluents and solid wastes generated during the processing of tank waste. Wastes excluded from processing by this function are the underground storage tanks and support structures, production reactor fuels, radioactive materials at reactors, disposal facilities, transfer lines, cribs, ponds, and ditches. The Process Waste function is initiated when storage of in-process waste for treatment begins and will continue until the last IHLW/ITRU package leaves the immobilization and the treatment facilities are turned over for decontamination and decommissioning (D&D).
4.2.3.1	**Store In-Process Waste** Receive, store, monitor, condition, and transfer previously retrieved DST/SST/MUST wastes or pretreated wastes. This includes the mobilization/suspension of tank waste solids and liquid forms of separated radionuclides (Cs, Tc, Sr, and TRU), minor chemical adjustments, in-tank blending and feed staging of wastes, but excludes in-tank waste pretreatment activities (e.g., in-tank sludge washing). This function also includes treatment/preparation of liquid, gaseous, and solid waste generated during storage of in-process wastes. Storage of in-process waste will begin when waste retrieval for treatment begins and will continue until all pretreated waste has been transferred for treatment/immobilization.

Table 1.5.3-1 Operate & Maintain Tank Waste Remediation System Functions (Continued)

Number	Name / Description
4.2.3.2	**Pretreat Sludges / Solids** Pretreatment of sludges/solids consists of (1) initial solids-liquids separation, (2) preferential separation of soluble non-radioactive components (e.g. Na, Al, Cr, P04) from sludges, (3) water washing of sludges to separate dissolved compounds in the interstitial liquid trapped in the sludges, and (4) separation of supernatants and wash solutions from the sludges/solids. The remaining high-level waste solids are conditioned for in-process waste storage and/or blending for feed to HLW immobilization. Pretreatment will begin when tank waste is retrieved and transferred from existing DSTs, SSTs, and Ancillary Equipment and Systems and will continue until all sludges/solids have been prepared as feed for HLW immobilization.
4.2.3.4	**Treat and Immobilize Low-Activity Waste** Receive, treat and immobilize the low-activity waste solutions. Transfer the immobilized waste to the interim storage or disposal facility. This function also includes treatment/preparation of liquid, gaseous, and solid waste generated during immobilization/disposal of LAW.
4.2.3.5	**Immobilize HLW / TRU Waste** Receive and immobilize pretreated HLW and TRU waste, seal the immobilized waste into primary containers, decontaminate the container outer surfaces, and test the integrity of the sealed containers. Load the immobilized HLW/TRU waste in transport mechanism for transfer to the disposal function. This function also includes treatment/preparation of liquid, gaseous, and solid wastes generated during immobilization of HLW/TRU waste. Note: DOE/WIPP requirements apply only if a decision is made to dispose of ITRU waste at WIPP.
4.2.3.6	**Prepare Cs/Sr Capsules for Disposal** Receive Cs/Sr capsules from storage and prepare capsules for interim storage at Hanford and disposal offsite at geologic repository. This function also includes treatment and preparation of liquid, gaseous, and solid wastes generated during preparation of capsules for disposal.
4.2.4	**Dispose Waste** The Dispose Waste Function stores solidified waste; disposes immobilized low-level waste (ILLW) in a safe, efficient and environmentally acceptable manner; and closes tank farm operable units. Solidified waste includes IHLW glass products from a HLW vitrification facility, cesium/strontium capsules that have been processed for disposal, immobilized tank TRU waste, and solidified separated radionuclides. The IHLW will be stored on a temporary basis until the Department of Energy -Office of Civilian Radioactive Waste Management (DOE-OCRWM) is ready to begin shipping it to the geologic repository. If immobilized TRU waste is shipped to this function, it will be shipped to the WIPP. The solidified separated radionuclides will be returned to Immobilized HLW function. The ILLW will also be stored on a temporary basis until the Dispose Waste Function is ready to begin disposal actions. Operable units with closure ready tanks are closed in compliance with WAC 173-303 regulations for hazardous constituents, and NRC (if HLW), DOE, and EPA regulations and DOE Orders for radioactive constituents.
4.2.4.1	**Interim Store Solidified HLW and TRU Waste** Receive sealed containers of immobilized high-level waste (IHLW) and immobilized transuranic waste (ITRU) from the HLW immobilization facility, dispositioned cesium/strontium (Cs/Sr) capsules from the Cs/Sr capsule disposal preparation system, and containers of separated solid radionuclides (cesium) from the pretreat supernatant function. Transport the containers to the appropriate interim storage facilities. Prepare and place the containers in their designated storage locations, monitor the storage locations for storage containment integrity, and eventually retrieve the containers from storage. Prepare and load containers into casks for either shipment to an offsite disposal facility or transport to an onsite treatment facility for further processing.
4.2.4.2	**Dispose ILLW** The Dispose ILLW Function transports sealed containers of immobilized low-level waste (ILLW) from the LLW Immobilization facility, places the containers in their designated storage locations, monitors containers for storage containment integrity, and eventually retrieves the containers, if necessary, from storage to prepare them for onsite disposal or converts the storage facility to a disposal facility. The Dispose ILLW Function furnishes shipping devices to the LLW Immobilization facility. The LLW Immobilization facility loads the devices with packages of ILLW provided by the Immobilize LLW system. The Dispose ILLW function collects the loaded shipping containers and transports them to the disposal area or the interim storage area as required. Note: The identified hazardous waste constraints (i.e. 40CFR subpart 264, subpart 268) and dangerous waste constraints (i.e. WAC-173-303-630) should be reviewed for applicability based upon the regulatory status of the immobilized low-level waste.
4.2.4.3	**Close Operable Units (Tanks)** Closure ready tanks are deactivated and the operable units are closed per applicable regulations. The Operable Units include the tanks, ancillary equipment, and Past Practice Units (PPU), as defined in the Hanford Federal Facility Agreement and Consent Order.

1.5.4 Dispose of Tank Waste Remediation System

1.6 PROJECT LIFE-CYCLE REQUIREMENTS

This section contains the requirements for each project life cycle phase including the project management requirements.

1.6.1 Manage Tank Waste Remediation System

1.6.2 Acquire Tank Waste Remediation System

1.6.3 Operate & Maintain Tank Waste Remediation System

Table 1.6.3-1 Operate & Maintain Tank Waste Remediation System Requirements

1	MDD, Central Plateau, Safety Objective S54 Maintain Single Shell Tank (SST) Farm Facilities; maintain SST farm facilities within approved safety; envelope, upgrade as necessary; perform surveillance monitoring.
2	MDD, Central Plateau, Safety Objective S55 Operate and maintain Double Shell Tank (DST) Farm Facilities: maintain DST farm facilities within approved safety envelope, upgrade as necessary, perform surveillance monitoring, receive new liquid waste from other activities.
3	MDD, Central Plateau, Safety Objective S56 Maintain inactive Miscellaneous Underground Storage Tanks (MUSTS), maintain facilities within approved safety envelope.
4	MDD, Central Plateau, Safety Objective S57 Operate and maintain 242A Evaporator Facility including feed and receiver tanks, evaporate dilute wastes to conserve waste storage volume.
5	MDD, Central Plateau, Safety Objective S58 *Resolve urgent safety issues associated with tank wastes; identify tanks with safety risks, analyze safety risks and determine corrective action,* mitigate or resolve safety risks.
6	MDD, Central Plateau, Safety Objective S59 Stabilize/isolate Single Shell Tank (SST) Farms; remove pumpable liquid, provide liquid intrusion prevention.
7	MDD, Central Plateau, Safety Objective S60 Characterize waste to resolve safety risks . and operate tank farms.
8	MDD, Reactors on the River, Final, 1h Remove sludge to tank farms in the 200 Area for storage and treatment.
9	MDD, Central Plateau, Interim, 32a Retrieval: retrieve waste from all tanks to the extent needed for closure and transfer to waste treatment and immobilization feed tanks.
10	MDD, Central Plateau, Interim, 32a1 Remove high-heat waste from 106-C.
11	MDD, Central Plateau, Interim, 32a2 *Demonstrate SST waste removal to extent needed for closure.*
12	MDD, Central Plateau, Interim, 32a3 Start full scale SST waste removal on SST tank farm.
13	MDD, Central Plateau, Interim, 32a4 Demonstrate DST waste removal.
14	MDD, Central Plateau, Interim, 32a5 Initiate DST waste retrieval.
15	MDD, Central Plateau, Interim, 32b Low-level waste: complete treatment and immobilization of all low-level tank waste.
16	MDD, Central Plateau, Interim, 32b1 Privatize L_W treatment and immobilization.
17	MDD, Central Plateau, Interim, 32b2 Start construction of commercial demonstration facility(ies).
18	MDD, Central Plateau, Interim, 32b3 Start hot operation of commercial demonstration facility(ies).
19	MDD, Central Plateau, Interim, 32b4 Complete treatment and immobilization of minimum order quantity of LLW (2800 MT Na).
20	MDD, Central Plateau, Interim, 32c High-level waste: complete treatment and immobilization of HLW.

Table 1.6.3-1 Operate & Maintain Tank Waste Remediation System Requirements (Continued)

21	MDD, Central Plateau, Interim, 32c1 Privatized HLW treatment and immobilization.
22	MDD, Central Plateau, Final, 33a Provide initial HLW canister storage facility.
23	MDD, Central Plateau, Final, 33b Start HLW shipments to Repository.
24	MDD, Central Plateau, Final, 34a Provide initial LLW storage facility.
25	MDD, Central Plateau, Final, 34b Acquire approval for disposal LLW on-site.
26	MDD, Central Plateau, Final, 34c Initiate LLW disposal facility operations.
27	MDD, Central Plateau, Final, 35a Submit SST closure plan to Washington State Department of Ecology.
28	MDD, Central Plateau, Final, 35b Issue approved closure plan.
29	MDD, Central Plateau, Final, 35c Initiate closure of first SST farm.
30	MDD, Central Plateau, Final, 44a Determine how any Cs/Sr capsules declared waste will be prepared for disposal (overpack or processing).
31	MDD, Central Plateau, Final, 44b Start hot operations of capsule preparation facility.
32	MDD, Central Plateau, Final, 44c Complete capsule preparation for disposal.
33	MDD, Central Plateau, Interim, 32 Retrieve tank wastes to the extent needed for tank closure; divide into high- and low-level fractions and immobilize.
34	MDD, Central Plateau, Final, 33 The high-level immobilzed fraction will be interim stored until it can be shipped off-site for disposal (planned for the Yucca Mountain geologic repository).
35	MDD, Central Plateau, Final, 34 The immobilized low level fraction will be disposed on-site in a 200 Area disposal system.
36	MDD, Central Plateau, Final, 35 After the waste has been retrieved from the tanks, the tank farms-including the tanks-will be closed. (Closure is anticipated to include filling the tank void space and adding surface barriers.)
37	MDD, Central Plateau, Final, 44 For Cs/Sr capsules declared waste, send to Yucca Mountain for HLW repository disposal.
38	RHST, page 3, 3.2.4 (04D) High-level waste shall eventually be disposed at an offsite location, but onsite safe, stable storage shall be required for at least 50 years.

1.6.3.1 Remediate Tank Waste

Table 1.6.3.1-1 Remediate Tank Waste Requirements

1	WAC173-303-640 Tank systems Tank systems used to treat or store dangerous waste shall comply with the regulations of this Code.
2	Cs/Sr Capsules Disposition TWRS (RTW) shall package 1577 capsules of CsCl containing approximately 53 MCi of Cs-137, and 640 capsules of SrF2 containing approximately 23 MCi of Sr-90 in accordance with the repository waste acceptance requirements.
3	SST Waste Retrieval Rate The SST waste retrieval rate must average approximately 21 cubic meters per day of SST waste. This waste retrieval rate is a linear assumption, will vary over time, and does not include solutions (if any) added to mobilize the SST wastes. This requirement is derived from the Hanford Federal Facility Agreement and Consent Order milestone M-45-00 (specifies SST waste retrieval will be conducted from 12/2003 through 9/2018) and the inventory of waste contained in the SSTs..
4	Estimated TWRS Life Cycle Cost The TWRS planning estimate for the life cycle cost is TBD.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

5	WAC173-303-630 Use and management of containers Containers used for the storage of dangerous waste shall be stored/managed in accordance with this Code.
6	WAC173-400 General Regulations for Air Pollution Sources Contractor air emissions shall comply with the standards identified by this Code.
7	WAC246-247 Radiation Protection - Air Emissions Contractor monitoring, collecting, and reporting of airborne radionuclide emissions shall be performed in accordance with procedures established by this Code.
8	Radioactive and Radioactive Dangerous Solid Waste Forecasting TWRS functions shall estimate the volume of radioactive and radioactive dangerous waste to be generated and provide these forecasts annually or as required to the Remedy Solid Waste function.
9	Hazardous Material Packaging and Shipping Manual, WHC-CM-2-14 This manual defines the requirements, responsibilities, and procedures necessary to ensure that all hazardous material shipments are packaged and transported in a manner that complies with all appropriate regulations and minimizes risk to employees, the shipping industry, the public, and the environment. The regulations in this manual apply to all Hanford Site contractors who package, ship, and transport hazardous material bound for onsite or offsite destinations.
10	Radioactive and Radioactive Mixed Waste Disposal The Remedy Solid Waste Function shall accept radioactive and radioactive mixed waste from TWRS functions.
11	Land Use The remediate tank waste (or TWRS) function is a portion of the future Hanford Site waste management activities. The TWRS function is being planned to follow the recommendations for the site-wide waste management function included in The Future of Hanford: Use and Cleanup--The Final Report of The Hanford Site Uses Working Group (Drummond 1992). The working group recommends that the waste management available land area for the site encompass the "squared off" boundaries of the 200 East and West Areas. The remainder of the Central Plateau that encircles the 200 Areas should be a buffer zone. Further, the working group recommends that waste management, storage, and disposal activities be limited to within the present 200 Area boundaries whenever feasible. The operations complex for the TWRS function must be sited on available land. According to the Draft Environmental Impact Statement for the Tank Waste Remediation System (DOE/EIS-0189), about 500 acres will be temporarily committed for the TWRS complex construction and operations. Finally, about 100 acres will be permanently committed for waste management and disposal. Consistent with the above information, the Tank Waste Remediation System Complex Site Evaluation Report (WHC-SD-WM-SE-021, Rev. 0) recommends 200 East Area for the TWRS complex. Compared to the 200 West Area, the TWRS function can be more efficiently and conveniently conducted at 200 East Area. The WHC-SD-WM-SE-021 evaluation determined the total land area within/adjacent 200 East that is potentially available for the TWRS complex. DOE-RL has initiated the preparation of a Hanford Remedial Activities Environmental Impact Statement and the development of the Comprehensive Land Use Plan for the Hanford Site. The Hanford Remedial Activities Environmental Impact Statement is to be based on the working group recommendations (Drummond 1992) and define all the end states for the site, including the Central Plateau area designated for waste management activities. The land use plan is being developed as the guidance for achieving these end states. Therefore, the land use commitments defined by the TWRS EIS (DOE/EIS-0189) and recommended by the TWRS complex Site evaluation (WHC-SD-WM-SE-021, Rev. 0) are expected to be closely compatible with the DOE-RL Hanford Remedial Activities Environmental Impact Statement and ICF-KH land use plan.
12	Worker Occupational Safety TWRS activities shall conform to 29 CFR 1910 and DOE 5483.1a Occupational Safety and Health Administration (OSHA) Program at Government owned contractor operated facilities.
13	WAC173-460 Controls for Sources of Toxic Air Emissions Best available control technology shall be used on new or modified sources of toxic air emissions in accordance with this Code.
14	EM-WAPS "Waste Acceptance Product Specifications for Vitrified High-Level Waste Forms" Acceptance of contractor vitrified HLW into the Civilian Radioactive Waste Management System (CRWMS) shall be in accordance with these specifications.
15	DOE/RW-3351P, rev.1 Waste Acceptance System Requirements Acceptance of HLW and SNF into the Civilian Radioactive Waste Management System (CRWMS) shall be in accordance with this document.
16	WAC173-303 Dangerous Waste Regulations Contractor generation, transportation, treatment, storage and disposal of dangerous waste shall be in accordance with this Code.
17	DOE/WIPP-069, rev.4 Waste Acceptance Criteria for Waste Isolation Pilot Plant Contractor waste certification shall be in accordance with this document.
18	System Effectiveness The Remediate Tank Waste function shall achieve TBD effectiveness. The system effectiveness shall consist of operational availability, facility and equipment reliability, maintainability and human factors.
19	40CFR61.92 Standard: Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

20	**Residual Volume for Closure** Closure will follow retrieval of as much tank waste as technically possible, with tank waste residues not to exceed 360 cubic feet (cu. ft.) in each of the 100 series tanks, 30 cu. ft. in each of the 200 series tanks, or the limit of waste retrieval technology capability, whichever is less. Basis: TPA Change Control Form M-45-00 Basis: TPA Milestone M-45-00
21	**DOE5480.11 Radiation Protection for Occupational Workers** The contractor radiation protection program for occupational workers shall include the requirements of, and be in accordance with, this Order.
22	**High Degree of Decontamination Capability / Protection of Health and Safety** The clearest expression of the overall regulatory objectives is the Atomic Energy Commission's (AEC's) explanatory statement when it promulgated appendix F-namely, "that the public interest requires that a high degree of decontamination capability be included in such facilities and that any residual radioactive contamination after decommissioning be sufficiently low as not to represent a hazard to the public health and safety." 35 FR 17530, November 14, 1970. As we read the AEC's intent, the reference to "a high degree of decontamination capability" leaves a substantial degree of discretion. It certainly does not rule out consideration of economic factors as well as technical ones. It was the AEC's contemporaneous practice to consider financial impacts as, for example, in controlling releases of radioactive materials from licensed facilities to the lowest levels "technically and economically practical." AEC Manual Chapter 0511. When the AEC spoke of a "high degree" of decontamination capability, we believe that it was guided by similar considerations. Moreover, from apolicy standpoint, this makes good sense, for so long as there is adequate protection of public health and safety, it would not be prudent to expend potentially vast sums without a commensurate expectation of benefit to health and the environment. Achieving a "high degree of decontamination capability" implies, then, that the facility should separate for disposal as much of the radioactivity as possible, using processes that are technically and economically practical. In addition, however, as the AEC's statement indicates, the residual radioactive contamination should be sufficiently low as not to endanger public health and safety. These principles-high decontamination capability and protection of health and safety-are the essential benchmarks that have influenced the development of NRC's positionvis-a-vis DOE on the question of the proper classification of the tank wastes and grout at Hanford.
23	**Hanford Site Permits** TWRS functions shall submit to the Remedy Solid Waste function all technical information and analysis required to modify or comply with any affected Hanford Site permits necessary to dispose of the waste.
24	**DOE5820.2A Radioactive Waste Management** The contractor management of radioactive and mixed waste and contaminated facilities shall include the requirements of, and be in accordance with, this Order.
25	***Hanford Site Radiological Control Manual*** Radiological services shall be performed in accordance with "Hanford Site Radiological Control Manual".
26	**Estimated TWRS Project Schedule** The TWRS remediation schedule will be as follows: Phase I Proof of Concept See POCR Phase I Schedule *Phase II Full Scale Production* Award 2005 Design, Permitting Licensing, Construction Low Activity 2005-2011 High Level 2005-2013 Operations *Low Activity* 2011-2021 High Level 2013-2028 D & D Low Activity 2021-2026 High Level Waste 2028-2033 *Basis: General Schedule section of 95-PRI-073*

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

27	*Worker Radiological Safety: Hanford Site Radiological Control Manual, Chapter 1, Part 1, Section 111 and Section 112* PART 1 Department of Energy (DOE) Radiological Control Manual Part1 Hanford Site Since 1992, the U.S. Department of Energy (DOE) Office of Health has been developing a comprehensive system of radiological control requirements and guidance that clearly defines the DOE objectives and expectations for radiological control activities throughout the DOE complex. These requirements and guidance address provisions of the Atomic Energy Act (as amended), the Price Anderson Amendments Act, and recommendations of the Defense Nuclear Facilities Safety Board. These requirements and guidance are organized into a hierarchy that includes policy, basic requirements (Rules and Orders), supplemental and complimentary information documents providing acceptable methods for implementation of basic requirements (Safety Guides and Implementation Guides), and detailed technical guidance (Technical Standards.) The Radiological Health and Safety Policy provides the general framework for the conduct of radiological control activities throughout the DOE complex. Below the policy statement are both regulatory and contractual systems of basic requirements established through 10 CFR 835, which is enforced through a regulatory system established in 10 CFR 820, and DOE Order 5480.11, which is enforced through contractual commitments. The requirements of the Rule are augmented by complementary guidance provided in Implementation Guides while the requirements of the Order are augmented by complementary guidance provided in the DOE Radiological Control Manual. The Hanford Site Radiological Control Manual (HSRCM) has been developed through a cooperative effort between the DOE Richland Operations Office (RL) and the Hanford contractors. As required by Article 114.1, the HSRCM has been approved by the senior site executives of the Hanford contractors and provides the basis for consistent and uniform implementation of radiological control requirements for the Hanford Site.
28	EM-WAPS 1.1 The waste form is borosilicate waste glass. Note: This specification is in conflict with TWRS baseline requirements. The TWRS baseline considers the possible use of other glass compositions, e.g., aluminosilicate glass. (See 4.2 O4 Issue1.)
29	EM-WAPS 1.4.2 At the time of shipment, the producer shall certify that after the initial cool-down, the waste form temperature has not exceeded 400°C. The producer shall describe the method of compliance in the WCP.
30	EM-WAPS 3.1 The producer shall ensure that the canistered waste form does not contain detectable amounts of free liquids. The producer shall describe the method of compliance in the WCP and provide documentation of the ability to comply, and of the detection limits, in the WQR.
31	EM-WAPS 3.7 The level of removable radioactive contamination on all external surfaces of each canistered waste form shall not exceed the following limits at the time of shipment: *Alpha radiation: 220 dpm/100 cm2* Beta and Gamma radiation: 2200 dpm/100 cm2 In addition, the producer shall visually inspect each canistered waste form and remove visible waste glass from the exterior before shipment. The producer shall describe the method of compliance in the WCP and provide contamination level results in the Storage and Shipping Records
32	EM-WAPS 3.11 The configuration, dimensions, and weight of the canistered waste form shall not exceed the maximum size and weight which can be received, handled, and emplaced in the repository. These parameters shall be controlled as indicated below and shall be documented at the time of shipment. The producer shall describe the method of compliance in the WCP and the basis for compliance in the WCP.
33	EM-WAPS 3.12 The canistered waste form shall be capable of withstanding a 7 meter drop onto a flat, essentially unyielding surface without breaching (leak rate < 1x10-4 atm-cc/sec helium). The producer shall describe the method of compliance in the WCP and provide test results and any supporting analyses in the WQR. The test results shall include information on measured canister leak rates and canister deformation after the drop.
34	10CFR61.41 Concentrations of radioactive material which may be released to the general environment in ground water, surface water, air, soil, plants, or animals must not result in an annual dose exceeding an equivalent of 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.
35	10CFR61.42 Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

36	***10CFR61.52*** (a)(1) Wastes designated as Class A pursuant to 61.55, must be segregated from other wastes by placing in disposal units which are sufficiently separated from disposal units for the other waste classes so that any interaction between Class A wastes and other wastes will not result in the failure to meet the performance objectives in subpart C of this Part. This segregation is not necessary for Class A wastes if they meet the stability requirements in 61.56(b) of this part. (2) Wastes designated as Class C pursuant to 61.55, must be disposed of so that the top of the waste is a minimum of 5 meters below the top surface of the cover or must be disposed of with intruder barriers that are designed to protect against an inadvertent intrusion for a least 500 years. (3) All wastes shall be disposed of in accordance with the requirements of paragraphs (a)(4) through (11) of this section. (4) Wastes must be emplaced in a manner that maintains the package integrity during emplacement, minimizes the void spaces between packages, and permits the void spaces to be filled. (5) Void spaces between waste packages must be filled with earth or other material to reduce future subsidence within the fill. (6) Waste must be placed and covered in a manner that limits the radiation dose rate at the surface of the cover to levels that at a minimum will permit the licensee to comply with all provisions of 20.105, or, for licensees implementing the provisions of 20.1001 20.2401, 20.1301 and 20.1302 of this chapter at the time the license is transferred pursuant to 61.30 of this part. (7) The boundaries and locations of each disposal unit (e.g., trenches) must be accurately located and mapped by means of a land survey. Near-surface disposal units must be marked in such a way that the boundaries of each unit can be easily defined. Three permanent survey marker control points, referenced to United States Geological Survey (USGS) or National Geodetic Survey (NGS) survey control stations, must be established on the site to facilitate surveys. The USGS or NGS control stations must provide horizontal and vertical controls as checked against USGS or NGS record files. (8) A buffer zone of land must be maintained between any buried waste and the disposal site boundary and beneath the disposed waste. The buffer zone shall be of adequate dimensions to carry out environmental monitoring activities specified in 61.53(d) of this part and take mitigative measures if needed. (9) Closure and stabilization measures as set forth in the approved site closure plan must be carried out as each disposal unit (e.g., each trench) is filled and covered. (10) Active waste disposal operations must not have an adverse effect on completed closure and stabilization measures. (11) Only wastes containing or contaminated with radioactive materials shall be disposed of at the disposal site. *(b) Facility operation and disposal site closure for land disposal facilities other than near-surface (reserved).*

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

37

10CFR61.55

(a)(1) Considerations. Determination of the classification of radioactive waste involves two considerations. First, consideration must be given to the concentration of long-lived radionuclides (and their shorter-lived precursors) whose potential hazard will persist long after such precautions as institutional controls, improved waste form, and deeper disposal have ceased to be effective. These precautions delay the time when long-lived radionuclides could cause exposures. In addition, the magnitude of the potential dose is limited by the concentration and availability of the radionuclide at the time of exposure. Second, consideration must be given to the concentration of shorter-lived radionuclides for which requirements on institutional controls, waste form, and disposal methods are effective.

(2) Classes of waste.

(i) Class A waste is waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste must meet the minimum requirements set forth in 61.56(a). If Class A waste also meets the stability requirements set forth in 61.56(b), it is not necessary to segregate the waste for disposal.

(ii) Class B waste is waste that must meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste must meet both the minimum and stability requirements set forth in 61.56.

(iii) Class C waste is waste that not only must meet more rigorous requirements on waste form to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion. The physical form and characteristics of Class C waste must meet both the minimum and stability requirements set forth in 61.56.

(iv) Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. In the absense of specific requirements in this part, such waste must be disposed of in a geologic repository as defined in part 60 of this chapter unless proposals for disposal of such waste in a disposal site licensed pursuant to this part are approved by the Commission.

(3) Classification determined by long-lived radionuclides. If radioactive waste contains only radionuclides listed in Table 1, classification shall be determined as follows:

(i) If the concentration does not exceed 0.1 times the value in Table 1, the waste is Class A.

(ii) If the concentration exceeds 0.1 times the value in Table 1 but does not exceed the value in Table 1, the waste is Class C. (iii) If the concentration exceeds the value in Table 1, the waste is not generally acceptable for near-surface disposal.

(iv) For wastes containing mixtures of radionuclides listed in Table 1, the total concentration shall be determined by the sum of fractions rule described in paragraph (a)(7) of this section.

Table 1

Radionuclide	Concentration curies/per cubic meter
C 14	8
C 14 in activated metal	80
Ni 59 in activated metal	220
Nb 94 in activated metal	0.2
Tc 99	3
I 129	0.08
Alpha emitting transuranic nuclides with half-life	
greater than five years	100 1/
Pu 241	3,500 1/
Cm 242	20,000 1/

1/ Units are nanocuries per gram.

(4) Classification determined by short-lived radionuclides. If radioactive waste does not contain any of the radionuclides listed in Table 1, classification shall be determined based on the concentrations shown in Table 2. However, as specified in paragraph (a)(6) of this section, if radioactive waste does not contain any nuclides listed in either Table 1 or 2, it is Class A.

(i) If the concentration does not exceed the value in Column 1, the waste is Class A.

(ii) If the concentration exceeds the value in Column 1, but does not exceed the value in Column 2, the waste is Class B.

(iii) If the concentration exceeds the value in Column 2, but does not exceed the value in Column 3, the waste is Class C.

(iv) If the concentration exceeds the value in Column 3, the waste is not generally acceptable for near-surface disposal.

(v) For wastes containing mixtures of the nuclides listed in Table 2, the total concentration shall be determined by the sum of fractions rule described in paragraph (a)(7) of this section.

Table 2

Radionuclide	Concentration, curies per cubic meter

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

		Col. 1	Col. 2	Col. 3
	Total of all nuclides with less than 5 year half life	700	() 1/	() 1/
	H 3	40	() 1/	() 1/
	Co 60	700	() 1/	() 1/
	Ni 63	3.5	70	700
	Ni 63 in activated metal	35	700	7000
	Sr 90	0.04	150	7000
	Cs 137	1	44	4600

1/ *There are no* limits established for these radionuclides in Class B or C wastes. Practical considerations such as the effects of external radiation and internal heat generation on transportation, handling, and disposal will limit the concentrations for these wastes. These wastes shall be Class B unless the concentrations of other nuclides in Table 2 determine the waste to the Class C independent of these nuclides.

(5) Classification determined by both long- and short-lived radionuclides. If radioactive waste contains a mixture of radionuclides, some of which are listed in Table 1, and some of which are listed in Table 2, classification shall be determined as follows:

(i) If the concentration of a nuclide listed in Table 1 does not exceed 0.1 times the value listed in Table 1, the class shall be that determined by the concentration of nuclides listed in Table 2.

(ii) If the concentration of a nuclide listed in Table 1 exceeds 0.1 times the value listed in Table 1 but does not exceed the value in Table 1, the waste shall be Class C, provided the concentration of nuclides listed in Table 2 does not exceed the value shown in Column 3 of Table 2.

(6) Classification of wastes with radionuclides other than those listed in Tables 1 and 2. If radioactive waste does not contain any nuclides listed in either Table 1 or 2, it is Class A.

(7) The sum of the fractions rule for mixtures of *radionuclides. For determining classification for waste that contains a mixture of radionuclides, it is* necessary to determine the sum of fractions by dividing each nuclide"s concentration by the appropriate limit and adding the resulting values. The appropriate limits must all be taken from the same column of the same table. The sum of the fractions for the column must be less than 1.0 if the waste class is to be determined by that column. Example: A waste contains Sr-90 in a concentration of 50 Ci/m. and Cs-137 in a concentration of 22 Ci/m. Since the concentrations both exceed the values in Column 1, Table 2, they must be compared to Column 2 values. For Sr-90 fraction *50/150=0.33; for Cs-137 fraction, 22/44=0.5; the sum of the fractions=0.83.* Since the sum is less than 1.0, the waste is Class B.

(8) Determination of concentrations in wastes. The concentration of a radionuclide may be determined by indirect methods such as use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured, or radionuclide material accountability, if there is reasonable assurance that the indirect methods can be correlated with actual measurements. The concentration of a radionuclide may be averaged over the volume of the waste, or weight of the waste if the units are expressed as nanocuries per gram.

38 10CFR61.56

(a) The following requirements are minimum requirements for all classes of waste and are intended to facilitate handling at the disposal site and provide protection of health and safety of personnel at the disposal site.

(1) Waste must not be packaged for disposal in cardboard or fiberboard boxes.

(2) Liquid waste must be solidified or packaged in sufficient absorbent material to absorb twice the volume of the liquid.

(3) Solid waste containing liquid shall contain as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume.

(4) Waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.

(5) Waste must not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged in accordance with paragraph (a)(7) of this section.

(6) Waste must not be pyrophoric. *Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.*

(7) Waste in a gaseous form must be packaged at a pressure that does not exceed 1.5 atmospheres at 20 C. Total activity must not exceed 100 curies per container.

(8) Waste containing hazardous, biological, pathogenic, or infectious material must be treated to reduce to the maximum extent practicable the potential hazard from the non-radiological materials.

(b) The requirements in this section are intended to provide stability of the waste. Stability is intended to ensure that the waste does not structurally degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste.

(1) Waste must have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form, under the expected disposal conditions such as weight of overburden and compaction equipment, the presence of moisture, and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.

(2) Notwithstanding the provisions in 61.56(a) (2) and (3), liquid wastes, or wastes containing liquid, must be converted into a form that contains as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5% of the volume of the waste for waste processed to a stable form.

(3) Void spaces within the waste and between the waste and its package must be reduced to the extent practicable.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

39	10CFR835, Subpart C, Sec. 835.202 Occupational exposure limits for general employees. Occupational Exposure (a) The occupational exposure to general employees resulting from DOE activities, other than planned special exposures under Sec. 835.204 and emergency exposure situations under Sec. 835.1302, shall be controlled so the following annual limits are not exceeded: (1) A total effective dose equivalent of 5 rems (0.05 sievert); (2) The sum of the deep dose equivalent for external exposures and the committed dose equivalent to any organ or tissue other than the lens of the eye of 50 rems (0.5 sievert); (3) A lens of the eye dose equivalent of 15 rems (0.15 sievert); and (4) A shallow dose equivalent of 50 rems (0.5 sievert) to the skin or to any extremity. (b) All occupational exposure received during the current year shall be included when demonstrating compliance with Sec. 835.202(a). (c) Exposures from background, therapeutic and diagnostic medical radiation, and voluntary participation in medical research programs shall not be included in dose records or in the assessment of compliance with the occupational exposure limits.
40	10CFR962, Part 3(a-b) [PART] 962.3 Byproduct material. (a) For purposes of this part, the term "byproduct material"" means any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material. (b) For purposes of determining the applicability of the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.) to any radioactive waste substance owned or produced by the Department of Energy pursuant to the exercise of its atomic energy research, development, testing and production responsibilities under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.), the words "any radioactive material,"" as used in paragraph (a) of this section, refer only to the actual radionuclides dispersed or suspended in the waste substance. The nonradioactive hazardous component of the waste substance will be subject to regulation under the Resource Conservation and Recovery Act.
41	29CFR1910
42	40CFR50.4 The national primary ambient air quality standards for sulfur oxides measured as sulfur dioxide by the reference method described in appendix A to this part, or by an equivalent method, are: (a) 80 micrograms per cubic meter (0.03 p.p.m.)--annual arithmetic mean. (b) 365 micrograms per cubic meter (0.14 p.p.m.)--Maximum 24-hour concentration not to be exceeded more than once per year.
43	40CFR50.5 The national secondary ambient air quality standard for sulfur oxide measured as sulfur dioxide by the reference method described in appendix A to this part, or by any equivalent method is 1,300 micrograms per cubic meter (0.5 p.p.m.) maximum 3-hour concentration not to be exceeded more than once per year.
44	40CFR50.6 (a) The level of the national primary and secondary 24-hour ambient air quality standards for particulate matter is 150 micrograms per cubic meter (g/m 3), 24-hour average concentration. The standards are attained when the expected number of days per calendar year with a 24-hour average concentration above 150 g/m 3, as determined in accordance with appendix K to this part, is equal to or less than one. (b) The level of the national primary and secondary annual standards for particulate matter is 50 micrograms per cubic meter (g/m 3), annual arithmetic mean. The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with appendix K to this part, is less than or equal to 50 g/m 3. (c) For the purpose of determining attainment of the primary and secondary standards, particulate matter shall be measured in the ambient air as PM 10 (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) by: (1) A reference method based on appendix J and designated in accordance with part 53 of this chapter, or (2) An equivalent method designated in accordance with part 53 of this chapter.
45	40CFR50.8(a) (a) The national primary ambient air quality standards for carbon monoxide are: (1) 9 parts per million (10 milligrams per cubic meter) for an 8-hour average concentration not to be exceeded more than once per year and (2) 35 parts per million (40 milligrams per cubic meter) for a 1-hour average concentration not to be exceeded more than once per year.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

46	40CFR50.9 (a) The level of the national primary and secondary ambient air quality standards for ozone measured by a reference method based on Appendix D to this part and designated in accordance with part 53 of this chapter, is 0.12 part per million (235 g/m 3). The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 part per million (235g/m 3) is equal to or less than 1, as determined by Appendix H.
47	40CFR50.11(a-b) (a) The level of the national primary ambient air quality standard for nitrogen dioxide is 0.053 parts per million (100 micrograms per cubic meter), annual arithmetic mean concentration. (b) The level of national secondary ambient air quality standard for nitrogen dioxide is 0.053 parts per million (100 micrograms per cubic meter), annual arithmetic mean concentration.
48	40CFR50.12 National primary and secondary ambient air quality standards for lead and its compounds, measured as elemental lead by a reference method based on Appendix G to this part, or by an equivalent method, are: 1.5 micrograms per cubic meter, maximum arithmetic mean averaged over a calendar quarter.
49	40CFR141 National Primary Drinking Water Regulations
50	40CFR191.03(a) (a) Management and storage of spent nuclear fuel or high-level or transuranic radioactive wastes at all facilities regulated by the Commission or by Agreement States shall be conducted in such a manner as to provide reasonable assurance that the combined annual dose equivalent to any member of the public in the general environment resulting from: (1) Discharges of radioactive material and direct radiation from such management and storage and (2) all operations covered by Part 190; shall not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other critical organ.
51	40CFR193
52	40CFR264.171 If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this part.
53	40CFR264.172 The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.
54	40CFR264.173 (a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste. (b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak. [Comment: Reuse of containers in transportation is governed by U.S. Department of Transportation regulations including those set forth in 49 CFR 173.28.]
55	40CFR264.175 (a) Container storage areas must have a containment system that is designed and operated in accordance with paragraph (b) of this section, except as otherwise provided by paragraph (c) of this section. (b) A containment system must be designed and operated as follows: (1) A base must underly the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed; (2) The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids; (3) The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination; (4) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in paragraph (b)(3) of this section to contain any run-on which might enter the system; and (5) Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. [Comment: If the collected material is a hazardous waste under part 261 of this Chapter, it must be managed as a hazardous waste in accordance with all applicable requirements of parts 262 through 266 of this chapter. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the Clean Water Act, as amended.] (c) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by paragraph (b) of this section, except as provided by paragraph (d) of this section or provided that: (1) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or (2) The containers are elevated or are otherwise protected from contact with accumulated liquid. (d) Storage areas that store containers holding the wastes listed below that do not contain free liquids must have a containment system defined by paragraph (b) of this section: (1) FO20, FO21, FO22, FO23, FO26, and FO27.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

56	40CFR264.177 (a) Incompatible wastes, or incompatible wastes and materials (see appendix V for examples), must not be placed in the same container, unless [Section] 264.17(b) is complied with. (b) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material. [Comment: As required by [Section] 264.13, the waste analysis plan must include analyses needed to comply with [Section] 264.177. Also, [Section] 264.17(c) requires wastes analyses, trial tests or other documentation to assure compliance with [Section] 264.17(b). As required by [Section] 264.73, the owner or operator must place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.] (c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device. [Comment: The purpose of this section is to prevent fires, explosions, gaseous emission, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.]
57	40CFR264.178 At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed. [Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with [Section] 261.3(d) of this chapter that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of parts 262 through 266 of this chapter].
58	40CFR264.194(a) (a) Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.
59	40CFR264.194(b) (b) The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum: (1) Spill prevention controls (e.g., check valves, dry disconnect couplings); (2) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and (3) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.
60	40CFR264.198 (a) Ignitable or reactive waste must not be placed in tank systems, unless: (1) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that: (i) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under [Sections] 261.21 or 261.23 of this chapter, and (ii) Section 264.17(b) is complied with; or (2) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or (3) The tank system is used solely for emergencies. (b) The owner or operator of a facility where ignitable or reactive waste is stored or treated in a tank must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981), (incorporated by reference, see [Section] 260.11).
61	40CFR264.199 (a) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless [Section] 264.17(b) is complied with. (b) Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless [Section] 264.17(b) is complied with.
62	40CFR264.1102 264.1102 Closure and post-closure care. (a) At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.,) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless 261.3(d) of this chapter applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in subparts G and H of this part. (b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (264.310). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in subparts G and H of this part.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

63	40CFR268.1 [Section] 268.1 Purpose, scope and applicability. (a) This part identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed. (b) Except as specifically provided otherwise in this part or part 261 of this chapter, the requirements of this part apply to persons who generate or transport hazardous waste and owners and operators of hazardous waste treatment, storage, and disposal facilities. (c) Restricted wastes may continue to be land disposed as follows: (1) Where persons have been granted an extension to the effective date of a prohibition under subpart C of this part or pursuant to [Section] 268.5, with respect to those wastes covered by the extension; (2) Where persons have been granted an exemption from a prohibition pursuant to a petition under [Section] 268.6, with respect to those wastes and units covered by the petition; (3) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited from land disposal under this part, are not prohibited from land disposal if the wastes: (i) Are disposed into a nonhazardous or hazardous injection well as defined in 40 CFR 144.6(a); and (ii) Do not exhibit any prohibited characteristic of hazardous waste at the point of injection. (d) The requirements of this part shall not affect the availability of a waiver under section 121(d)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). (e) The following hazardous wastes are not subject to any provision of part 268: (1) Waste generated by small quantity generators of less than 100 kilograms of non-acute hazardous waste or less than 1 kilogram of acute hazardous waste per month, as defined in [Section] 261.5 of this chapter; (2) Waste pesticides that a farmer disposes of pursuant to [Section] 262.70; (3) Wastes identified or listed as hazardous after November 8, 1984 for which EPA has not promulgated land disposal prohibitions or treatment standards. (4) De minimis losses to wastewater treatment systems of commercial chemical product or chemical intermediates that are ignitable (D001), or corrosive (D002), and that contain underlying hazardous constituents as defined in [Section] 268.2 of this part, are not considered to be prohibited wastes. De minimis is defined as losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges. (5) Land disposal prohibitions do not apply to laboratory wastes displaying the characteristic of ignitability (D001) or corrosivity (D002), that are commingled with other plant wastewaters under designated circumstances: ignitable and corrosive laboratory wastes containing underlying hazardous constituents from laboratory operations, that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to regulation under the CWA (including wastewaters at facilities which have eliminated the discharge of wastewater), provided that the annualized flow of laboratory wastewater into the facility"s headwork does not exceed one percent, or provided that the laboratory wastes" combined annualized average concentration does not exceed one part per million in the facility"s headwork. [51 FR 40638, Nov. 7, 1986; 52 FR 21016, June 4, 1987, as amended at 53 FR 27165, July 19, 1988; 53 FR 31212, Aug. 17, 1988; 54 FR 36970, Sept. 6, 1989; 55 FR 22686, June 1, 1990; 58 FR 29884, May 24, 1993]
64	40CFR268.37 (a) Effective August 9, 1993, the wastes specified in 40 CFR 261.21 as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in [Section] 261.22 as D002, that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies. (b) Effective February 10, 1994, the wastes specified in 40 CFR 261.21 as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in [Section] 261.22 as D002, that are managed in systems defined in 40 CFR 144.6(e) and 146.6(e) as Class V injection wells, that do not engage in CWA-equivalent treatment before injection, are prohibited from land disposal.

TANK WASTE REMEDIATION SYSTEM

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Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

65	40CFR268.40 (a) A restricted waste identified in [Section] 268.41 may be land disposed only if an extract of the waste or of the treatment residue of the waste developed using the test method in appendix II of part 261 does not exceed the value shown in Table CCWE of [Section] 268.41 for any hazardous constituent listed in Table CCWE for that waste, with the following exceptions: D004, D008, K031, K084, K101, K102, P010, P011, P012, P036, P038, and U136. These wastes may be land disposed only if an extract of the waste or of the treatment residue of the waste developed using either the test method in 40 CFR part 261, appendix II, or the test method in appendix IX of this part, does not exceed the concentrations shown in Table CCWE of [Section] 268.41 for any hazardous constituent listed in Table CCWE for that waste. (b) A restricted waste for which a treatment technology is specified under [Section] 268.42(a), or hazardous debris for which a treatment technology is specified under [Section] 268.45, may be land disposed after it is treated using that specified technology or an equivalent treatment method approved by the Administrator under the procedures set forth in [Section] 268.42(b). For waste displaying the characteristic of ignitability (D001) and reactivity (D003), that are diluted to meet the deactivation treatment standard in [Section] 268.42(a) Tables 1 and 2 (DEACT), the treater must comply with the precautionary measures specified in 40 CFR 264.17(b) and 265.17(b) of this chapter. (c) Except as otherwise specified in [Section] 268.43(c), a restricted waste identified in [Section] 268.43 may be land disposed only if the constituent concentrations in the waste or treatment residue of the waste do not exceed the value shown in Table CCW of [Section] 268.43 for any hazardous constituents listed in Table CCW for that waste. (d) If a treatment standard has been established in [Sections] 268.41 through 268.43 for a hazardous waste that is itself hazardous debris, the waste is subject to those standards rather than the standards for hazardous debris under [Section] 268.45.
66	40CFR268.50 [Section] 268.50 Prohibitions on storage of restricted wastes. (a) Except as provided in this section, the storage of hazardous wastes restricted from land disposal under subpart C of this part of RCRA section 3004 is prohibited, unless the following conditions are met: (1) A generator stores such wastes in tanks, containers or containment buildings on-site solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and the generator complies with the requirements in [Section] 262.34 and parts 264 and 265 of this chapter. (2) An owner/operator of a hazardous waste treatment, storage, or disposal facility stores such wastes in tanks, containers, or containment buildings solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and: (i) Each container is clearly marked to identify its contents and the date each period of accumulation begins; (ii) Each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility. Regardless of whether the tank itself is marked, an owner/operator must comply with the operating record requirements specified in [Section] 264.73 or [Section] 265.73. (3) A transporter stores manifested shipments of such wastes at a transfer facility for 10 days or less. (b) An owner/operator of a treatment, storage or disposal facility may store such wastes for up to one year unless the Agency can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal. (c) A owner/operator of a treatment, storage or disposal facility may store such wastes beyond one year; however, the owner/operator bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal. (d) If a generator's waste is exempt from a prohibition on the type of land disposal utilized for the waste (for example, because of an approved case-by-case extension under [Section] 268.5, an approved [Section] 268.6 petition, or a national capacity variance under subpart C), the prohibition in paragraph (a) of this section does not apply during the period of such exemption. (e) The prohibition in paragraph (a) of this section does not apply to hazardous wastes that meet the treatment standards specified under [Sections] 268.41, 268.42, and 268.43 or the treatment standards specified under the variance in [Section] 268.44, or, where treatment standards have not been specified, is in compliance with the applicable prohibitions specified in [Section] 268.32 or RCRA section 3004. (f) Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm must be stored at a facility that meets the requirements of 40 CFR 761.65(b) and must be removed from storage and treated or disposed as required by this part within one year of the date when such wastes are first placed into storage. The provisions of paragraph (c) of this section do not apply to such PCB wastes prohibited under [Section] 268.32 of this part. [51 FR 40642, Nov. 7, 1986; 52 FR 21017, June 4, 1987, as amended at 52 FR 25791, July 8, 1987; 54 FR 36972, Sept. 6, 1989; 57 FR 37281, Aug. 18, 1992]

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

67	49CFR173.412 ADDITIONAL DESIGN REQUIREMENTS FOR TYPE A PACKAGES In addition to meeting the general design requirements prescribed in 49CFR173.411, each Type A packaging shall be designed so that: (a) The smallest overall external dimension of the package is not less than 10 centimeters (4 inches); (b) The outside of the packaging incorporates a feature, such as a seal, that is not readily breakable, and that, while intact is evidence that the package has not been opened. In the case of packages shipped in exclusive use closed transport vehicles, the cargo compartment may be sealed instead of the individual packages; (c) As far as practicable, the external surfaces are free from protrusions and are designed and finished so that they can be easily decontaminated; (d) Containment and shielding would be maintained during transportation and storage in a temperature range of -40C (-40F) to 70C (158F) with account being taken of the possibility of brittle fracture; (e) It is able to withstand the effects of any acceleration, vibration, or vibration resonance that may arise during normal transportation, without any deterioration of the effectiveness of closing devices or of the integrity of the package as a whole and without loosening or unintentional release of nuts, bolts, or other securing devices even after repeated use; (f) It includes a containment system securely closed by a positive fastening device that cannot be opened unintentionally or by pressure that may arise within the package during normal transport. Special form, as demonstrated in accordance with 49CFR173.469 may be considered as a component of the containment system; (g) The materials of the packaging and any components or structures are physically and chemically compatible with each other and with the contents, taking into account the behavior of each under irradiation; (h) For each component of the containment system account is taken, where applicable, of radiolytic decomposition of materials and the generation of gas by chemical reaction and radiolysis; (i) The containment system will retain its radioactive contents under the reduction of ambient pressure to .25 kilograms per square centimeter (3.5 pounds per square inch); (j) Each valve through which the radioactive contents could otherwise escape is protected against damage and unauthorized operation and, except for a pressure relief device, has an enclosure to retain any leakage; (k) Any radiation shield that encloses a component of the packaging specified as part of the containment system will prevent the unintentional escape of that component from the shield; (l) Failure of any tie down attachment on the packaging under excessive load will not impair the ability of the package to meet other requirements of this subpart; (m) When subjected to the tests specified in 49CFR173.461(a), the packaging will prevent: (1) Loss or dispersal of the radioactive contents; and (2) Any significant increase in the radiation levels recorded or calculated at the external surfaces for the condition before the test; (n) Each packaging designed for liquids will: (1) Meet the conditions prescribed in paragraph (m) of this section when subjected to the tests specified in 49CFR173.466 or evaluated against these tests by any of the methods authorized by 49CFR173.461(a); (2) For any package with a liquid volume not exceeding 50 cubic centimeters (1.7 fluid ounces), have sufficient suitable absorbent material to absorb twice the volume of the liquid contents. The absorbent material shall be compatible with the package contents and suitably positioned to contact the liquid in the event of leakage; and (3) For any package with a liquid volume exceeding 50 cubic centimeters (1.7 fluid ounces), either (i) Have sufficient absorbent material as prescribed in paragraph (n) (2) of this section; or (ii) Have a containment system composed of primary inner and secondary outer containment components designed to assure retention of the liquid contents within the secondary outer components in the event that the primary inner components leak; and (o) Each package designed for compressed or uncompressed gasses other than tritium or argon-37 not exceeding 200 curies will be able to prevent loss of contents when the package is subjected to the tests prescribed in 49CFR173.4666 or evaluated against these tests by any of the methods authorized by 49CFR173.461(a).
68	DOE/RL 93-08 Hanford Mission Plan The 200 Area is a limited use area.
69	DOE/RW-0351P, rev.1, 3.2.3.2.3 A(2) WA-Transportation Interface Requirements The types of interfaces between these two elements reflect transfer of both loaded and unloaded transportation cask subsystems and the documentation, reports and communications regarding loaded and unloaded transportation cask subsystems. A. (WA) In support of the following requirements, WA shall arrange for a transportation cask system(s) and necessary Transportation System services to move SNF and/or HLW from the Purchaser's/Producer's site to [the CRWMS facility. [10CFR961.11 Article IV.B.2] (2) Producers shall be provided with a rail cask for delivery of defense HLW (from Savannah River Site and from Hanford) to the MGDS. [Derived]

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

70	DOE/RW-0351P, rev.1, 3.7.1.2.1 Waste Form Criteria A. (WA, Purchase, Producer) All radioactive waste (both SNF and HLW) accepted into the CRWMS for disposal at the MGDS shall be designed to meet the following criteria. Consistent with established agreements, DOE may be responsible for ensuring that certain waste types meet this requirement. (1) (Purchaser, Producer) Radioactive waste shall be in solid form. (2) (Purchaser, Producer) Particulate waste forms shall be consolidated (for example, by incorporation into an encapsulating matrix) to limit the availability and generation of particulates. (3) (Purchaser, Producer) Combustible radioactive wastes shall be reduced to noncombustible form unless it can be demonstrated that a fire involving the waste packages containing combustibles will not adversely affect other waste packages, any structures, systems, and components important to safety, or the repository's ability for waste isolation. B. (WA, Purchaser, Producer) The waste form shall not contribute to free liquids in the waste packages to an amount that could compromise the ability of the waste package to achieve the performance objectives related to containment of the waste form or result in spillage and spread of contamination in the event of waste package perforation during the period through permanent closure. C. (WA, Purchaser, Producer) The waste form shall not contain explosive, pyrophoric, or chemically reactive materials in an amount that could compromise the repository's ability for waste isolation or the repository's ability to satisfy the performance objectives. D. (WA, Purchaser, Producer) If the waste form does not meet the criteria specified in parts A, B, and C, then the waste form shall not be accepted into the CRWMS. [Derived]
71	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.1 HLW Standard Form A. (Producer) The standard canistered HLW form 1 shall be borosilicate glass sealed inside an austenitic stainless steel canister(s) with a concentric neck and lifting flange. [Derived] B. (Producer) The standard canistered HLW form shall meet the following criteria: (1) (Producer) Total length shall be 3.000 meters (+0.005, -0.020 m). 2 [Derived] (2) (Producer) Diameter shall be 61.0 centimeters (+1.5, -1.0 cm). 2 [Derived] (3) (Producer) Weight shall not exceed 2500 kilograms. [Derived] (4) (Producer) Fill height shall be equivalent to at least 80% of the volume of the empty canister. [Derived] (5) (Producer) Total heat generation rate shall not exceed 1500 watts per canister at the year of shipment. [Derived] (6) (Producer) Temperature shall not have exceeded 400 degrees C during storage to ensure the glass transition temperature has not been exceeded. [Derived] (7) (Producer) Inert cover gas leak rate of the outermost closure shall be less than (10)-4 atm-cc/sec. [Derived] (8) (Producer) Canister shall be labeled with unique alphanumeric identifier as described in section 3.7.1.2.1.2.15. [10CFR60.135(b)(4)] note: 1 Other standard HLW forms will be defined in subsequent revisions of the WA-SRD. 2 The minimum dimension may be measured prior to filling.
72	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.4 Criticality Safety for HLW (Producer) The Producer shall design a waste form to ensure that a nuclear criticality accident is not possible unless at least two unlikely, independent, and concurrent or sequential changes have occurred in the conditions essential to nuclear criticality safety. The waste form shall be designed for criticality safety under normal and accident conditions. The calculated effective multiplication factor (Keff) shall be sufficiently below unity to show at least a 5% margin, after allowance for the bias in the method of calculation, the uncertainty in the experiments used to validate the method of calculation.
73	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.5 Waste Form - Material Compatibility (Producer) The contents of the canistered waste form shall not lead to internal corrosion of the canister such that there will be an adverse effect on normal handling during storage, and an abnormal occurrence such as a canister drop accident after exposure to temperatures up to the glass transition temperature. [Derived]

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

74	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.6 Chemical Composition A. (Producer) The Producer shall report to DOE/OCRWM the chemical composition and crystalline phase projections for the waste form. [Derived] B. (Producer) The Producer shall report to DOE/OCRWM the oxide composition of the waste form for the oxides of elements present in concentrations greater than 0.5% by weight and the estimate of the error of the composition. [Derived]
75	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.9 Canister After Closure (Producer) After closure, the canistered waste form shall not contain: A. Free gas other than air, cover, and radiogenic gases with an immediate internal gas pressure no to exceed 150kPa (22psia) at 25°C. Cover gases shall be helium, argon, or other inert gases. [Derived] B. Detectable amounts of organic materials. [Derived]
76	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.10(A) Removable Radioactive Contamination on Canister A. (Producer) The levels of removable radioactive contamination of all external surfaces of each canistered waste form shall not exceed 220 dpm/100 cm2 for alpha radiation and 2200 dpm/100 cm2 for beta and gamma radiation. [Derived]
77	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.10(B) B. (Producer) The Producer shall inspect the canistered waste form and remove visible waste glass from the exterior surface of the canister prior to shipment. [Derived]
78	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.11(A) HLW Phase Stability and Integrity A. (Producer) The Producer shall ensure the phase structure and composition of the canistered waste form are not degraded after initial cooldown by maintaining it below 400°C to ensure the glass transition temperature is not exceeded. [Derived]
79	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.12(A) Hazardous Waste Determination (WA, Producer) WA shall require the Producer to determine if the HLW is hazardous as follows: A. (Producer) The Producer shall determine, quantify, and report to DOE/OCRWM the presence of any hazardous waste listed in 40CFR261.31 through 40CFR261.33, in the waste or in any feed stream proposed for storage or disposal. The listed waste must be quantified in the WQR, or their absence must be certified in the WQR. [Derived]
80	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.12(B) B. (Producer) If no "listed hazardous wastes" are present in the waste or in any feed stream, the Producer shall perform the "Toxicity Characteristics Leaching Procedure" (TCLP) as described in 55 Federal Register 26986, 6/29/90, and other RCRA characteristics tests as described in 40CFR261.20 through 261.24 as appropriate, using samples from production runs or prototypical specimens. Any modifications must have prior DOE/OCRWM approval. The method to be used must be described in the WCP and results documented in the WQR.
81	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.12(D) D. (Producer) For hazardous wastes, the Producer shall prepare "Hazardous Waste Manifest" logs as required by 40CFR262. These logs must be included in the Production Records and must accompany waste during shipment. [Derived]
82	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.14 Canister Impact Characteristics (Producer) The canistered HLW shall be capable of withstanding a drop of 7 meters onto a flat, essentially unyielding surface without breaching or dispersing radionuclides. The test results shall include information on the measured canister leak rates and canister deformation after the drop test. [Derived] <TBR>
83	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.17 Dose Rate at Shipment (Producer) The canistered waste form shall not exceed a maximum surface gamma dose rate of 10E5 rem/hr and a maximum neutron dose rate of 10 rem/hr, at the year of shipment to the MGDS. [Derived]

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Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

84	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.18 HLW Concition at Delivery (Producer) At time of delivery, the HLW shall stand upright without support on a flat horizontal surface and properly fit into a right-circular, cylindrical cavity (64 cm diameter and 3.01 m length). [Derived]
85	DOE/RW-0351P, rev.1, 3.7.1.2.1.2.19 Records (WA, Producer) WA shall require the Producer to submit documentation to DOE/OCRWM to demonstrate compliance of the HLW form with this WA-SRD in accordance with the requirements of OCRWM QARD section 17. DOE-EM, as the cognizant organization within DOE for HLW form production, shall produce waste form production specifications, which describe the form and content of this document. As a minimum, this documentation will include a Waste Form Compliance Plan, a Waste Form Qualification Record, Production Records, and Storage and Shipping Records. [DOE/RW-0333P]
86	DOE/RW-0351P, rev.1, 3.7.1.2.8 Request for Nonstandard or Nonconforming Waste Delivery A. (DOE/RW, Purchaser, Producer) Purchaser/Producer shall obtain delivery and procedure confirmation from DOE prior to delivery of other-than-standard waste (failed SNF and nonstandard SNF/HLW). DOE shall advise Purchaser/Producer within 60 days after receipt of confirmation request as to the technical feasibility of accepting of the other-than-standard waste on the currently agreed to schedule, and any schedule adjustment for such services. [10CFR961.11 Article VI.A.2(b)] B. (Producer) Producer shall submit action plan for correction or disposition of nonconforming waste for verification and documented approval. The action plan must adequately identify and describe the nonconformance and any action to change or correct the existing nonconformance. The action plan must be signed by authorized personnel/organization. [DOE/RW-0333P]
87	DOE/RW-0351P, rev.1, 3.7.1.2.9 Final Delivery Schedules A. (Purchaser) The Purchaser shall submit to DOE, not less than 12 months prior to delivery, final delivery schedule(s) (FDS) as specified in 10CFR961.11 Appendix D. [10CFR961.11 Article V.C] B. (DOE/RW, Purchaser) DOE shall approve or disapprove a FDS within 45 days after receipt. In the event of disapproval, DOE must advise the Purchaser in writing of the reasons, and request a revised schedule. The Purchaser shall submit the revised schedule within 30 days after receipt of DOE's notice of disapproval. [10CFR961.11 Article V.C] C. (DOE/RW) DOE shall approve or disapprove the revised FDS submitted by the Purchaser within 60 days after receipt If DOE disapproves the revised schedule, the reasons for disapproval must be provided in writing to the Purchaser, along with DOE's proposed schedule. If these are not acceptable to the Purchaser, the parties must promptly seek to negotiate mutually acceptable schedules. [10CFR961.11 Article V.C]
88	DOE/RW-0351P, rev.1, 3.7.1.2.10 Final Description of Waste (Purchaser, Producer) Except as otherwise agreed to by DOE, the Purchaser/Producer shall describe in writing the material in each shipping lot 60 days prior to the scheduled DOE transportation of that shipping lot. [10CFR961.11 Article IV.A.2(b)]

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

89	DOE/RW-0351P, rev.1, 3.7.3.2.1 Shipping Records (Purchaser, Producer) The Purchaser/Producer shall provide written documentation and certification: A. (Purchaser, Producer) Of cask conditions and contents (including but not limited to SNF matrixed to the unique MPC identifier) prior to transfer to the receiving party in accordance with 10CFR961.11 Article VI.B.2. [10CFR71.5a] [10CFR961.11 Article VI.B.2] B. (Purchaser, Producer) That the transportation cask subsystem (including the MPC, if applicable) has been packaged to meet DOE, DOT, and NRC requirements, and to transfer care, custody and control of the shipment. [10CFR40.13(c)(6)] [10CFR71.5a] [10CFR961.11 Article VI.B.2] [10CFR961.11 Appendix E.B.6(c)] [49CFRI72.204(a)] C. (Purchaser, Producer) Of the name of each radionuclide that is listed in 49CFRI73.435, in order of decreasing radiotoxicity, whose activity comprises 1% or greater of the total activity at the time of shipment. [Derived] D. (Producer only) That the standard HLW form did not exceed 400 Degrees C to ensure the glass transition temperature was not exceeded. [Derived] E. (Producer only) Of the hazardous waste classification for land disposal. [40CFR262] F. (Purchaser) Of the sealing and inspection of the MPC welds. [10CFR60.135(a)]
90	DOE/RW-0351P, rev.1, 3.7.3.2.3 Routine Determinations (Purchaser, Producer) Prior to each shipment of licensed material, the Purchaser/Producer shall ensure the transportation cask with its contents satisfies the applicable requirements of 10CFR71.87. [10CFR71.87]
91	DOE/RW-0351P, rev.1, 3.7.3.2.4(A) Title Transfer A. (DOE/RW) Delivery and acceptance in writing by DOE of any SNF and/or HLW at a DOE facility shall constitute a transfer of title to DOE of the SNF and/or HLW. [NWPA Section 123] [10CFR961.11 Article I-101] [10CFR961.11 Article II]
92	DOE/RW-0351P, rev.1, 3.7.3.2.4(B) B. (DOE/RW, Producer) DOE/OCRWM shall accept HLW at a designated loading facility adjacent to the Producer's HLW facility. [DHLW: MOA between DP and RW, 1986] [CHLW: Derived] <TBR>
93	DOE/RW-0351P, rev.1, 3.7.3.2.4(C) C. (DOE/RW, Purchaser, Producer) Title to SNF and/or HLW shall transfer to DOE at the Purchaser/Producer site. DOE shall be solely responsible for control of all I material upon transfer of title. DOE has the right to dispose, as it sees fit, of any SNF and/or HLW to which it has taken title. Purchasers/Producers shall have no claim against DOE or the Government for such SNF or HLW, nor shall the Government be obligated to compensate the Purchaser/Producer for such material. [Purchaser: 10CFR961.11 Article VII] [Producer: Derived]
94	DOE/RW-0351P, rev.1, 3.7.3.2.5 Observation by DOE A. (DOE/RW, Purchaser, Producer) DOE/OCRWM may designate a representative(s) to observe the preparatory activities conducted at the *Purchaser/Producer site. The Purchaser/Producer shall allow the designated representative(s) access to the site.* [Purchaser: 10CFR961.11 Article IV.A.2(a)] [Producer: Derived] B. (DOE/RW, Purchaser, Producer) DOE/OCRWM shall verify the description of the SNF and/or HLW during MPC and transportation cask loading and prior to acceptance, in accordance with 10CFR961.11 Appendices E and F. [10CFR961.11 Article VI.B.2] C. (WA) WA shall have the capability to inspect, verify, and record the identification numbers, description, and characteristics of: (1) SNF prior to loading into an MPC or a transportation cask (2) HLW prior to loading into a transportation cask (3) Loaded MPC prior to loading into a transportation cask. [10CFR961.11 Article VI.B.21 [CRD 3.2.1.1.A]

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

95	DOE/RW-0351P, rev.1, 3.7.3.2.6 Notification of Improperly Described Waste Prior to Acceptance into CRWMS (WA, Purchaser, Producer) If SNF and/or HLW is determined by WA to be improperly described prior to acceptance by DOE/OCRWM at the Purchaser/Producer site, WA shall promptly notify the Purchaser/Producer in writing. DOE/OCRWM reserves the right to refuse to accept improperly described waste. The Purchaser/Producer must not transfer title of improperly described SNF and/or HLW unless DOE/OCRWM agrees to accept title under other arrangements agreed to in writing by the parties. [Purchaser: 10CFR961.11 Article VI.B.3(a)] [Producer: DOE/RW-0333P]
96	DOE/RW-0351P, rev.1, 3.7.3.2.8 Initial Inventory Reporting (WA, Purchaser) A Material Balance Report (DOE/NRC Form-742) shall be completed and distributed reporting initial inventory. [10CFR72.76] [10CFR75.31] [10CFR75.32] [CRD 3.3.8.2C]
97	DOE/RW-0351P, rev.1, 3.7.4.2.1 Resolution of Improperly Described Waste After Acceptance into CRWMS (WA, Purchaser, Producer) If subsequent to its acceptance, WA finds SNF and/or HLW is improperly described, WA shall promptly notify the Purchaser/Producer in writing of such a finding. In this event, the Purchaser/Producer must provide WA with a proper description within 30 days. In the event that the Purchaser/Producer fails to provide the proper description, DOE may hold in abeyance any and all further deliveries scheduled. [10CFR961.11 Article VI.E.3(b)] [DOE/RW-0333P]
98	DOE/RW-0351P, rev.1, 3.9 QUALIFICATION/QUALITY ASSURANCE (WA, Purchaser, Producer) WA shall require the following of the Purchaser/Producer: A. (Producer) The Producer shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria of the DOE OCRWM Quality Assurance Requirements and Description (QARD), and satisfying any specific provisions which are applicable to WA activities. [DOE/RW-0333P] B. (Producer) The Producer quality assurance program shall cover the activities from the time of waste form production through waste acceptance. [DOE/RW-0333P] C. (Producer) The Producer shall prepare and maintain documentation sufficient to demonstrate canistered waste form compliance with the WA-SRD, WCP, and WQR as lifetime QA records. Copies of these records must be made available to the Federal Repository Operator at the time the repository is ready to begin accepting canistered waste forms from the Producer. Other documentation generated during preparation and implementation of the WCP and WQR must be collected and maintained as nonpermanent records. [DOE/RW-0333P] D. (Purchaser, Producer) The Purchaser/Producer shall handle notification and disposition of other-than-standard SNF and canisters of HLW in accordance with section 3.7.1.2.8. [10CFR961.11 Article VI.A.2(b)][DOE/RW-0333P] E. (Purchaser) The Purchaser shall have a quality assurance program approved by the Nuclear Regulatory Commission that satisfies the criteria in 10CFR50 Appendix B or other appropriate regulation. [10CFR50 Appendix B]
99	DOE/WIPP-069, rev.4, 3.4.2(R) Remote-Handled Waste The fissile or fissionable radionuclide content of RH-TRU waste packages shall not exceed 600 g total (in Pu-239 FGE).
100	DOE4330.4B Maintenance Management Program The Maintenance management program for all DOE property be consistent with this Order and that all DOE property be maintained in a manner which promotes operational safety, worker health, environmental protection and compliance, property preservation, and cost-effectiveness while meeting the programmatic mission. Structures systems, and components that are important to safe operation shall be subject to a maintenance program in order to meet or exceed their design requirements throughout their life. Periodic inspection of structures, systems, components, and equipment be performed to determine deterioration or technical obsolescence which threaten performance and/or safety.
101	DOE5480.4, Environmental Protection, Safety and Health Protection The Purpose of this Order is to specify and provide requirements for the application of the mandatory environmental protection, safety, and health (ES&H) standards applicable to all Department of Energy (DOE) and DOE contractor operations, to provide a listing of reference ES&H standards; and to identify the sources of the mandatory and reference ES&H standards. This Order shall be followed during facility design, construction, operation, modification, and decommissioning.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

105 *DOE5480.11, Chapter 0, 9.1*

(f)(1) The annual effective dose equivalent to an individual shall be determined by summing the annual effective dose equivalents from internally deposited radionuclides and from external exposure to radioactive material and/or radiation generating devices resulting from DOE activities. When in-vivo and/or in-vitro measurements confirm the retention of radionuclides in the body, with respect to evaluating conformance with the limiting value for occupational exposure, the annual effective dose equivalent due to all radionuclides retained in the body from these intakes shall be assessed for as long as the annual effective dose equivalent is 10 mrem or greater. Exposures to the skin, extremities, and lens of the eye are not included in the determination of the annual effective dose equivalent. For uniform external irradiation of the whole body, a weighting factor (Wt) equal to one may be used. This whole body dose is to be measured in accordance with the provisions in paragraph 9g(1). Non-uniform external and internal irradiation values of Wt for organs and tissues are defined in paragraph 8e(12).

(2) Non-Uniform Exposure to Skin. For non-uniform exposures to skin from x rays, beta radiation, or skin contamination, one of the following assessments shall be made and recorded:

(a) When the area of skin exposed is >100 cm2 the maximum value of dose averaged over any area of 100 cm2 is to be assessed, recorded, and included in the annual skin (shallow) dose equivalent.

(b) When the area of skin exposed is >10 cm2 but <100 cm2 the dose equivalent to that tissue is to be determined by:

$$H = fD$$

where: D is the maximum dose averaged over a 1 cm2 of skin and f is the fraction of skin exposed compared to 100 cm2. In no case shall an "f" of <0.1 be used. This value of dose is to be recorded and included in the annual skin (shallow) dose equivalent.

(c) When the area of skin exposed is <10 cm2 the maximum value of dose averaged over any 1 cm2 is to be assessed and recorded in the individual"s occupational exposure history as a special entry but is not to be included in the annual skin (shallow) dose equivalent.

(3) Emergency or Accidental Exposures. When an occupational worker has been exposed to radiation in excess of the limits specified in this Order as a result of an unplanned or accidental situation, the decision to allow the worker to return to work in a radiological area shall be made by *operating management based on advice from health physics and medical personnel* and the concurrence of the worker and shall be subject to the approval of the DOE field organization manager. The dose received in an unplanned or accidental situation is to be documented in the radiation exposure record of the exposed individual pursuant to paragraph 9m(2) and reported pursuant to DOE 5484.1. The operating contractor is to verify to the head of the responsible field organization that the conditions under which the emergency or accidental exposures were received have been eliminated. The resumption of operations following an emergency or accidental exposure in excess of the occupational limits specified in this Order shall be subject to the approval of the head of the responsible field organization. Investigations and reporting shall be conducted pursuant to DOE 5484.1 and DOE 5000.3.

(4) Air and Water Concentration Guides.

(a) Air. Derived air concentration (DAC) values for control of the workplace are given in Attachment 1. They were derived from the ICRP Publication 30 values for committed effective dose equivalent values, translated to conventional U.S. units of rem and curie. The ICRP Publication 23 recommended annual inhalation volume for male workers (40 hr/wk, 50 wk/yr) was assumed to be 2400 m 3. The DAC values or other air concentration values shall not be used for the calculation of internal dose equivalent received by a worker except for unusual circumstances where bioassay data is unavailable or inadequate.

(b) Water. Concentrations of radionuclides in drinking water in controlled areas shall not exceed the standards given in 40 CFR Part 141.

(5) Quality Factors. The dose equivalent limits specified in this chapter are expressed in terms of rem; this requires that the absorbed dose (expressed in rads) be multiplied by an appropriate quality factor (Q). The quality factors to be used for determining dose equivalent in rem are shown in Figures 2 and 3.

RADIATION TYPE	QUALITY FACTOR (Q)*
X-rays, gamma rays, positrons, electrons (including tritium beta particles)	1
Neutrons, <= 10 keV	3
Neutrons, > 10 keV	10
Protons and singly-charged particles of unknown energy with rest mass greater than one atomic mass unit	10
Alpha particles and multiple-charged particles (and particles of unknown charge) of unknown energy	20

* Where spectral data is sufficient to identify the energy of the neutrons, the Q values in Figure 3 may be used.

Figure 2 Quality Factors

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

	NEUTRON NEUTRON ENERGY MeV Q[bar] FLUX DENSITY cm -2 S -1 2.5 x 10-8 (thermal) 2 680 1 x 10-7 2 680 1 x 10-6 2 560 1 x 10-5 2 560 1 X 10-4 2 580 1 x 10-3 2 680 1 x 10-2 2.5 700 1 x 10-1 7.5 115 5 x 10-1 11 27 1 11 19 2.5 9 20 5 8 16 7 7 17 10 6.5 17 14 7.5 12 20 8 11 40 7 10 60 5.5 11 1 x 10 2 4 14 2 x 10 2 3.5 13 3 x 10 2 3.5 11 4 x 10 2 3.5 10 Mean quality factors, Q,* and values of neutron flux density which, in 40 hours, result in a maximum dose equivalent of 100 mrem. * Maximum value of Q in a 30-cm dosimetry phantom. Figure 3 Quality Factors for Neutrons
106	DOE5480.11, Chapter 0, 9.j j. Radiation exposure rates in controlled workplace areas should be reduced to as low as reasonably achievable levels by proper facility design and control. The primary means for maintaining exposures as low as reasonably achievable are to be through physical controls, e.g., confinement, ventilation, remote handling, and shielding. Administrative controls and procedural requirements are to be considered supplemental means to achieve control. (1) Design. During the design of facilities, the following objectives shall be applied: (a) Optimization. Optimization principles, as discussed in ICRP Publication 37, are to be utilized in developing and justifying facility design and physical controls. (b) External Radiation Exposure. The design objectives for personnel exposure from external sources of radiation in continuously occupied controlled areas are ALARA and not exceeding 0.5 mrem (5 microsieverts) per hour on average. The design objectives for exposure rates for potential exposure to a radiation worker where occupancy is generally not continuous are ALARA and not exceeding 20 percent of the applicable standard in paragraphs 9b(1) and (2). (c) Internal Radiation Exposure. As a design objective, exposure of personnel to inhalation of airborne radioactive materials is to be avoided under normal operating conditions to the extent reasonably achievable. This will normally be accomplished by confinement and ventilation. (d) Maintenance. Decontamination, and Decommissioning. Ease of maintenance and decontamination and decommissioning is to be considered in facility design and selection of materials. (2) Control. During routine operations, the combination of design and control procedures shall provide that, with respect to the radiological workplace, the anticipated magnitude of the prospective committed effective dose equivalent from intakes plus any effective dose equivalent from external exposure will not exceed 5 rem (0.05 sievert) in a year, and the anticipated magnitude of the committed dose equivalent to any organ or tissue from intakes plus any dose equivalent from external exposure will not exceed 50 rems (0.5 sievert) in a year. Compliance with these requirements shall be demonstrated through appropriate workplace monitoring pursuant to the provisions of paragraph 9q(3).
107	DOE5480.19 Conduct of Operations Requirements for DOE Facilities It is the policy of the Department that the conduct of operations at DOE facilities be managed with a consistent and auditable set of requirements, standards, and responsibilities.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

108	**DOE5480.21, Unreviewed Safety Questions** In accordance with this Order, a contractor authorized to operate DOE nuclear facilities shall: 1) Perform all safety evaluations required by paragraph (b) of this section to determine whether a situation involves USQ; 2) Prior to implementation of a proposed action, obtain PSO approval for situations determined to involve a USQ or a Technical Safety Requirements (TSR) change; and 3) Develop and implement procedures to govern the need for, and the performance of, safety evaluations under this section.
109	**DOE5480.22, Technical Safety Requirements** *In accordance with this Order, a contractor responsible for the operation of a DOE nuclear facility shall:* 1) prepare Technical Safety Requirements for the facility; 2) submit the Technical Safety Requirements to the PSO for approval; and 3) operate the facility in accordance with the Technical Safety Requirements as approved by the PSO including any modificatin by the PSO.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

110	**DOE5480.23, 8 Perform Safety Analysis** 8. REQUIREMENTS. A contractor, as designated in writing by the PSO, who is responsible for the design, construction, or operation of DOE nuclear facilities shall be required to perform a safety analysis that develops and evaluates the adequacy of the safety basis for each such facility. The safety basis to be analyzed shall include management, design, construction, operation, and engineering characteristics necessary to protect the public, workers, and the environment from the safety and health hazards posed by the nuclear facility or nonfacility nuclear operations. All contractors shall be held responsible for adhering to assumptions and commitments set forth in the safety analysis. Contractors shall be required to prepare, and shall submit to DOE for its approval, SARs documenting safety analyses for each DOE nuclear facility under their cognizance. Contractors responsible for conducting one or more nonfacility nuclear operations are required to maintain up to date analyses of the safety of such operations and analyses documented in a form that is auditable by DOE. Attachment I provides guidance in greater detail than the requirements of this Order. a. Graded Approach for the Level of Analysis. (1) Justification for the level of analyses and documentation for each hazard considered shall be provided as part of the plan and schedule submitted in accordance with paragraph 9(b)(2) of this Order. The level of analysis and documentation for each facility must be commensurate with: (a) The magnitude of the hazards being addressed; (b) The complexity of the facility and/or systems being relied on to maintain an acceptable level of risk; and (c) The stage or stages of the facility life cycle for which DOE approval is sought. (2) This application of the graded approach is specific for the SAR. b. Scope and Content of Safety Analysis Reports. (1) SARs shall define the safety basis, document the logic of its derivation, demonstrate adherence to the safety basis, and justify its adequacy. (2) Each SAR required by this Order shall include thorough documentation of the assumptions employed in the safety analysis. (3) A SAR shall include the results of the safety analysis that identifies the dominant contributors to the risk of the facility so that these vulnerabilities can be better managed. The safety analysis report shall address the following topics: (a) Executive summary; (b) Applicable statutes, rules, regulations and Departmental Orders; (c) Site characteristics; (d) Facility description and operation, including design of principal structures, components, all systems, engineered safety features, and processes; (e) Hazard analysis and classification of the facility; (f) Principal health and safety criteria; (g) Radioactive and hazardous material waste management; (h) Inadvertent criticality protection; (i) Radiation protection; (j) Hazardous material protection; (k) Analysis of normal, abnormal, and accident conditions, including design basis accidents; assessment of risks; consideration of natural and manmade external events; assessment of contributory and casual events, mechanisms, and phenomena; and evaluation of the need for an analysis of beyond-design-basis accidents; however, the SAR is to exclude acts of sabotage and other malevolent acts since these actions are covered under security protection of the facility.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

	(l) Management, organization, and institutional safety provisions; (m) Procedures and training; (n) Human factors; (o) Initial testing, inservice surveillance, and maintenance; (p) Derivation of TSRs; (q) *Operational safety*; (r) Quality assurance; (s) Emergency preparedness; (t) Provisions for decontamination and decommissioning; and (u) Applicable Facility design codes and standards. c. Hazard Classification for Nuclear Facilities and Operations. Contractors shall be required to perform a hazard analysis of their nuclear activities and classify their processes, operations, or activities in accordance with the following requirements: (1) Classification Categories. The consequences of unmitigated releases of radioactive and/or hazardous material shall be evaluated and classified by the following hazard categories: (a) Category 1 Hazard. The hazard analysis shows the potential for significant offsite consequences. *(b) Category 2 Hazard. The hazard analysis shows the potential for significant onsite consequences.* (c) Category 3 Hazard. The hazard analysis shows the potential for only significant localized consequences. (2) Inventory of Hazardous Materials. The hazard analysis shall be based on an inventory enveloping all radioactive and nonradioactive hazardous materials that are stored, utilized, or may be formed within a nuclear facility. (3) Evaluation of Potential Releases. The hazard analysis shall identify energy sources or processes that might contribute to the generation or uncontrolled release of hazardous materials. The hazard analysis shall estimate the consequences of accidents in which the facility or process and/or materials in the inventory are assumed to interact, react, or be released in a manner to produce a threat or challenge to the health and safety of individuals on site and off site. (4) Submission of Hazard Analysis to DOE. The hazard analysis shall be submitted to DOE for approval in accordance with the safety analysis plan and schedule required by paragraph 9(b)(2) of this Order. d. Document Control. Contractors with the primary responsibility for the design, construction, operation, or decommissioning of DOE nuclear facilities must maintain such document control as may be necessary to ensure that all users of SARs and their supporting documentation *designated by DOE or the contractor as authorized users, including DOE line management and the Department's safety oversight groups, have* current editions.
111	DOE5480.24, Nuclear Criticality Safety The contractor criticality safety program for nuclear facilities shall include the requirements of, and be in accordance with, this Order.
112	DOE5820.2A, Chapter I, 3.a(1)(b) (b) Designs for new storage and treatment facilities shall meet the requirements of DOE 6430.1, applicable EM Orders and 40 CFR 264.
113	DOE5820.2A, Chapter I, 3.b(2)(j) (b)(2)(j) Each facility shall utilize remote maintenance features and other appropriate techniques to minimize personnel radiation exposure in accordance with *DOE 5481.1B*.
114	DOE5820.2A, Chapter I, 3.b(7)(c) (b)(7)(c) The chemistry of liquid high-level waste shall be adjusted to control corrosion within design limits for the storage system.
115	DOE5820.2A, Chapter I, 3.b(7)(d) (b)(7)(d) Treatment reagents shall not be placed in a tank system without proven effective mitigative action if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, or otherwise fail.
116	DOE5820.2A, Chapter I, 3.c(2)(g) (c)(2)(g) Each facility shall use remote maintenance features and other appropriate techniques to maintain personnel radiation exposure as low as reasonably achievable.

TANK WASTE REMEDIATION SYSTEM

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Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

117	DOE5820.2A, Chapter II, 3.b(2) (b)(2) Transuranic waste shall be assayed or otherwise evaluated to determine the kinds and quantities of transuranic radionuclides present prior to storage. Additionally, hazardous waste components shall be estimated or analyzed, whichever is appropriate.
118	DOE5820.2A, Chapter II, 3.c (c) Transuranic Waste Certification. (1) Transuranic waste shall be certified, pursuant to the Waste Isolation Pilot Plant-Waste Acceptance Criteria, placed in interim storage, and sent to the Waste Isolation Pilot Plant when it becomes operational. (2) Uncertified transuranic waste shall not be sent to the Waste Isolation Pilot Plant except by special permission granted in response to a formal, documented request to the Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee and the Waste Isolation Pilot Plant Waste Operations. (3) All transuranic waste certification sites shall prepare a certification plan which describes how the waste meets each waste acceptance criterion described in the WIPP-DOE-069 (see Attachment 1, page 3, paragraph 18). (4) Each certification plan shall define controls and other measures to ensure that each element of the certification plan is performed adequately as described. Requirements for these quality assurance activities are described in the WIPP-DOE-120 (see Attachment 1, page 2, paragraph 19). (5) Certification plans, including associated quality assurance plans, shall be submitted for review, comment, and approval by the Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee. (6) The Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee shall submit certification and associated quality assurance plans to the state of New Mexico"s Environmental Evaluation Group for review and comment prior to granting formal approval of such plans. (7) The Environmental Evaluation Groups"s comments on certification and associated quality assurance plans shall be resolved between the affected site and the Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee prior to granting formal approval of the plans. (8) Approved certification and associated quality assurance plans shall be implemented by the generating sites using specific, written operational procedures. (9) Certification activities conducted under approved plans and procedures shall be audited periodically, in accordance with a written audit program plan on a continuing basis by the Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee. An Environmental Evaluation Group representative may accompany the Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee audit team as an observer during site audits. The Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee may grant certifying authority to the site following successful completion of an audit. (10) The Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee shall issue a formal audit report to the responsible field organization following the completion of an audit. The audit report shall describe the activities of the Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee audit team and include a record of any findings, observations, and recommendations. Corrective actions taken as a result of a finding shall be verified on subsequent audits. The Waste Isolation Pilot Plant-Waste Acceptance Criteria Certification Committee shall institute a tracking system to ensure timely resolution of findings, observations, recommendations, and the resultant corrective actions. (11) Failure to resolve and close out previous audit findings and recommendations or sending noncompliant waste to the Waste Isolation Pilot Plant when judged by the Waste Acceptance Criteria Certification Committee to be a serious violation shall result in suspension of certifying authority, pending satisfactory resolution.
119	DOE5820.2A, Chapter II, 3.d (d)(1) Newly generated transuranic waste shall be placed in noncombustible packaging that meets DOT requirements. (2) All Type A transuranic waste containers shall be equipped with a method to prevent pressure buildup. Acceptable pressure-relief devices include permeable gaskets, vent clips, and filtered vents. (3) The waste packages shall be marked, labeled, and sealed in accordance with the Waste Isolation Pilot Plant-Waste Acceptance Criteria, EPA, and DOT requirements, as defined in the WIPP-DOE-069, 40 CFR 262, Subpart C, and 49 CFR 172, Subparts D, E, and 49 CFR 173, Subpart I, where applicable, prior to shipping.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

120	DOE5820.2A, Chapter II, 3.f (f) Transportation/Shipping to the Waste Isolation Pilot Plant. (1) Transuranic waste shipments shall comply with the provisions of DOE and DOE regulations, pursuant to DOE 1540.1. (2) Transuranic waste shipments by truck shall be by a DOE-controlled carrier system. All transuranic waste shall be transported in certified Type B packaging. (3) Shipping papers shall provide the information required by DOT (49 CFR 172, Subpart C), the Waste Isolation Pilot Plant Data Package (WIPP DOE-157), and, as necessary, the manifest required by EPA (40 CFR 261, and 262). (4) Distribution of the shipping papers shall be as follows: (a) Shipper - one copy (or more); (b) Carrier - one copy; and (c) Waste Isolation Pilot Plant - two copies. A copy of the papers will be returned by the Waste Isolation Pilot Plant to the shipper after emplacement of the waste at the Waste Isolation Pilot Plant. (5) Appropriate EPA and State authorizations/permits shall be obtained for the transport system, as applicable. (6) Placarding of shipments shall be carried out, as required by the regulations of DOT (contained in 49 CFR 172, Subpart F). (7) All shipments of transuranic waste shall be in or on "exclusive use" vehicles, as defined in 49 CFR 173. Shipments shall be made as expeditiously as possible and shall be tracked from origin to destination using a real-time tracking communications system. Deviations from "preferred routes," delays and other irregularities detected by the system shall be investigated by the responsible traffic manager and a report sent to the Waste Isolation Pilot Plant within 90 days. (8) The Albuquerque Operations Office shall develop a transuranic waste transportation management and operations plan which addresses, but is not limited to, the following considerations: (a) Communication between transport vehicle and traffic management; (b) Shipment tracking in transit; (c) Security; (d) Emergency notification/response; (e) Shipment routing; (f) Shipment notification as appropriate; (g) Driver training and qualifications; (h) Vehicle maintenance and inspection; (i) State surveillance and inspection; and (j) Inspection and recertification of transport packagings.
121	DOE5820.2A, Chapter II, 3.f(1-2) (f)(1) Transuranic waste shipments shall comply with the provisions of DOE and DOE regulations, pursuant to DOE 1540.1. (2) Transuranic waste shipments by truck shall be by a DOE-controlled carrier system. All transuranic waste shall be transported in certified Type B packaging.
122	DOE5820.2A, Chapter III, 2.c c. DOE-low-level waste shall be disposed of on the site at which it is generated, if practical, or if on-site disposal capability is not available, at another DOE disposal facility.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

123	DOE5820.2A, Chapter III, 3.k k(1) Each operational or non-operational low-level waste treatment, storage, and disposal facility shall be monitored by an environmental monitoring program that conforms with DOE 5484.1 and, at a minimum, meet the requirements of paragraph 3K(2) through 3K(4). (2) The environmental monitoring program shall be designed to measure: (a) operational effluent releases; (b) migration of radionuclides; (c) disposal unit subsidence; and (d) changes in disposal facility and disposal site parameters which may affect long-term site performance. (3) Based on the characteristics of the facility being monitored, the environmental monitoring program may include, but not necessarily be limited to, monitoring surface soil, air, surface water, and, in the subsurface, soil and water, both in the saturated and the unsaturated zones. (4) The monitoring program shall be capable of detecting changing trends in performance sufficiently in advance to allow application of any necessary corrective action prior to exceeding performance objectives. The monitoring program shall be able to ascertain whether or not effluents from each treatment, storage, or disposal facility or disposal site meet the requirements of applicable EH Orders.
124	DOE5820.2A, Chapter V, 3.a 3. REQUIREMENTS. DOE organizations shall develop and document their programs to provide for the surveillance, maintenance, and decommissioning of contaminated facilities. The decommissioning programs shall be implemented as follows: a. General. (1) Each field organization shall prepare and maintain a complete list of contaminated facilities both operational and excess under its jurisdiction. A continuous record of jurisdictional program responsibility for all contaminated facilities shall be maintained by the cognizant field organization for use in assigning decommissioning responsibility. (2) Operational records (e.g., facility design drawings and modifications, characterization data on contamination levels, prior decontamination activities, and incident reports required by DOE Orders) for all contaminated facilities shall be maintained by the cognizant field organization for use in preparing decommissioning plans. (3) Planning for facility decommissioning shall be initiated during the design phase for new facilities and prior to termination of operations for existing operational facilities. Such plans shall consider the 2-year budget cycle to assure adequate funding availability. (4) Program offices shall be responsible for placing the facility in a safe storage condition, providing surveillance and maintenance, and decommissioning the facilities under their jurisdiction when they become excess to programmatic needs, or for finding another programmatic sponsor for them. For multiple user facilities, the program office shall determine decommissioning liability for user program offices based on each program"s overall contribution to the contamination or some other mutually acceptable basis. This cost sharing formula may be applied when the facility is placed in safe storage or during surveillance and maintenance, when appropriate. (5) Responsibility for contaminated facilities may be transferred from one program organization to another by mutual agreement of the programs involved. The program organization to which a facility is transferred shall accept full responsibility for surveillance, maintenance, and decommissioning of the facility according to the requirements of this Order. Agreements to transfer facilities for functional purposes shall be in writing and shall identify explicitly the concurrent transfer of responsibility for surveillance, maintenance, and decommissioning. (6) The DP and NE decommissioning programs exist for the primary purpose of managing and decommissioning the contaminated facilities currently assigned to them. Other contaminated facilities that have no programmatic sponsor, or that are excess to program needs and have a current sponsor, shall be assigned to the DP and NE programs for management and decommissioning with the approval of the program secretarial officers involved or their designees. (7) Decommissioning expertise gained by DOE and its contractors is available at most major DOE facilities, and should be utilized by DOE programs. A computerized Decommissioning Technology data base is maintained at the Richland Operations Office. Published reports on nuclear facility decommissioning may be obtained from the Remedial Action Program Information Center at Oak Ridge National Laboratory.
125	DOE5820.2A, Chapter V, 3.a(2) a(2) Operational records (e.g., facility design drawings and modifications, characterization data on contamination levels, prior decontamination activities, and incident reports required by DOE Orders) for all contaminated facilities shall be maintained by the cognizant field organization for use in preparing decommissioning plans.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

126	DOE5820.2A, Chapter V, 3.a(5) a(5) Responsibility for contaminated facilities may be transferred from one program organization to another by mutual agreement of the programs involved. The program organization to which a facility is transferred shall accept full responsibility for surveillance, maintenance, and decommissioning of the facility according to the requirements of this Order. Agreements to transfer facilities for functional purposes shall be in writing and shall identify explicitly the concurrent transfer of responsibility for surveillance, maintenance, and decommissioning.
127	DOE5820.2A, Chapter V, 3.b Facilities in which radioactive or hazardous materials are utilized shall be designed to simplify decontamination and decommissioning and/or increase the potential for reuse. Features and procedures that simplify and facilitate decommissioning shall be identified during the planning and design phase based upon a proposed decommissioning method or conversion to other use.
128	DOE5820.2A, Chapter V, 3.c c. Post-Operational Activities. (1) DOE Program organizations shall identify contaminated facilities under their jurisdiction, document the potential for reuse and recovery of materials and equipment, and develop schedules for decommissioning them. Projects consisting of one or more facilities shall be identified as appropriate, and priorities shall be developed based on: (a) Maintaining employee and public health and safety, (b) Protection of the environment, (c) Compliance with the National Environmental Policy Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Superfund Amendments and Reauthorization Act, and other contractual or legal requirements, (d) Cost effective program management (e.g., maintaining manpower pools, selecting economical decommissioning alternatives), and (e) Future site plans. (2) Program organizations shall assure that, prior to initiation of decommissioning activities, adequate surveillance and maintenance is performed for their surplus facilities to meet applicable radiation protection (DOE 5480.1B), hazardous chemical and safety standards, to maintain physical safety and security, and to reduce potential public and environmental hazards. All high-level waste and stored hazardous materials should be removed by the operator as part of the last operational activities prior to entering into the decommissioning phase.
129	SEN-35-91 DOE facilities will be designed, constructed, operated, and decommissioned to assure the protection of the public, workers, and the environment. DOE has adopted two quantitative safety goals to limit the risks of fatalities associated with its nuclear operations. These goals are the same as those established for nuclear powerplants by the Nuclear Regulatory Commission (NRC) and, like the NRC goals, should be viewed as aiming points for performance. The goals are: The risk to an average individual in the vicinity of a DOE nuclear facility for prompt fatalities that might result from accidents should not exceed one tenth of one percent (0.1%) of the sum of prompt fatalities resulting from other accidents to which members of the population are generally exposed. For evaluation purposes, individuals are assumed to be located within one mile of the site boundary. The risk to the population in the area of a DOE nuclear facility for cancer fatalities that might result from operations should not exceed one tenth of one percent (0.1%) of the sum of all cancer fatality risks resulting from all other causes. For evaluation purposes, individuals are assumed to be located within 10 miles of the site boundary. In striving to reach these goals, DOE nuclear facilities and activities shall be designed, constructed, operated, and decommissioned with: a) appropriate barriers to prevent or minimize potential radioactive releases; b) engineered safety features to minimize potential releases; and c) procedural controls to mitigate the effects of potential releases. These goals shall be addressed for both new and existing facilities. Proposed modifications to existing facilities to achieve these goals shall be prioritized along with other proposed modifications based on their safety significance. DOE shall pursue the evolution of additional potential safety goals for plant and co located workers to support enhanced safe operations of its facilities.
130	WAC173-303-070

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

131	WAC173-303-071(3)(l) (l) Samples: (i) Except as provided in (l)(ii) of this subsection, a sample of solid waste or a sample of water, soil, or air, which is collected for the sole purpose of testing to determine its characteristics or composition, is not subject to any requirements of this chapter, when: (A) The sample is being transported to a lab for testing or being transported to the sample collector after testing; or (B) The sample is being stored by the sample collector before transport, by the laboratory before testing, or by the laboratory after testing prior to return to the sample collector; or (C) The sample is being stored temporarily in the laboratory after testing for a specific purpose (for example, until conclusion of a court case or enforcement action). (ii) In order to qualify for the exemptions in (l)(i) of this subsection, a sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector must: (A) Comply with United States Department of Transportation (DOT), United States Postal Service (USPS), or any other applicable shipping requirements; or (B) Comply with the following requirements if the sample collector determines that DOT or USPS, or other shipping requirements do not apply: (I) Assure that the following information accompanies the sample: (AA) The sample collector's name, mailing address, and telephone number; (BB) The laboratory's name, mailing address, and telephone number; (CC) The quantity of the sample; (DD) The date of shipment; (EE) A description of the sample; and (II) Package the sample so that it does not leak, spill, or vaporize from its packaging. (iii) This exemption does not apply if the laboratory determines that the waste is dangerous but the laboratory is no longer meeting any of the conditions stated in (l)(i) of this subsection;
132	WAC173-303-072

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

133	**WAC173-303-090** (1) Purpose. "he purpose of this section is to set forth characteristics which a solid waste might exhibit and which would cause that waste to be a *dangerous waste.* (2) Representative samples. The department will consider a sample obtained using any of the applicable sampling methods described in WAC 173-303-110(2), sampling and testing methods, to be a representative sample. *(3) Equivalent test methods. The testing methods specified* in this section shall be the only acceptable methods, unless the department approves an equivalent test method in accordance with WAC 173-303-910(2). (4) Quantity exclusion limit. A solid waste is a dangerous waste if it exhibits one or more of the dangerous waste characteristics described in subsections (5), (6), (7), and *(8) of this section. If a person"s solid waste exhibits* one or more of these characteristics, then he shall be a dangerous waste generator (and may not be considered a small quantity generator as provided in WAC 173-303-070(8)) if the quantity of his waste exceeds 220 lbs. (100 kg) per month or per batch. (5) Characteristic of ignitability. (a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties: (i) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60 degrees C (140 degrees F), as determined by a Pensky-Martens *Closed Cup Tester, using the test method specified* in ASTM Standard D-93-79 or D-93-80, or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78; (ii) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and *persistently that it creates a hazard;* (iii) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation; or, (iv) It is an oxidizer as defined in 49 CFR 173.151. (b) A solid waste that exhibits the characteristic of ignitability, but is not designated as a dangerous waste under any of the dangerous waste lists, WAC 173-3C3-080 through 173-303-084, or dangerous waste criteria, WAC 173-303-101 through 173-303-103, shall be designated DW, and shall be assigned the dangerous waste number of D001. (6) Characteristic of corrosivity. (a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has any one or more of the following properties: (i) It is aqueous, and has a pH less than or equal to 2, or greater than or equal to 12.5, as determined by a pH meter using Method 5.2 in Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, available from the department; (ii) It is liquid, and corrodes steel (SAE 1020) at a rate greater than 0.250 inch (6.35 mm) per year at a test temperature of 55 degrees C (130 degrees F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods. The NACE Standard is available from the department; or (iii) It is solid or semi-solid, and when mixed with an equal weight of water results in a solution, the liquid portion of which has the property specified in (a)(i) of this subsection. Procedures for preparing and extracting the solution and liquid are described in the test procedures of WAC 173-303-110 (3)(a). (b) A solid waste that exhibits the characteristic of corrosivity, but is not designated as a dangerous waste under any of the dangerous waste lists, WAC 173-303-080 through 173-303-084, or dangerous waste criteria, WAC 173-303-101 through 173-303-103, shall be designated DW, and shall be assigned the dangerous waste number of D002. (7) Characteristic of reactivity. *(a) A solid waste exhibits* the characteristic of reactivity if a representative sample of the waste has any of the following properties: (i) It is normally unstable and readily undergoes violent change without detonating; (ii) It reacts violently with water; *(iii) It forms potentially explosive mixtures with water;* (iv) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environmen:; *(v) It is a cyanide or sulfide bearing waste which, when exposed to pH* conditions between 2 and 12.5 can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment; (vi) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement; (vii) *It is readily capable of detonation or explosive decomposition or reaction at standard temperature* and pressure; or (viii) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53, or a Class B explosive as defined in 49 CFR 173.88. (b) A solid waste that exhibits the characteristic *of reactivity, but is not designated as a dangerous* waste under any of the dangerous waste lists, WAC 173-303-080 through 173-303-084, or dangerous waste criteria, WAC 173-303-101 through 173-303-103, shall be designated DW, and shall be assigned the dangerous waste number of D003. (8) Toxicity characteristic. (a) A solid waste exhibits the toxicity characteristic if, using the Toxicity Characteristic Leaching Procedure (TCLP, found in Appendix II of 40 CFR Part 261 or available upon request from the department) or equivalent methods approved by the department under WAC 173-303-110(5), the extract from a representative sample of the waste contains any of the contaminants listed in the toxicity characteristic list in *(c) of this subsection, at* concentrations equal to or greater than the respective value given in the list. When the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in the TCLP, is considered to be the extract for the purposes of this subsection. (b) A solid waste that exhibits the toxicity characteristic, but is not designated as a dangerous waste under any of the dangerous waste *lists,* WAC 173-303-080 through 173-303-084, or dangerous waste criteria, WAC 173-303-101 through 173-303-103, has the dangerous waste number specified in the list which corresponds to the toxic contaminant causing it to be dangerous. (c) Toxicity characteristic list. Two levels of concentration are established for the contaminants listed. Any waste containing one or more

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

	contaminants with concentrations at or above the EHW threshold shall cause that waste to be designated EHW. Any waste containing contaminants which occur at concentrations at or above the DW threshold only (i.e., no EHW contaminants), shall be designated DW. TOXICITY CHARACTERISTICS LIST: Maximum Concentration of Contaminants for the Toxicity Characteristic ----------Dangerous (Chemical Waste Abstracts EHW DW Number Contaminant Services #)(mg/L) (mg/L) ----------D004 Arsenic (7440-38-2)500 5.0 D005 Barium (7440-39-3)10,000 100.0 D018 Benzene (71-43-2) 50 0.5 D006 Cadmium (7440-43-9)100 1.0 D019 Carbon tetrachloride (56-23-5) 50 0.5 D020 Chlordane (57-74-9) 3.0 0.03 D021 Chlorobenzene (108-90-7) 10,000 100.0 D022 Chloroform (67-66-3) 600 6.0 D007 Chromium (7440-47-3)500 5.0 D023 o-Cresol (95-48-7) /1/ 20,000 200.0 D024 m-Cresol (108-39-4) /1/ 20,000 200.0 D025 *p-Cresol* (106-44-5) /1/ 20,000 200.0 D026 Cresol /1/ 200.0 D016 2,4-D (94-75-7) 1,000 10.0 D027 1,4-Dichlorobenzene (106-46-7) 750 7.5 D028 1,2-Dichloroethane (107-06-2) 50 0.5 D029 1,1-Dichloroethylene (75-35-4) 70 0.7 D030 2,4-Dinitrotoluene (121-14-2) /2/ 13 0.13 D012 Endrin (72-20-8) 2 0.02 D031 Heptachlor (and its epoxide) (76-44-8) 0.8 0.008 D032 Hexachlorobenzene (118-74-1) /2/ 13 0.13 D033 Hexachlorobutadiene (87-68-3) 50 0.5 D034 Hexachloroethane (67-72-1) 300 3.0 D008 Lead (7439-92-1)500 5.0 D013 Lindane (58-89-9) 40 0.4 D009 Mercury (7439-97-6)20 0.2 D014 Methoxychlor (72-43-5) 1,000 10.0 D035 Methyl ethyl ketone (78-93-3) 20,000 200.0 D036 Nitrobenzene (98-95-3) 200 2.0 D037 Pentachlorophenol (87-86-5) 10,000 100.0 D038 Pyridine (110-86-1) /2/ 500 5.0 D010 Selenium (7782-49-2)100 1.0 D011 Silver (7440-22-4)500 5.0 D039 Tetrachloroethylene (127-18-4) 70 0.7 D015 Toxaphene (8001-35-2)50 0.5 D040 Trichloroethylene (79-01-6) 50 0.5 D041 2,4,5-Trichlorophenol (95-95-4) 40,000 400.0 D042 2,4,6-Trichlorophenol (88-06-2) 200 2.0 D017 2,4,5-TP (Silvex) (93-72-1) 100 1.0 D043 Vinyl chloride (75-01-4) 20 0.2 /1/ *If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The DW level for total cresol is 200 mg/L and the EHW level for total cresol is 20,000 mg/L. /2/* Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level. [Statutory Authority: Chapters 70.105 and 70.105D RCW, 40 CFR Part 271.3 and RCRA 3006 (42 U.S.C. 3251). 91-07-005 (Order 90-42), 173-303-090, filed 3/7/91, effective 4/7/91. Statutory Authority: Chapter 70.105 RCW. 87-14-029 (Order DE-87-4), 173-303-090, filed 6/26/87; 86-12-057 (Order DE-85-10), 173-303-090, filed 6/3/86; 84-14-031 (Order DE 84-22), 173-303-090, filed 6/27/84. Statutory Authority: RCW *70.95.260 and chapter 70.105 RCW. 82-05-023 (Order DE 81-33), 173-303-090, filed 2/10/82.*]
134	WAC173-303-110
135	WAC173-303-140

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

136	**WAC173-303-610 Closure and postclosure** Closure and postclosure (1) Applicability. (a) Subsections (2) through (6) of this section, (which concern closure), apply to the owners and operators of all dangerous waste facilities. (b) Subsections (7) through (11) of this section, (which concern postclosure care), *apply to the owners and operators of all regulated units (as* defined in WAC 173-303-040) at which dangerous waste will remain after closure, to tank systems that are required under WAC 173-303-640(8) to meet the requirements of landfills, to surface impoundments, waste piles, and miscellaneous units as specified in WAC 173-303-650(6), 173-303-660(9), and *173-303-680(4), respectively and, unless otherwise authorized by the department,* to the owners and operators of all facilities which, at closure, cannot meet the removal or decontamination limits specified in subsection (2)(b) of this section. (c) For the purposes of the closure and postclosure requirements, any portion of a facility which closes is subject to the applicable closure and *postclosure standards* even if the rest of the facility does not close and continues to operate. (2) Closure performance standard. The owner or operator must close the facility in a manner that: (a)(i) Minimizes the need for further maintenance; (ii) Controls, minimizes or eliminates to the extent necessary to protect human health and the environment, postclosure escape of dangerous waste, dangerous constituents, leachate, contaminated run-off, or dangerous waste *decomposition products to the ground, surface water, ground* water, or the atmosphere; and (iii) Returns the land to the appearance and use of surrounding land areas to the degree possible given the nature of the previous dangerous waste activity. (b) Where the closure requirements of this section, or of WAC 173-303-630(10), 173-303-640(8), 173-303-650(6), 173-303-655(6), 173-303-655(8), 173-303-660(9), 173-303-665(6), 173-303-670(8), or 173-303-680 (2) through (4), or 40 CFR 264.1102 (incorporated by reference at WAC 173-303-695) call for the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other materials containing or contaminated with dangerous wastes or waste residue, then such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed: (i) For soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exopsure assumptions according to the Model Toxics Control Act Regulations, chapter 173-340 WAC as now or hearafter amended. *Primarily, these will be numeric cleanup levels* calculated according to MTCA Method B, although MTCA Method A may be used as appropriate, see WAC 173-340-700 through 173-340-760, excluding WAC 173-340-745; and *(ii) For all structures, equipment, bases, liners, etc., clean closure standards will be set by the department on a case-by-case basis in accordance* with the closure performance standards of WAC 173-303-610 (2)(a)(ii) and in a manner that minimizes or eliminates post-closure escape of dangerous waste constituents. (3) Closure plan; amendment of plan. (a) The owner or operator of a dangerous waste management facility must have a written closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the dangerous waste at partial or final closure are required by WAC 173-303-650(6) and 173-303-660(9) to have contingent closure plans. The plan must be submitted with the permit application, in accordance with WAC 173-303-806(4), and approved by the department as part of the permit issuance procedures *under WAC 173-303-840. The approved* closure plan will become a condition of any permit. The department"s decision must assure that the approved closure plan is consistent with subsections (2), (3), (4), (5), and (6) of this section, and the applicable requirements of WAC 173-303-630(10), 173-303-640(8), 173-303-650(6), *173-303-655(8), 173-303-660(9), 173-303-665(6), 173-303-670(8), and 173-303-680(2).* A copy of the approved plan and all revisions to the plan must be furnished to the department upon request, including request by mail until final closure is completed and certified in accordance with subsection (6) of this section. The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active *life. The closure plan must include at least:* (i) A description of how each dangerous waste management unit at the facility will be closed in accordance with subsection (2) of this section. (ii) A description of how final closure of the facility will be conducted in accordance with subsection (2) of this section. The description must identify the maximum extent of the operation which will be unclosed during the active life of the facility; (iii) An estimate of the maximum inventory of dangerous wastes ever on-site over the active life of the facility. (Any change in this estimate is a minor modification under WAC 173-303-830(4)); (iv) A detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of *all dangerous wastes, and identification of the type(s) of the off-site dangerous waste management* units to be used, if applicable; (v) A detailed description of the steps needed to remove or decontaminate all dangerous waste residues and contaminated containment system *components, equipment, structures, and soils during* partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard; (vi) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, ground water monitoring, leachate collection, and run-on and run-off control; and (vii) A schedule for closure of each dangerous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each dangerous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a *landfill unit, estimates of the time required to treat or dispose* of all dangerous waste inventory and of the time required to place a final cover must be included.) Additionally, for facilities that use trust funds to establish financial assurance under WAC 173-303-620 (4) or (6) and that are expected to close prior to the expiration of the permit, an estimate of *the expected year of final closure.*

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

(b) The owner or operator must submit a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the applicable procedures in WAC 173-303-800 through 173-303-840. The written notification or request must include a copy of the amended closure plan for review or approval by the department.

(i) The owner or operator may submit a written notification or request to the department for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

(ii) The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved closure plan whenever:

(A) Changes in operating plans or facility design affect the closure plan; or

(B) There is a change in the expected year of closure, if applicable; or

(C) In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

(iii) The owner or operator must submit a written request for a permit modification including a copy of the amended closure plan for approval at least sixty days prior to the proposed change in facility design or operation, or no later than sixty days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator must request a permit modification no later than thirty days after the unexpected event. An owner or operator of a surface impoundment or waste pile that intends to remove all dangerous waste at closure and is not otherwise required to prepare a contingent closure plan under WAC 173-303-650(6) or 173-303-660(9), must submit an amended closure plan to the department no later than sixty days from the date that the owner or operator or department determines that the dangerous waste management unit must be closed as a landfill, subject to the requirements of WAC 173-303-665, or no later than thirty days from that date if the determination is made during partial or final closure. The department will approve, disapprove, or modify this amended plan in accordance with the procedures in WAC 173-303-800 through 173-303-840. The approved closure plan will become a condition of any permit issued.

(iv) The department may request modifications to the plan under the conditions described in (b)(ii) of this subsection. The owner or operator must submit the modified plan within sixty days of the department"s request, or within thirty days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the department will be approved in accordance with the procedures in WAC 173-303-800 through 173-303-840.

(c) Notification of partial closure and final closure.

(i) The owner or operator must notify the department in writing at least sixty days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, land treatment, or landfill unit, or final closure of a facility with such a unit. The owner or operator must notify the department in writing at least forty-five days prior to the date on which he expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed.

(ii)(A) The date when he "expects to begin closure" must be either no later than thirty days after the date on which any dangerous waste management unit receives the known final volume of dangerous wastes or, if there is a reasonable possibility that the dangerous waste management unit will receive additional dangerous wastes, no later than one year after the date on which the unit received the most recent volume of dangerous waste. If the owner or operator of a dangerous waste management unit can demonstrate to the department that the dangerous waste management unit or facility has the capacity to receive additional dangerous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, the department may approve an extension to this one-year limit.

(B) For units meeting the requirements of subsection (4)(d) of this section, no later than thirty days after the date on which the dangerous waste management unit receives the known final volume of nondangerous wastes, or if there is a reasonable possibility that the dangerous waste management unit will receive additional nondangerous wastes, no later than one year after the date on which the unit received the most recent volume of nondangerous wastes. If the owner or operator can demonstrate to the department that the dangerous waste management unit has the capacity to receive additional nondangerous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, the department may approve an extension to this one-year limit.

(iii) If the facility"s permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order to cease receiving dangerous wastes or to close, then the requirements of (c) of this subsection do not apply. However, the owner or operator must close the facility in accordance with the deadlines established in subsection (4) of this section.

(iv) Removal of wastes and decontamination or dismantling of equipment. Nothing in this subsection shall preclude the owner or operator from removing dangerous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

(4) Closure; time allowed for closure.

(a) Within ninety days after receiving the final volume of dangerous wastes, or the final volume of nondangerous wastes if the owner or operator complies with all applicable requirements in (d) and (e) of this subsection, at a dangerous waste management unit or facility, the owner or operator must treat, remove from the unit or facility, or dispose of on site, all dangerous wastes in accordance with the approved closure plan. The department may approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that he has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, and either:

(i) The activities required to comply with this paragraph will, of necessity, take longer than ninety days to complete; or

(ii)(A) The dangerous waste management unit or facility has the capacity to receive additional dangerous wastes, or has the capacity to receive nondangerous wastes if the owner or operator complies with (d) and (e) of this subsection;

(B) There is a reasonable likelihood that he or another person will recommence operation of the dangerous waste management unit or the facility within one year; and

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

	(C) Closure of the dangerous waste management unit or facility would be incompatible with continued operation of the site. (b) The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within one hundred eighty days after receiving the final volume of dangerous wastes, or the final volume of nondangerous wastes if the owner or operator complies with all applicable requirements in (d) and (e) of this subsection, at the dangerous waste management unit or facility. The department may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that he has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating dangerous waste management unit or facility, including compliance with all applicable permit requirements, and either: (i) The partial or final closure activities will, of necessity, take longer than one hundred eighty days to complete; or (ii)(A) The dangerous waste management unit or facility has the capacity to receive additional dangerous wastes, or has the capacity to receive nondangerous wastes if the owner or operator complies with (d) and (e) of this subsection; (B) There is reasonable likelihood that he or another person will recommence operation of the dangerous waste management unit or the facility within one year; and (C) Closure of the dangerous waste management unit or facility would be incompatible with continued operation of the site. (c) The demonstrations referred to in (a) and (b) of this subsection must be made as follows: The demonstrations in (a) of this subsection must be made at least thirty days prior to the expiration of the specified ninety-day period; and the demonstration in (b) of this subsection must be made at least thirty days prior to the expiration of the specified one hundred eighty-day period unless the owner or operator is otherwise subject to the deadlines in (d) of this subsection. (d) The department may allow an owner or operator to receive only nondangerous wastes in a landfill, land treatment, or surface impoundment unit after the final receipt of dangerous wastes at that unit if: (i) The owner or operator requests a permit modification in compliance with all applicable requirements in WAC 173-303-830 and 40 CFR Part 124 and in the permit modification request demonstrates that: (A) The unit has the existing design capacity as indicated on the part A application to receive nondangerous wastes; and (B) There is a reasonable likelihood that the owner or operator or another person will receive nondangerous wastes in the unit within one year after the final receipt of dangerous wastes; and (C) The nondangerous wastes will not be incompatible with any remaining wastes in the unit, or with the facility design and operating requirements of the unit or facility under this part; and (D) Closure of the dangerous waste management unit would be incompatible with continued operation of the unit or facility; and (E) The owner or operator is operating and will continue to operate in compliance with all applicable permit requirements; and (ii) The request to modify the permit includes an amended wastes analysis plan, ground water monitoring and response program, human exposure assessment required under RCRA section 3019, and closure and postclosure plan, and updated cost estimates and demonstrations of financial assurance for closure and postclosure care as necessary and appropriate, to reflect any changes due to the presence of dangerous constituents in the nondangerous wastes, and changes in closure activities, including the expected year of closure if applicable under subsection (3)(a)(vii) of this section, as a result of the receipt of nondangerous wastes following the final receipt of dangerous wastes; and (iii) The request to modify the permit includes revisions, as necessary and appropriate, to affected conditions of the permit to account for the receipt of nondangerous wastes following receipt of the final volume of dangerous wastes; and (iv) The request to modify the permit and the demonstration referred to in (d)(i) and (ii) of this subsection are submitted to the department no later than one hundred twenty days prior to the date on which the owner or operator of the facility receives the known final volume of dangerous wastes at the unit, or no later than ninety days after the effective date of this rule in the state in which the unit is located, whichever is later. (e) In addition to the requirements in (d) of this subsection, an owner or operator of a dangerous wastes surface impoundment that is not in compliance with the liner and leachate collection system requirements in 42 U.S.C. 3004 (o) (2) or (3) or 3005 (j) (2), (3), (4) or (13) must: (i) Submit with the request to modify the permit: (A) A contingent corrective measures plan, unless a corrective action plan has already been submitted under WAC 173-303-645(10); and (B) A plan for removing dangerous wastes in compliance with (e)(ii) of this subsection; and (ii) Remove all dangerous wastes from the unit by removing all dangerous liquids, and removing all dangerous sludges to the extent practicable without impairing the integrity of the liner(s), if any. (iii) Removal of dangerous wastes must be completed no later than ninety days after the final receipt of dangerous wastes. The department may approve an extension to this deadline if the owner or operator demonstrates that the removal of dangerous wastes will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment. (iv) If a release that is a statistically significant increase (or decrease in the case of pH) over background values for detection monitoring parameters of constituents specified in the permit or that exceeds the facility"s ground water protection standard at the point of compliance, if applicable, is detected in accordance with the requirements in subpart F of this part, the owner or operator of the unit: (A) Must implement corrective measures in accordance with the approved contingent corrective measures plan required by (e)(i) of this subsection no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later; (B) May continue to receive wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action; and (C) May be required by the department to implement corrective measures in less than one year or to cease the receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment. (v) During the period of corrective action, the owner or operator shall provide semiannual reports to the department that describe the progress of the corrective action program, compile all ground water monitoring data, and evaluate the effect of the continued receipt of nondangerous wastes on the effectiveness of the corrective action. (vi) The department may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year as required in (e)(iv) of this subsection, or fails to

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

make substantial progress in implementing corrective action and achieving the facility"s ground water protection standard or background levels if the facility has not yet established a ground water protection standard.

(vii) If the owner or operator fails to implement corrective measures as required in (e)(iv) of this subsection or if the department determines that substantial progress has not been made pursuant to (e)(vi) of this subsection the department shall:

(A) Notify the owner or operator in writing that the owner or operator must begin closure in accordance with the deadline in (a) and (b) of this subsection and provide a detailed statement of reasons for this determination; and

(B) Provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the decision no later than twenty days after the date of the notice.

(C) If the department receives no written comments, the decision will become final five days after the close of the comment period. The department will notify the owner or operator that the decision is final, and that a revised closure plan, if necessary, must be submitted within fifteen days of the final notice and that closure must begin in accordance with the deadlines in (a) and (b) of this subsection.

(D) If the department receives written comments on the decision, it shall make a final decision within thirty days after the end of the comment period, and provide the owner or operator in writing and the public through a newspaper notice, a detailed statement of reasons for the final decision. *If the department determines that substantial progress* has not been made, closure must be initiated in accordance with the deadlines in (a) and (b) of this subsection.

(E) The final determinations made by the department under (e)(vii)(C) and (D) of this subsection are not subject to administrative appeal.

(5) Disposal or decontamination of equipment, structures and soils. During the partial and final closure periods, all contaminated equipment, structures and soils must be properly disposed of or decontaminated unless otherwise specified in WAC 173-303-640(8), 173-303-650(6), 173-303-655(8), 173-303-660(9), 173-303-665(6), or under the authority of WAC 173-303-680 (2) and (4). By removing any dangerous wastes or dangerous constituents during partial and final closure, the owner or operator may become a generator of dangerous waste and must handle that waste in accordance with all applicable requirements of WAC 173-303-170 through 173-303-230.

(6) Certification of closure. Within sixty days of completion of closure of each dangerous waste management unit (including tank systems and container storage areas), and within sixty days of the completion of final closure, the owner or operator must submit to the department by registered mail, a certification that the dangerous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer"s certification must be furnished to the department upon request until it releases the owner or operator from the financial assurance requirements for closure under WAC 173-303-620(4).

(7) Postclosure care and use of property.

(a) Postclosure care for each dangerous waste management unit subject to postclosure requirements must begin after completion of closure of the unit and continue for thirty years after that date and must consist of at least the following:

(i) Ground water monitoring and reporting as applicable; and

(ii) Maintenance and monitoring of waste containment systems as applicable.

(b) Any time preceding partial closure of a dangerous waste management unit subject to postclosure care requirements or final closure, or any time during the postclosure period for a particular unit, the department may, in accordance with the permit modification procedures in WAC 173-303-800 through 173-303-840:

(i) Shorten the postclosure care period applicable to the dangerous waste management unit, or facility, if all disposal units have been closed, if it finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground water monitoring results, characteristics of the dangerous waste, application of advanced technology, or alternative disposal, treatment, or reuse techniques indicate that the dangerous waste management unit or facility is secure); or

(ii) Extend the postclosure care period applicable to the dangerous waste management unit or facility if it finds that the extended period is necessary to protect human health and the environment (e.g., leachate or ground water monitoring results indicate a potential for migration of dangerous waste at levels which may be harmful to human health and the environment).

(c) The department may require, at partial or final closure, continuation of any of the security requirements of WAC 173-303-310 during part or all of the postclosure period when:

(i) Dangerous wastes may remain exposed after completion of partial or final closure; or

(ii) Access by the public or domestic livestock may pose a hazard to human health.

(d) Postclosure use of property on or in which dangerous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of any containment system, or the function of the facility"s monitoring systems, unless the department finds that the disturbance:

(i) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(ii) Is necessary to reduce a threat to human health or the environment.

(e) All postclosure care activities must be in accordance with the provisions of the approved postclosure plan as specified in subsection (8) of this section.

(8) Postclosure plan; amendment of plan.

(a) The owner or operator of a dangerous waste disposal unit must have a written postclosure plan. In addition, certain surface impoundments and certain piles from which the owner or operator intends to remove or decontaminate the dangerous wastes at partial or final closure are required by WAC 173-303-650 and 173-303-660, respectively, to have written contingent postclosure plans. Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent postclosure plans under WAC 173-303-650 or 173-303-660 must submit a postclosure plan to the department within ninety days from the date that the owner or operator or department determines that the dangerous waste management unit must be closed as a landfill, subject to the postclosure requirements. The plan must be submitted with the permit application, in accordance with WAC 173-303-806, and approved by the department as part of the permit issuance procedures under WAC 173-303-840. The approved postclosure plan will become a condition of any permit issued.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

(b) For each dangerous waste management unit subject to the requirements of this subsection, the postclosure plan must identify the activities which will be carried on after closure and the frequency of these activities, and include at least:

(i) A description of the planned ground water monitoring activities and frequencies at which they will be performed;

(ii) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(A) The integrity of the cap and final cover or other containment structures where applicable; and

(B) The function of the facility monitoring equipment;

(iii) And the name, address, and phone number of the person or office to contact about the dangerous waste disposal unit or facility during the postclosure care period.

(c) Until final closure of the facility, a copy of the approved postclosure plan must be furnished to the department upon request, including request by mail. After final closure has been certified, the person or office specified in (b)(iii) of this subsection must keep the approved postclosure plan during the remainder of the postclosure period.

(d) Amendment of plan. The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved postclosure plan in accordance with the applicable requirements of WAC 173-303-800 through 173-303-840. The written notification or request must include a copy of the amended postclosure plan for review or approval by the department.

(i) The owner or operator may submit a written notification or request to the department for a permit modification to amend the postclosure plan at any time during the active life of the facility or during the postclosure care period.

(ii) The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved postclosure plan whenever:

(A) Changes in operating plans or facility design affect the approved postclosure plan; or

(B) There is a change in the expected year of final closure, if applicable; or

(C) Events which occur during the active life of the facility, including partial and final closures, affect the approved postclosure plan.

(iii) The owner or operator must submit a written request for a permit modification at least sixty days prior to the proposed change in facility design or operation, or no later than sixty days after an unexpected event has occurred which has affected the postclosure plan. An owner or operator of a *surface impoundment or waste pile that intends to remove all dangerous* waste at closure and is not otherwise required to submit a contingent postclosure plan under WAC 173-303-650 or 173-303-660 must submit a postclosure plan to the department no later than ninety days after the date that the owner or operator or department determines that the dangerous waste management unit must be closed as a landfill, subject to the requirements of WAC 173-303-665. The department will approve, disapprove, or modify this plan in accordance with the procedures in WAC 173-303-800 through 173-303-840. The approved postclosure plan will become a permit condition.

(iv) The department may request modifications to the plan under the conditions described in (d)(ii) of this subsection. The owner or operator must submit the modified plan no later than sixty days after the department"s request, or no later than ninety days if the unit is a surface impoundment or waste pile not previously required to prepare a contingent postclosure plan. Any modifications requested by the department will be approved, disapproved, or modified in accordance with the procedures in WAC 173-303-800 through 173-303-840.

(9) Notice to local land authority. No later than the submission of the certification of closure of each dangerous waste disposal unit, the owner or operator of a disposal facility must submit to the local zoning authority or the authority with jurisdiction over local land use and to the department a survey plat indicating the location and dimensions of landfill cells or other dangerous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority or the authority with jurisdiction over local land use must contain a note, prominently displayed, which states the owner"s or operator"s obligation to restrict disturbance of the dangerous waste disposal unit in accordance with the applicable requirements of this section. In addition, no later than sixty days after certification of closure of each dangerous waste disposal unit, the owner or operator must submit to the local zoning authority or the authority with jurisdiction over local land use and to the department, a record of the type, location, and quantity of dangerous wastes disposed of within each cell or other disposal unit of the facility. For wastes disposed of before November 19, 1980 (March 12, 1982, for facilities subject to this chapter but not subject to 40 CFR Part 264), the owner or operator *must identify the type, location, and quantity of the dangerous wastes to the best of his* knowledge and in accordance with any records he has kept.

(10) Notice in deed to property.

(a) No later than sixty days after certification of closure of each dangerous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the department a record of the type, location, and quantity of dangerous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes (as defined in WAC 173-303-040) disposed of before January 12, 1981, the owner or operator must identify the type, location, and quantity of the dangerous wastes to the best of his knowledge and in accordance with any records he has kept.

(b) Within sixty days of certification of closure of the first dangerous waste disposal unit and within sixty days of certification of closure of the last dangerous waste disposal unit, the owner or operator must:

(i) Record, in accordance with state law, a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that:

(A) The land has been used to manage dangerous wastes;

(B) Its use is restricted under this section; and

(C) The survey plat and record of the type, location, and quantity of dangerous wastes disposed of within each cell or other dangerous waste disposal unit of the facility required in subsection (9) of this section have been filed with the local zoning authority, or the authority with jurisdiction over local land use, and with the department; and

(ii) Submit a certification, signed by the owner or operator, that he has recorded the notation specified in (b)(i) of this subsection, including a copy of the document in which the notation has been placed, to the department.

(c) If the owner or operator or any subsequent owner of the land upon which a dangerous waste facility was located wishes to remove dangerous

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

	wastes and dangerous waste residues, the liner, if any, or contaminated soils, he must request a modification to the postclosure permit in accordance with the applicable requirements in WAC 173-303-800 through 173-303-840. The owner or operator must demonstrate that the removal of dangerous wastes will satisfy the criteria of subsection (7)(d) of this section. By removing dangerous waste, the owner or operator may become a generator of dangerous waste and must manage it in accordance with all applicable requirements of this chapter. If he is granted a permit modification or otherwise granted approval to conduct such removal activities, the owner or operator may request that the department approve either: (i) The removal of the notation on the deed to the facility property or other instrument normally examined during title search; or (ii) The addition of a notation to the deed or instrument indicating the removal of the dangerous waste. (11) Certification of completion of postclosure care. No later than sixty days after completion of the established postclosure care period for each dangerous waste disposal unit, the owner or operator must submit to the department, by registered mail, a certification that the postclosure care period for the dangerous waste disposal unit was performed in accordance with the specifications in the approved postclosure plan. The certification must be signed by the owner or operator and an independent registered professional engineer. Documentation supporting the independent registered professional engineer"s certification must be furnished to the department upon request until he releases the owner or operator from the financial assurance requirements for postclosure care under WAC 173-303-620(6). [Statutory Authority: Chapters 70.105 and 70.105D RCW, 40 CFR Part 271.3 and RCRA 3006 (42 U.S.C. 3251). 91-07-005 (Order 90-42), 173-303-610, filed 3/7/91, effective 4/7/91. Statutory Authority: Chapter 70.105 RCW. 89-02-059 (Order 88-24), 173-303-610, filed 1/4/89; 87-14-029 (Order DE-87-4), 173-303-610, filed 6/26/87; 84-14-031 (Order DE 84-22), 173-303-610, filed 6/27/84. Statutory Authority: RCW 70.95.260 and chapter 70.105 RCW. 82-05-023 (Order DE 81-33), 173-303-610, filed 2/10/82.]
137	WAC173-303-630(1) (1) The regulations in this section apply to owners and operators of all dangerous waste facilities that store containers of dangerous waste.
138	WAC173-303-630(6) (6) At least weekly, the owner or operator must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion, deterioration, or other factors.
139	WAC173-303-630(7) (7)(a) Container storage areas must have a containment system that is capable of collecting and holding spills and leaks. In addition to the necessary leak containment capacity, uncovered storage areas must be capable of holding the additional volume that would result from the precipitation of a maximum twenty-five year storm of twenty-four hours duration. The containment system must: (i) Have a base underlying the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated rainfall until the collected material is detected and removed. The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids; (ii) Be designed for positive drainage control (such as a locked drainage valve) to prevent release of contaminated liquids and so that uncontaminated precipitation can be drained promptly for convenience of operation. Spilled or leaked waste and accumulated precipitation must be removed from the containment system in as timely a manner as is necessary to prevent overflow; and (iii) Have sufficient capacity to contain ten percent of the volume of all containers or the volume of the largest container, whichever is greater. Only containers holding free liquids, or holding wastes designated as F020, F021, F022, F023, F026, or F027 need to be considered in this determination. (b) Run-on into the containment system must be prevented, unless the department waives this requirement in the permit after determining that the collection system has sufficient excess capacity in addition to that required in (a)(iii) of this subsection to accommodate any run-on which might enter the system. (c) Storage areas that store containers holding only wastes that do not contain free liquids, do not exhibit either the characteristic of ignitability or reactivity as described in WAC 173-303-090 (5) or (7), and are not designated as F020, F021, F022, F023, F026, or F027, need not have a containment system as described in this subsection: Provided, That: (i) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation; or (ii) The containers are elevated or are otherwise protected from contact with accumulated liquids. (d) EHW in containers must be protected from the elements by means of a building or other protective covering that otherwise allows adequate inspection under subsection (6) of this section.
140	WAC173-303-630(8) (8)(a) Containers holding reactive waste exhibiting a characteristic specified in WAC 173-303-090 (7)(a)(vi), (vii) or (viii) must be stored in a manner equivalent to the Uniform Fire Code"s "American Table of Distances for Storage of Explosives," Table 77-201, 1979 edition or the version adopted by the local fire district. (b) The owner or operator shall design, operate, and maintain ignitable waste and reactive waste (other than a reactive waste which must meet (a) of this subsection) container storage in a manner equivalent with the Uniform Fire Code. Where no specific standard or requirements are specified in the Uniform Fire Code, or in existing state or local fire codes, applicable sections of the NFPA Pamphlet # 30, "Flammable and Combustible Liquids Code," shall be used. The owner/operator shall also comply with the requirements of WAC 173-303-395 (1)(d).

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

141	WAC173-303-640(8) (8) (a) At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as dangerous waste, unless WAC 173-303-070 (2)(a) applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in WAC 173-303-610 and 173-303-620 . (b) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in (a) of this subsection, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (see WAC 173-303-665 (6)). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in WAC 173-303-610 and 173-303-620 . (c) If an owner or operator has a tank system that does not have secondary containment that meets the requirements of subsection (4)(b) through (f) of this section and is not exempt from the secondary containment requirements in accordance with subsection (4)(g) of this section, then: (i) The closure plan for the tank system must include both a plan for complying with (a) of this subsection and a contingent plan for complying with (b) of this subsection. (ii) A contingent post-closure plan for complying with (b) of this subsection must be prepared and submitted as part of the permit application. (iii) The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under (a) of this subsection. (iv) Financial assurance must be based on the cost estimates in (c)(iii) of this subsection. (v) For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under this chapter (WAC 173-303-610 and 173-303-620).
142	WAC173-480-040 Emissions of radionuclides in the air shall not cause a maximum accumulated dose equivalent of more than 25 mrem/yr to the whole body or 75 mrem/yr to a critical organ of any member of the public. Doses due to radon-220, radon-222, and their respective decay products are excluded from these limits. Compliance with the standard shall be determined by procedures in WAC 173-480-070.
143	WAC246-220-007 Statement of philosophy. In accordance with the recommendations of the Environmental Protection Agency, formerly the Federal Radiation Council, approved by the president of the United States of America, persons engaged in activities under licenses issued by the Washington state department of health pursuant to the Atomic Energy Act of 1954, as amended, shall, in addition to complying with the requirements set forth in chapter 246-221 WAC, make every reasonable effort to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as low as is reasonably achievable. Such persons should make particular efforts to keep the radiation exposure of an embryo or fetus as low as is reasonably achievable during the entire gestation period as recommended by the National Council on Radiation Protection and Measurements. The term "as low as is reasonably achievable" means making every reasonable effort to maintain exposures to radiation as far below the dose limits in these regulations as is practical, consistent with the purpose for which the licensed or registered activity is undertaken, taking, into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other socioeconomic considerations, and in relation to the utilization of nuclear energy, ionization radiation, and radioactive materials in the public interest. [Statutory Authority: RCW 70.98.050. 94-01-073, 246-220-007, filed 12/9/93, effective 1/9/94. Statutory Authority: RCW 70.98.050 and 70.98.080. 91-15-112 91-15-112 (Order 184), 246-220-007, filed 7/24/91, effective 8/24/91. Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as 246-220-007, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.050. 81-01-011 (order 1570), 402-10-010, filed 12/8/80; Order 1095, 402-10-010, filed 2/6/76.]

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

144	DOE/WIPP-069, rev.4, 3.1.3 The RCRA regulations, as they apply to the WIPP, include Standards for the Owners/Operators of Treatment, Storage, or Disposal (TSD) facilities that are codified in 40 CFR Parts 264 and 265. These require the owner/operator to obtain a chemical and physical characterization of the waste, and ensure that the waste shipped to the facility is the waste specified on the shipping manifest. These RCRA requirements for the *WIPP facility will* be satisfied at the generator sites before transport of waste to the WIPP. Sites may use process knowledge and/or sampling and analysis to characterize the hazardous component of their wastes. In addition, each site must characterize a statistically representative sample of its waste to demonstrate that it meets the requirements of the NMD. Sampling and analysis activities shall be detailed in the site *Quality Assurance Project Plans, (QAPjP).* Waste generator and/or storage sites have the responsibility for collecting data that will be used to comply with the NMD. Headspace gas samples shall be collected and analyzed for total volatile organic compounds (VOCs) and toxic metals specified in the WAP contained in the WIPP RCRA Part B Permit Application. *For the waste generated or retrieved from storage* during but not part of the test phase, the following criteria must be satisfied for a statistical population of packages: · Real-time radiography or equivalent examination · Radionuclide assay for total alpha activity · Headspace analysis for inorganic and organic gases · Visual examination of the waste · Analysis of sludges for pH and major cations and anions.
145	DOE/WIPP-069, rev.4, 3.2 Waste containers for emplacement in the WIPP shall be noncombustible and meet all applicable requirements of 49 CFR/173.412 (Reference 14) for Type A packaging. Waste containers of various sizes, shown to meet *Department of Transportation (DOT) Type A requirements by methods* detailed in MLM 3245 (Reference 30) are acceptable at the WIPP. In addition, waste containers shall be used, handled and stored in a manner that is expected to maintain their Type A packaging specification from the time of certification to emplacement in the WIPP. Remote-handled TRU waste containers shall be noncombustible and meet, as a minimum, the structural requirements and design conditions for *Type A packaging as contained in 49 CFR/173.412. In addition,* all RH-TRU waste containers shall be certified to the WIPP-approved specifications and shall be used, handled and stored in a manner that is expected to maintain their Type A packaging specification from the time of certification to emplacement in the WIPP.
146	DOE/WIPP-069, rev.4, 3.2.2.6 The maximum size of CH-TRU waste packages in the WIPP is limited by aces to the waste hoist and the size of the waste hoist cage. Existing packages of CH-TRU waste that meet the criterion in Section 3.2.2.1 are: · Standard 55-gal. (208-L) metal drum (DOT Spec. 17C and 17H) · Standard 55-gal. (208-L) metal drum (DOT Spec. 6M) · Rectangular metal box (74.4 X 50.5 X 38.5 in. LWH) · Rectangular metal box (68 X 54 X 38.5 in. LWH) · Rectangular metal box (88 X 54 X 54 in. LWH) · Rectangular metal box (71 X 57 X 52.5 in. LWH) · Rectangular metal box (50.4 X 58.4 X 72.4 in. LWH) · *Rectangular metal box (4 X 4 X 7 ft. LWH)* · Standard waste box (37 in. high X 71 in. long OD/54.25 in. short OD X 45.06 in. side). The TRUPACT-II limits the CH-TRU waste containers to 55-gallon drums, or SWBs. Other acceptable waste containers may be added in the future. The RH-TRU waste package size is based on the handling of an overpacked RH canister in the WIPP transfer cask.
147	DOE/WIPP-069, rev.4, 3.3.1.1 Powders, ashes, and similar particulate waste materials shall be immobilized if more than 1 weight percent of the waste matrix in each package is in the form of particulate below 10 microns in diameter, or if more than 15 weight percent is in the form of particles below 200 microns in diameter.
148	DOE/WIPP-069, rev.4, 3.3.2 Liquid waste will not be placed in the WIPP. TRU waste for emplacement in the WIPP shall contain as little residual liquid as is reasonably achievable. All internal containers (e.g., bottles, cans, etc.) must be well-drained, but may contain residual liquids. As a guideline, residual liquid in well-drained containers will be restricted to approximately one percent of the volume of the internal container. In no case shall the total liquid equal or exceed one volume percent of the waste container (e.g., drum or SWB). Retrievably-Stored Waste *Real-Time Radiography (RTR) or visual examination shall be used at DOE facilities to determine the presence and quantity of liquids in TRU* wastes. Although some differences exist between the RTR equipment sensitivity at DOE sites, all facilities shall be able to certify TRU waste using RTR in accordance with the less than one volume percent liquid criterion for the external waste container. The RTR records shall include a description of the location of any liquid that is detected (e.g., between rigid liner and 55-gallon poly bag liner or within one gallon poly bottle) and an *estimate of its volume.*
149	DOE/WIPP-069, rev.4, 3.3.2.2 Waste for shipment in TRUPACT-II shall contain less than 1 volume percent of the waste container as liquids. Same as TRUPACT-II requirements. (This requirement is anticipated based on initial negotiations with the NRC, but will not be finalized until review is complete and a C of C is issued.)

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

150	DOE/WIPP-069, rev.4, 3.3.3.1 *WIPP OPERATIONS AND SAFETY CRITERIA* Contact-Handled and Remote Handled Wastes Pyrophoric materials, other than radionuclides, shall be rendered safe by mixing them with chemically stable materials (e.g., concrete, glass) or shall *be processed to remove their hazardous properties.* Not more than one percent by weight of the waste in each waste container may be pyrophoric forms of radionuclides, and these shall be generally dispersed in the waste.
151	DOE/WIPP-069, rev.4, 3.3.4.1 Transuranic waste shall contain no explosives or compressed gases. 49 CFR Part 173 Subpart C (Reference 14) defines explosives and 49 CFR Part 173 Subpart G defines compressed gases.
152	DOE/WIPP-069, rev.4, 3.3.4.5 Documented procedures or RTR verifications are used to ensure that individual waste packages contain no pressurized vessels. Documented procedures are also used to exclude explosive items, compounds, or combination of materials that could form explosive compounds within the waste package. If such materials are present, they must be treated or diluted such that a detonation is not possible.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

153	DOE/WIPP-069, rev.4, 3.3.5 3.3.5 TRU MIXED WASTES 3.3.5.1 WIPP OPERATIONS AND SAFETY CRITERIA Contact-Handled Waste Transuranic wastes shall contain no hazardous wastes unless they exist as co-contaminants with transuranics. Waste packages containing hazardous waste shall be identified with the appropriate DOT label. All TRU-contaminated corrosive, inactive, and ignitable materials shall be treated to remove the hazardous characteristic. Hazardous wastes to be reported are listed in 40 CFR 261, Subparts C and D (Reference 18). *Remote-Handled Waste* Transuranic wastes shall contain no hazardous wastes unless they exist as co-contaminants with transuranics. All TRU-contaminated corrosive, reactive, and ignitable materials shall be neutralized and rendered nonhazardous. Hazardous waste to be reported are listed in 40 CFR 261, Subparts C and D (Reference 18). 3.3.5.2 TRANSPORTATION: WASTE PACKAGE REQUIREMENTS TRUPACT-I Requirements Aqueous materials which have a pH less than 2 or more than 12.5 per 40 CFR 261.22(a)(1) are prohibited from the wastes (Reference 18). RH Cask Requirements Aqueous materials which have a pH less than 2 or more than 12.5 per 40 CFR 261.22(a)(1) (Reference 18) are prohibited from the wastes. (These are preliminary requirements based on meetings with the NRC and the SARP to be submitted for approval.) 3.3.5.3 RCRA REQUIREMENTS RCRA - Waste Determination *Generators of TRU waste must determine whether their waste is regulated by RCRA as a hazardous waste.* The determination is based on whether representative samples or process knowledge of the solid waste indicates that it is specifically identified or listed in 40 CFR Part 261 (Reference 18). Each hazardous waste must be assigned one or more of the applicable EPA hazardous waste codes. Only those waste codes included in the WIPP RCRA Part A Permit Application (Reference 19) can be managed at the WIPP. Wastes that exhibit the characteristics of Ignitability (D001), Corrosivity (D002), or Reactivity (D003), as defined in 40 CFR 261 (Reference 18), will not be accepted at the WIPP. WIPP RCRA Permit Aplication Requirements and QAPjPs The WAP included in the WIPP RCRA Part B Permit Application (Reference 20) specifies the waste analysis requirements applicable to the TRU mixed wastes to be shipped to WIPP. These include the specific sampling and analysis requirements specified in the NMD issued by the EPA. The QAPP (Reference 8) addresses analysis and sampling requirements to show compliance with the NMD criteria. The QAPjP establishes site-specific procedures for sampling and analytical protocols and QA/QC guidances for the WIPP Test Phase. The additional information required by 40 CFR 265.13 and 264.13 (Reference 18), such as test methods, sampling methods, frequency, and accuracy, are required to be addressed in the site-specific QAPjPs. Waste generator and/or storage sites have the responsibility for sampling and analyzing headspace gases to demonstrate compliance with the waste characterization requirements in the NMD. The headspace gas samples shall be collected and analyzed in accordance with procedures specific in each site's QAPjP. The QAPP (Reference 8) contains a more detailed explanation of responsibilities for various organizations involved in the waste characterization program. The waste characterization requirements of the NMD (Reference 23) are: Headspace Gases *Flammability* See Section 3.4.7.3 for requirements.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

Nonflammable VOCs (Comparability)

The NMD (Reference 23) mandates that any waste package that is sent to the WIPP must meet the requirement that the headspace concentration within a package does not exceed two times (2X) the maximum concentration for five nonflammable VOCS. This requirement is designed to ensure that the wastes to be emplaced in the WIPP are in fact similar to the wastes described in the NM-VP (Reference 22). The five nonflammable VOCs are:

Carbon Tetrachloride
Methviene Chloride
1,1,1-Trichioroethane
Trichloroethylene
1,1,2-Trichioro-1,2,2-trilluoroethane.

The five nonflammable compounds and their 2X maximum concentration limits are reported in the NMD (Reference 23) and the WAP in the WIPP RCRA Part B Permit Application (Reference 20), and the methodology for demonstrating compliance is presented in the QAPP (Reference 8).

Nonflammable VOCs (No-Migration Demonstration)

The NMD (Reference 23) mandates that any waste package that is sent to the WIPP must meet the requirement that the headspace concentration within a package does not exceed ten times (10X) the average concentration of three nonflammable VOCS.

(TWO of the five compounds listed above do not have to meet this requirement) The three nonflammable VOCs that must meet the requirement are:

Carbon Tetrachloride
Metbyiene Chloride
Trichloroethylene.

The three nonflammable compounds and their 10X average concentration are reported in the NMD (Reference 23) and the WAP in the WIPP RCRA Part B Permit Application (Reference 20), and the methodology for demonstrating compliance is presented in the QAPP (Reference 8).

Sludges

In addition to the headspace analyses specified above, sludges shall be analyzed for total VOCs and toxic metals specified in the WAP for the WIPP RCRA Part B Permit Application (Reference 20). Sampling and analysis procedures for VOCs and toxic metals in TRU sludges are being developed and, when completed, the requirements will be included in the QAPP (Reference 8).

3.3.5.4 PERFORMANCE ASSESSMENT CRITERIA

No additional requirements.

3.3.5.5 COMPLIANCE

The types and quantities of hazardous wastes must be entered in the data package (Section 3.5.1.1). This information must be consistent with the acceptable EPA hazardous waste codes for WIPP as specified in the RCRA Part A Permit Application (Reference 19).

The basis for the identification of the hazardous wastes will be process knowledge supplemented with sampling.

3.3.5.6 TECHNICAL JUSTIFICATION

Transuranic mixed waste is defined as TRU waste that contains constituents considered hazardous in accordance with 40 CFR Part 261 (Reference 18). Because of the presence of hazardous constituents, the waste is subject to dual regulation under the AEA (Reference 21) and the RCRA (Reference 18). Dual regulation has made it necessary to make a RCRA hazardous waste determination for the purposes of manifesting for transportation, for reporting waste management activities, and for ensuring adequate health and safety programs. The DOE Order 5400.3 (Reference 33) requires the implementation of and compliance with the RCRA regulations.

Waste characterization data or other determinations made about the disposition of the waste shall be maintained for necessary audits.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

154	DOE/WIPP-91-9, rev.4, 3.3.6 3.3.6 SPECIFIC ACTIVITY OF WASTE 3.3.6.1 WIPP OPERATIONS AND SAFETY CRITERIA Contact-Handled Waste *For purposes of TRU waste certification, the lower limit of* > 100 nanocuries/gram (nCi/g) of TRU radionuclides in the waste shall be interpreted as > 100 nCi per gram of waste matrix. The weight of added external shielding and the waste containers (including any rigid liners) shall be subtracted prior to performing the nCi/g calculation. This is also applicable to wastes managed as TRU under the provisions of DOE Order 5820.2A (e.g., U-233 and Ra-226) (Reference 13). Remote-Handled Waste For purposes of TRU waste certification, the lower limit of > 100 nCi/g of TRU radionuclides in the waste shall be interpreted as > 100 nCi/g of waste matrix. The weight of added external shielding and the waste containers (including any rigid liners) shall be subtracted prior to performing the nCi/g calculation. The maximum activity concentration for a RH-TRU waste package shall not exceed 23 curies/liter. *The concentration* may be averaged over the waste container. 3.3.6.2 TRANSPORTATION: WASTE PACKAGE REQUIREMENTS TRUPACT-II Requirements Same as WIPP Operations And Safety Criteria. Section 3.3.6.1. *RH Cask Requirements* Same as WIPP Operations And Safety Criteria, Section 3.3.6.1. 3.3.6.3 RCRA REQUIREMENTS None. 3.3.6.4 PERFORMANCE ASSESSMENT CRITERIA Same as WIPP Operations And Safety Criteria, Section 3.3.6.1. 3.3.6.5 COMPLIANCE Documented evidence shall exist to show that the specific activity of any TRU waste package is greater than 100 nCi/g of waste and that the activity of RH-TRU waste does not exceed 23 Ci/liter. 3.3.6.6 TECHNICAL JUSTIFICATION The DOE Order 5820.2A "Radioactive Waste Management," Chapter II.3.a.(2), (Reference 13) states: "*The lower concentration limit for* transuranic waste (> 100 nCi/g of waste) shall apply to the contents of any single waste package at the time of assay. The mass of the waste container including shielding shall not be used in calculating specific activity of the waste." The upper limit of RH-TRU waste activity arises from the WIPP Final Environmental Impact Statement (Reference 34)

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

155	DOE/WIPP-069, rev.4, 3.4.1 3.4.1 WASTE PACKAGE WEIGHT 3.4.1.1 WIPP OPERATIONS AND SAFETY CRITERIA Contact-Handled Waste All CH-TRU waste packages or package assemblies shall weigh no more than 21,000 pounds. Remote-Handled Waste All RH-TRU waste packages shall weigh no more than 8,000 pounds. 3.4.1.2 TRANSPORTATION: WASTE PACKAGE REQUIREMENTS TRUPACT-II Requirements The following weight limits shall apply for waste package assemblies transported in the TRUPACT-II package: 1,000 lbs per drum 1,450 lbs per drum overpacked in a SWB 4,000 lbs per SWB 7,265 lbs per TRUPACT-II payload 19,250 lbs per TRUPACT-II payload, including the weight of the TRUPACT-II. Recent enhancements in the TRUPACT-II design have resulted in an average payload weight of approximately 6,200 lbs. The total weight of the top seven-pack of drums or SWB including error shall be less than or equal to the total weight including error of the lower seven-pack of drums or SWB. The DOT limit of 80,000 lbs gross vehicle weight (GVW) must also be met. RH Cask Requirements To be determined. 3.4.1.3 RCRA REQUIREMENTS None. 3.4.1.4 PERFORMANCE ASSESSMENT CRITERIA None. 3.4.1.5 COMPLIANCE For CH-TRU waste packages, documented evidence shall exist that the waste package has been weighed and the weight of the waste package or package assembly meets the requirements. The weight of the waste package cannot exceed the weight for which the waste package has been certified in accordance with 49 CFR 173.463 (Reference 14). For RH-TRU waste, the canister weight may be calculated based on the weight of the empty canister plus the weight of waste that will be placed in the canister. The weight of the canister cannot exceed the weight for which the waste package has been certified in accordance with 49 CFR 173.463 (Reference 14). 3.4.1.6 TECHNICAL JUSTIFICATION The CH-TRU waste handling system of the WIPP is limited by the capacity of the fork trucks that will transfer the CH-TRU waste materials on and off the waste hoist. These fork trucks have a rated lift capacity of 26,000 pounds. As this rated capacity must include an allowance for pallets and overpacks, estimated to be 5,000 pounds, a CH-TRU waste package may weigh a maximum of 21,000 pounds. The WIPP has established a RH-TRU overpack gross weight limit of 10,000 pounds. It is estimated that a RH-TRU overpack may weigh 2,000

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

	pounds, leaving a maximum gross weight of 8,000 pounds for the loaded RH canister. The TRUPACT-II weight limits are based on the provisions of the TRUPACT-II SARP (Reference 9).
156	DOE/WIPP-069, rev.4, 3.4.2 Contact-Handled Waste The fissile or fissionable radionuclide content of CH-TRU waste packages shall be no greater than the following values, in Pu-239 fissile-gram equivalent: - 200 g per 55-gallon (0.21 m3) drum - 500 g per DOT 6M container - 5 g per ft3 (0.028 m3) in boxes, up to 350 g maximum. The Pu-239 FGE shall be calculated using the methods detailed in Appendix 1.3.7 of the TRUPACT-II SARP (Reference 9).
157	DOE/WIPP-069, rev.4, 3.4.2.2 The fissile or fissionable radionuclide content of CH-TRU waste in the TRUPACT-II, including two times the measurement error, shall be less than 200 grams for a 55-gallon drum or less than 325 grams for a SWB. The sum of the fissile equivalents of all waste packages in the entire payload quantity including two times the error may not exceed 325 grams. See the calculational methods detailed in Appendix 1.3.7 of the TRUPACT-II SARP for details.
158	DOE/WIPP-069, rev.4, 3.4.3 Waste Packages shall not exceed 1000 Ci of Pu-239 equivalent activity (PE-Ci).
159	DOE/WIPP-069, rev.4, 3.4.4 All RH-TRU waste packages shall have a surface dose rate at any point no greater than 1000 rem/hr. Neutron contributions are limited to 270 mrem/hr. Neutron contributions of greater than 20 mrem/hr, to the total waste package dose rate shall be reported in the data package. At least 95% of the RH canisters must have dose rates of <=100 rem/hr, and no more than 5% of the RH canisters are allowed to have but <=1000 rem/hr may be shipped to the WIPP.
160	DOE/WIPP-069, rev.4, 3.4.5 Removable surface contamination on waste packages or package assemblies to be emplaced in WIPP shall not be greater than 50 picocuries per 100 sq. cm for alpha-emitting radionuclides and 450 picocuries per 200 sq. cm for beta-gamma-emitting radionuclides. Fixation of surface contamination to meet the above criterion is not permitted.
161	DOE/WIPP-069, rev.4, 3.4.6 The thermal power generated by waste materials in any RH-TRU waste package shall not exceed 300 watts.
162	DOE/WIPP-069, rev.4, 3.4.7 Waste containers with waste that could potentially generate gases shall be vented.

TANK WASTE REMEDIATION SYSTEM

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

163	DOE/WIPP-069, rev.4, 3.5 A data package with certification attesting to the fact that the waste package meets the requirements of these criteria shall be transmitted to the WIPP operator in advance of shipment. This data package/certification shall be based upon a QA program subject to audit and verification and shall proved information on the items specified below: - Package identification number - Package assemble identification number (if applicable) - Date of waste package certification - *WAC exception number (if applicable)* - Waste generation site - Date of package closure - Maximum surface dose rate in mrem/hr and specific neutron dose rate if greater than 20 mrem/hr - Weight (in kg) - Container type - Physical description of waste form (content code) - Assay information, including PE-Ci, alpha Ci, and Pu-239 FGE content - Radionuclide information including radionuclide symbol, quantity, and measure (in grams or Curies) - *Radioactive mixed waste (identity and quantity of listed wastes and those that exhibit the characteristics of a hazardous waste)* - Weight and volume percent of organic materials content - Measured or calculated thermal power (if over 0.1 watt/ft3) - Shipment number - Date of shipment - Vehicle type - TRUPACT-II number(s) (CH-TRU waste), or cask number (RH-TRU waste) - Other information considered significant by the generator - Name of certifying official who approved the waste package - Name of person *who certifies that the shipment meets the* TRUPACT-II TRAMPAC A hard copy of the signed and dated Certification Statement, certifying that the waste content and packaging are in accordance with the WIPP WAC and that the waste is unclassified, shall be maintained on file at each site for WACCC audits. The specific data format for the transmittal of this information is contained in Appendix B of this document. 3.5.1.2 TRANSPORTATION: WASTE PACKAGE REQUIREMENTS TRUPACT-II Requirements The documentation required for the certification of an individual waste package or a group of waste packages for an individual TRUPACT-II is given in Section 13.0 of Appendix 1.3.7 of the TRUPACT-II SARP. The format of these tables is not mandatory, however, all listed parameters must be included in any site documentation. This documentation may be computer generated based on the site's waste data base. *RH Cask Requirements* To be determined. 3.5.1.3 RCRA REQUIREMENTS A generator must prepare a specific hazardous waste manifest in accordance with the EPA requirements of 40 CFR/262.20 through 262.23. A generator must also sign the certification on the manifest that indicates that the generator has a program in place to reduce the volume and toxicity of the waste generated. Identification numbers that link each RCRA-regulated waste container and its waste data package must also accompany the manifest. The identification numbers must be attached to the waste profile documentation. The Land Disposal Restriction (LDR) Certification required by the 40 CFR 268 must also accompany the manifest and data package.
164	10CFR835 Radiological Services Radiological services shall be in accordance with the document "10 CFR 835".
165	Dangerous Waste Management Facilities that treat, store or dispose of dangerous waste and mixed waste (containing both dangerous and radioactive waste components) shall conform to DOE Order 5820.2A. Dangerous waste is regulated in accordance with the Resource Conservation and Recovery Act (RCRA) and the Washington Administrative Code (WAC) 173-303, *Dangerous Waste Regulations*.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

166	**Untreated Liquid Effluents** The following criteria for discharges to the ETF are derived from ETF regulatory and facility design requirements and must be met. 1. The waste stream must be characterized to the degree established in the ETF Waste Analysis Plan. Analytical procedures used must be consistent with the Waste Analysis Plan. *Basis: The waste stream cannot be designated without accurate and complete characterization data.* 2. Only the waste codes listed in the Delisting Petition and the RCRA permit can be accepted for treatment at the ETF, unless the permit and the Delisting Petition are modified. Basis: The ETF is limited by RCRA regulations to treat only those waste streams containing constituents that have been demonstrated to be treatable. 3. The absorbed radiation dose to a hypothetical individual at the site boundary cannot increase over permitted levels without a modification to the Radionuclide Air Emission Program (RAEP) permit. Influent concentrations must remain low enough such that this remains true. Radionuclides which have not previously been accounted for, may also force a permit reevaluation. Basis: Washington State Department of Health (DOH) regulations. 4. The radionuclide content of the waste must comply with the ETF Auditable Safety Analysis. Acceptance criteria based on operability parameters are listed below. The following criteria must be considered when determining the acceptability of a waste stream sent to the LERF for storage and the ETF for treatment. These criteria may change in response to modifications made to the LERF and ETF. 1. No separable organics. Basis: The ETF is designed to process dilute, single-phase aqueous waste streams containing soluble levels of organics. Dual-phase aqueous/organic mixtures would far exceed the treatment capacity of UV/oxidation (UV/OX), can damage plant equipment, and would not be compatible with the LERF basin liner material. The UV/OX system is designed to treat dissolved organic levels generally not exceeding 100 to 300 ppm, depending on the organic species present. Some process flexibility is available to extend this range. 2. Minimize colloidal matter to protect filters in the ETF from plugging. Basis: Physical limitation of the rough and fine filters. 3. Minimize concentrations of scale forming compounds, (e.g., calcium sulfate, calcium phosphate, and metal silicates). Basis: Physical limitations of the UV/OX and Reverse Osmosis (RO). Note that silicate concentrations in excess of 0.001 molar fed to the RO system could foul the membranes. The RO membranes have an influent total dissolved solids (TDS) limit of approximately 1000 ppm. TDS concentrations in excess of this may foul the second stage RO membranes, depending on the types of contaminants present. 4. Minimize concentrations of corrosive constituents, such as chloride and fluoride. Basis: Physical limitation of the ETF evaporator and dryer. In sufficient concentrations, these constituents can corrode the ETF evaporator and dryer. 5. Minimize concentration of constituents that can absorb UV light to the extent destruction of targeted organics is significantly compromised. Basis: Physical limitations of the UV/OX system. Nitrate and sulfide are two such constituents. For example, proof-of-principle testing by the Japan Gas Company found hydrogen sulfide forms a milky light-absorbing substance when subjected to ultraviolet light oxidation. 6. Significant concentrations of neutral radionuclide species cannot be accepted by the LERF and ETF without jeopardizing compliance with discharge requirements for radionuclides (0.04 times the Derived Concentration Guidelines) per section 8.4.2.1 of WHC-CM-7-5. Plutonium and Ruthenium are known to form such neutral species. Basis: Neutral species have lower decontamination factors primarily because the IX system is only effective on ionic species. 7. The LETF is not currently designed to handle streams with elevated levels of volatile radionuclides. 8. Waste streams that are marginal for treatment at the ETF due to relatively high radionuclide concentrations may be blended with radiologically dilute streams, if available, in order to render them treatable.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

167	Notification of Startup, Shutdown, or Other Change That May Affect Emissions Measurement WHC Environmental Emission Management (EEM) shall be notified directly by the appropriate facility management as soon as practicable, but no later than one working day after any radioactively contaminated forced ventilation exhaust systems start-up or shut-down. The date and time for each such exhaust system startup or shutdown shall also be recorded in the facility operating log. This requirement addresses equipment of any size involving any radioactive emissions to air resulting from forced air flow. Relocation of any portable exhaust unit (e.g., HEPA-filtered portable exhausters, greenhouse exhausters, or HEPA-filtered vacuums) requires the earliest possible prior notification. Use of hand held HEPA filtered vacuums does not require such notification. Such notification shall also include any shutdown of stack sampling or monitoring systems or any other change that may affect the measurement of airborne radioactive emissions to the environment, including those outlined in the applicable Facility Effluent Monitoring Plan (FEMP). WHC EEM shall then notify WHC Air and Water Permits (AWP) of any shutdown, abnormal operation, or other change in facility operation which could result in an airborne radionuclide emissions violation of applicable standards. Basis: WAC 246-247-090, "Special Reports," and reporting requirements of 40 CFR 61.14 and 61.94. [WHC-CM-7-5, CHAPTER 2, 2.5.7]
168	Safety Class The degree of redundancy, reliability, and availability shall correspond to a systematically determined safety classification for all systems, structures, and components. Basis: DOE 6430.1A
169	Environmental Conditions Environmental Conditions New facilities and systems functioning on the Hanford site shall withstand the environmental conditions specified below. Thermal effects of the soil shall be considered for the buried portions of the system. Ambient Air Temperature Range: -20 to 120 F Rate of increase: 26 F per 20 min., maximum Rate of decrease: 24 F per hr., maximum Relative Humidity: 5 to 100% (Rate of change is negligible) Mean annual precipitation: 16 cm (6.3 in) Maximum precipitation rate of change: 1.52 cm/hr. (0.6 in./hr.) Blowing Dust & Smoke Visibility: 6 miles or less with sky completely obscured Frequency: 10 times per year, maximum Duration: 24 hrs. per occurrence Wind Gusts up to 80 miles per hour can be expected on site with the average wind speed in the 200 Area of 7.7 mph in the WNW direction. Frost Line: 36 in. Solar Radiation: Frequent exposure due to minimal cloud cover Additional information on Hanford site weather conditions can be obtained from the Hanford Site vicinity weather bureau.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

170	**Design Loads for Facilities** The TWRS facilities and equipment shall comply with the DOE Order 5480.28, "Natural Phenomena Hazards Mitigation" policy of the DOE to design, construct, and operate DOE facilities so that workers, the general public, and the enviroment are protected from the impacts of natural phenomena hazards on DOE facilities. The seismic guidance of the National Earthquake Hazards Reduction Program (NEHRP) contained in the Interagency Committee of Seismic Safety in Construction (ICSSC), reports (RP-1 and RP-3), shall be used. Recent evaluations under the NEHRP studies have found that the standards used by DOE for DESIGN and evaluation of buildings to be "substantially equivalent" to the NEHRP provisions required by the Executive Order (E.O.) on Seismic Safety (E.O. 12699 dated 1-5-90) and substantially more conservative for levels of design beyond those judged acceptable for life safety.
171	**Human Factors** Human Factors criteria shall apply to new construction and to retrofitting of existing facilities. These criteria shall be considered for upgrading existing facilities where cost-benefit or risk-tradeoff analysis indicate justification for such expenditures. Equipment that is to be used by personnel shall be designed or selected to accommodate their body dimensions. This equipment includes control panels, work tables and counters, enclosures, seating, storage, special clothing, and any other equipment designed for an operator. The design of equipment for personnel shall accommodate a wide variety of body dimensions. Generally, it is recommended that equipment dimensions accommodate the fifth to ninety-fifth percentile of the user population. For recommended data representing these percentiles, see NUREG 0700, Section 6.1, and MIL-STD-1472D, Section 5.6.
172	**ALARA-Design** The cost/benefit analysis used by Westinghouse Hanford Company is based on guidance provided in Health Physics Manual of Good Practices for Reducing Radiation Exposures to Levels That Are As Low As Reasonably Achievable, PNL-6577. This document is cited in DOE Order 5480.11, Radiation Protection for Occupational Workers as providing useful information for implementing the requirements of the order. The detriment associated with exposure to radiation is expressed in PNL-6577 as follows: $X = A + B$ where A = cost of a person-rem due to health detriment ($) B = cost of a person-rem due to nonhealth-related detriment ($) X = cost of a person-rem due to total detriment ($). The minimum value of A accepted by Westinghouse Hanford Company is $2,500 (WHC-SD-SQA-20003). A value for the B component is not inserted in PNL-6577, but is considered to be variable; the actual value depends on application. As applicable to Westinghouse Hanford, the value of B is considered to be a range from essentially zero dollars to an upper limit value dependent on application. The maximum value for B is limited in practical terms, to the cost of replacing the individual worker in the specific work force who has approached a preset limit. A specific evaluation of B for Westinghouse Hanford Company is developed in WHC-SA-1533-FP. The method used in this paper can be employed to develop quantitative values of B for other situations.
173	**Dose Limit to Public** DOE Public Dose Limit--All Exposure Modes, All DOE Sources of Radiation. Except as provided by II.1a(4), the exposure of members of the public to radiation sources as a consequence of all routine TWRS activities shall not cause, in a year, an effective dose equivalent greater than TBD. Dose evaluations should reflect realistic exposure conditions.
174	**Criticality** The criticality safety program defined herein applies to all storing, retrieving, processing, transfer operations, transport and storage activities and waste form operations involving fissionable material quantities in excess of 3% of a minimum critical mass. Designs shall incorporate sufficient factors of safety to require at least two unlikely, independent, and concurrent changes in process conditions before a criticality accident is possible. Protection shall be provided by either (a) the control of two independent process parameters (which is the preferred approach, if practical) or (b) a system of multiple (at least two) controls of a single parameter. In all cases, no single credible failure shall result in the potential for a criticality accident. The basis for selecting one approach over another shall be fully documented. New criticality safety evaluations (CSEs) and major revisions to existing CSEs shall provide this documentation; existing CSEs are not required to be revised just to provide this documentation.
175	**Volume of Tank Waste for Retrieval** The volume of tank waste that will be retrieved for disposal is approximately 213,300 cubic meters (56 million gallons). Approximately 136,800 cubic meters (36 million gallons) of wastes are presently stored in the SSTs, ~75,800 cubic meters (20 million gallons) of waste are presently stored in the DSTs, and ~455 cubic meters (120,000 gallons) of waste are stored in the MUSTs (WHC-SD-WM-MAR-008, pg. 6). Transfer of liquids from the SSTs for concentration and storage in the DSTs may slightly alter the volume of tank waste for retrieval.

Table 1.6.3.1-1 Remediate Tank Waste Requirements (Continued)

176	**Site Boundary** A site boundary, consistent with the draft Tank Waste Remediation System (TWRS) Environmental Impact Statement (EIS) shall be used. The site boundaries for the EIS will be as follows: North *Columbia River (1/4 mile from bank per REACH EIS);* East Columbia River (1/4 mile from bank per REACH EIS); South A line running west from the Columbia River, just north of the Washington Public Power Supply System leased are, through the Wye Barricade to Highway 240; West Highway 240 and Highway 24. *Basis: Preliminary TWRS EIS*
177	**Radioactive Solid Waste Transfer** Transfer of radioactive and radioactive dangerous wastes to the Hanford Site Solid Waste program for dispositioning shall be in accordance with criteria specified in the Hanford Site Solid Waste Acceptance Criteria, WHC-EP-0063.
178	**Shielding Criteria** Guidelines for radiological design are provided in WHC-SD-GN-DGS-30011, *Radiological Design Guide. The shielding design criteria in* WHC-SD-GN-DGS-30011, Section 7.0, shall be used to determine the shielding requirements of different areas in the facility. Shielding shall be designed to limit the total whole body dose to less than 5 mSv per year.
179	**Documentation** *Records, documents,* and document control pertinent to design functions shall be in accordance with ASME-NQA-1-1994-IA, DOE 5500.7b, DOE-STD-1073-93, and ANSI/ANS-3.2-88.
180	**Personnel and Training** The system shall be designed for operation by personnel possessing qualifications in accordance with DOE 5480.20 Chapter IV, and trained in accordance with Chapter I.
181	**Quality Assurance Plan** This function shall adhere to the applicable requirements of 10 CFR 830, "Nuclear Safety Management, Subpart A, General Provisions, Section 830.120, Quality Assurance Requirements," Code of Federal Regulations. In accordance with these requirements, the project shall develop a project specific Quality Assurance Program Plan (QAPP) encompassing the following program elements as applicable to the project: Program Personnel Training and Qualifications *Quality Improvement* Documents and Records Work Processes Design Procurement Inspection And Acceptance Testing Management Assessment *Independent Assessment.* The QAPP shall be submitted to DOE for approval. All subcontractors providing services for the function, such as: architect and engineering (A-E) services, *Construction Management (CM) services,* and testing services in support of technology development shall be required to have or develop a QAPP compatible with the requirements of 10 CFR 830.120, as specific to the subcontractors area of responsibility. As long as the program is compatible with the above referenced requirements, it's bases can be founded in existing consensus standards, such as: ASME NQA-1, 10 CFR 50 Appendix B, and the ISO 9000 series. All subcontractor QAPPs shall be submitted to the WHC for review and concurrence.

1.6.4 Dispose of Tank Waste Remediation System

1.7 PROJECT ISSUES AND ASSUMPTIONS

Table 1.7-1 contains the issues that affect the project. These include project specific issues, as well as the site-level issues that have been assigned to the project for resolution. It also contains the assumptions that are used as a basis for the development of project plans until the issues are formally resolved with records of decision. The "Champion" column determines if the Project has lead responsibility or is an affected participant. If the champion belongs to the Project, the Project has the lead. If not, the Project is an affected participant. Project plans include appropriate activities and resources for resolving these issues.

Table 1.7-1 Issues That Affect The Project

ISSUE		INTERIM DECISION	CHAMPION
1	HLW and LLW Definition HLW and LLW *are not defined by quantitative characteristics.* Quantitative definitions of LLW and HLW are necessary to provide a clear criteria for segregation of non-radioactive waste, LLW, and HLW. LAW and HAW terms used by TWRS must also be quantitatively defined so that it can be related to the LLW and HLW	The definition of HLW, based on the history of the waste, provided in DOE Order 5820.2A shall be used, "The highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from the liquid, that contains a combination of transuranic waste and fission products in concentrations requiring permanent isolation." The definition of LLW provided in DOE Order 5820.2A shall be used, "Any radioactive waste that is not HLW or TRU waste is considered LLW." *ERDF waste acceptance criteria used by ER for LLW definition*	Kinzer Bacon
2	HLW Disposal Location It has not been decided where and how HLW will be dispositioned if a national repository is not opened.	HLW will be disposed offsite at a national HLW repository per NWPA 1982.	Kinzer Bacon
3	Low Level Tank Waste Disposal Criteria The disposal criteria for LLW from tanks is not consistent with that of LLW from other sources (i.e. SW and ER).	LLW from tanks will be disposed of per product specification in the privatization RFP. In addition, barriers and waste concentration determine LLW *acceptability for disposal.*	Kinzer Bacon Hildebrand
4	Sodium Disposition Potential use as a neutralization agent for tank waste is projected to be beyond 2015.	Interim store in the 400 Area and Central Waste Complex (CWC) until TWRS finalizes its Tank Waste treatment processes and identifies its Na needs.	Mecca Bliss
5	TRU Waste Disposition The projected volume of TRU waste at Hanford exceed the volume allotted for Hanford waste at WIPP.	*DOE Order 5820.2A, Chapter II, establishes the DOE policy* for TRU waste. a."Transuranic waste shall be certified to be in compliance with the Waste Isolation Pilot Plant-Waste Acceptance Criteria, placed in interim storage (if required), and sent to the Waste Isolation Pilot Plant."	Guercia Hamilton
6	TRU Waste Disposal Location It has not been decided where TRU tank waste will be dispositioned. This waste is not explicitly contained in the Integrated Database (IDB) as high level waste.	*DOE Order 5820.2A, Chapter II, establishes the DOE policy* for TRU waste. a."Transuranic waste shall be certified to be in compliance with the Waste Isolation Pilot Plant-Waste Acceptance Criteria, placed in interim storage (if required), and sent to the Waste Isolation Pilot Plant."	*Kinzer* Bacon

TANK WASTE REMEDIATION SYSTEM

FY 1997 MYWP **WBS 1.1**

Table 1.7-1 Issues That Affect The Project (Continued)

ISSUE		INTERIM DECISION	CHAMPION
7	**TRU Waste Long-Term Storage** Criteria for long-term storage of TRU waste have not been defined.	Continue to store TRU waste onsite in interim storage pending availability of an offsite repository.	Kinzer Bacon
8	**Cs & Sr Capsules Disposition Policy** It has not been decided where, how and when Cs/Sr capsules will be finally dispositioned.	MDD: Cs/Sr capsules will continue to be interim stored at WESF. If waste, disposal options are in TWRS - EIS.	Mecca Midgett
9	**Land Use Plan 200** The interim end state for the 200 Areas has not been defined	*The 200 Area and central* plateau will be used for the management of nuclear materials and the collection and disposalof waste materials that remain on site and for other related and compatible uses. Cleanup levels and disposal standards will be established in the CERCLA and RCRA permit modifications.	McClain Nemec
10	**Soil Cleanup Criteria** Criteria for contaminated soil cleanup have not been integrated.	Soil sites remediated consistent with ROD cleanup standards.	McClain Hildebrand Nemec
11	**K-Basin Sludge Disposal** Characterization requirements and disposition criteria for K-Basin sludge have not been established.	K-Basin sludge will be retrieved and transferred to DSTs. An MOU between SNF and TWRS projects to evaluate the feasibility of this plan has been signed by DOE.	Hansen Fulton
12	**325 & 204-AR Upgrades** Liquid waste collection and loading facility (340 facility) is scheduled for shutdown after FY 1998. Initially nothing will be done to preclude accepting waste at the 340 facility after this date. Transfer systems from Bldg. 325 to the tank farms via 204-AR facility will not be available per the current schedule.	*340 facility shutdown will remain on schedule.* Bldg. 325 and 204-AR upgrades will be completed to support 340 shutdown	Beard Briggs
13	**New Structural Design Criteria** TWRS and SNF have been using a new Structural Design Criteria which does not have required DOE-HQ approval. This criteria has been developed to comply with the new DOE Order 5480.28, "Natural Phenomena Hazards Mitigation" and 430.1, "Facility Safety"	Existing Structural Design Criteria will be used until DOE-RL provides direction	Kinzer

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2.0 WORK BREAKDOWN STRUCTURE

Attachment 2-1 Work Breakdown Structure/RAM

Attachment 2-2 Work Breakdown Structure Dictionary

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ATTACHMENT 2-1

TANK WASTE REMEDIATION SYSTEM WBS HIERARCHY/RAM

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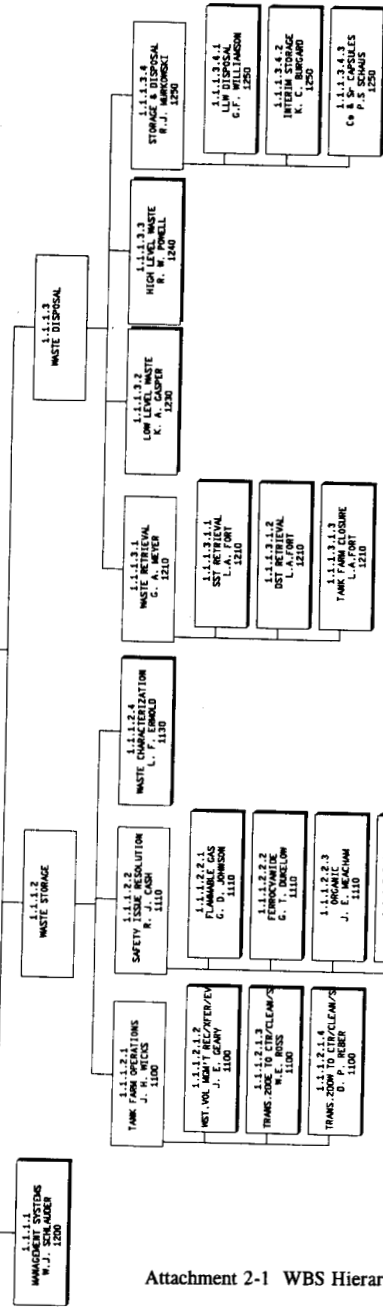

Attachment 2-1 WBS Hierarchy/RAM

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ATTACHMENT 2-2

TANK WASTE REMEDIATION SYSTEM WBS DICTIONARY SHEET

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TANK WASTE REMEDIATION SYSTEM
WORK BREAKDOWN STRUCTURE DICTIONARY

1. PROGRAM/TITLE PARTICIPANT 1.1 Tank Waste Remediation System		
2. WBS ELEMENT CODE/LEVEL 1.1.1	3. WBS ELEMENT TITLE Tank Waste Remediation System	
3. CURRENT REV NO 1	4.EFFECTIVE REV DATE October 1, 1996	5. APPROVED CHANGES

ELEMENT DESCRIPTION

1. TECHNICAL BASES

a. Goals and Objectives

GOAL	OBJECTIVES
Operate and maintain facilities to provide continued safe and environmentally sound storage.	Resolve tank system safety issues.
	Upgrade facilities.
	Reduce operating cost to minimum levels necessary to safety manage the tank waste.
Retrieve the tank waste.	Prepare tank for reuse or closure.
	Remove 99% of waste from SSTs.
	Minimize impact on repository and Hanford land use.
Pretreat the tank waste.	Minimize impact on repository and Hanford land use.
Immobilize and dispose of any remaining mixed or low-level waste.	Minimize safety and environmental risk.
	Minimize volume of low-level waste.
Close the underground storage tanks.	Minimize safety and environmental risk.

GOAL	OBJECTIVES
Immobilize high-level and TRU constituents of waste.	Minimize safety and environmental risk.
	Minimize volume of high-level waste.
	Enable permanent disposal.
Transfer excess facilities and equipment to the Environmental Restoration Mission Area.	Minimize the number of active facilities.
	Reduce operational liabilities.
	Minimize generation of secondary waste and effluent to reduce environmental impact and cost.

b. Major End-Item Deliverables

- Controlled, Clean and Stable Single Shell Tank (SST) Farms transferred to Retrieval
- Double Shell Tank (DST) Farms, Evaporator and "ancillary" equipment transferred to Retrieval
- 177 tanks characterized
- Tank safety issues closed
- Waste from 177 tanks retrieved
- Tank waste pretreated and immobilized
- Immobilized LLW disposal facilities closed
- Immobilized HLW and cesium capsules shipped to a repository
- Tank waste treatment, storage and disposal facilities deactivated, decontaminated, decommissioned and closed

2. STATEMENT OF WORK

- Retrieve tank wastes to the extent needed for tank closure, divide into high- and low-level fractions, and immobilize.

- Dispose of the immobilized Low level fraction on-site in a 200 Area disposal system (e.g., Central Plateau).
- Store the high level immobilized fraction on an interim basis until it can be shipped off site for disposal (planned for the Yucca Mountain geologic repository).
- Send Cs/Sr capsules declared waste to Yucca Mountain for HLW repository disposal.
- Close the tank farms - including the tanks - after the waste has been retrieved from the tanks. (Closure is anticipated to include filling the tank void space and adding surface barriers.)
- Maintain Single Shell Tank (SST) Farm Facilities: maintain SST farm facilities within approved safety envelope, upgrade as necessary; perform surveillance monitoring.
- Operate and maintain Double Shell Tank (DST) Farm Facilities: maintain DST farm facilities within approved safety envelope, upgrade as necessary; perform surveillance monitoring; receive new liquid waste from other activities.
- Maintain Inactive Miscellaneous Underground Storage Tanks (IMUSTS); maintain facilities within approved safety envelope.
- Operate and maintain 242-A Evaporator Facility including feed and receiver tanks; evaporate dilute wastes to conserve waste storage volume.
- Resolve urgent safety issues associated with tank wastes: identify tanks with safety risks; analyze safety risks and determine corrective action; mitigate or resolve safety risks.
- Stabilize/isolate Singe Shell Tank (SST) Farms: remove pumpable liquid; provide liquid intrusion prevention.
- Characterize waste to resolve safety risks, and operate tank farms.

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3.0 SCHEDULE BASELINE

Attachment 3-1 TWRS Program Level 0 Schedule

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ATTACHMENT 3-1

TANK WASTE REMEDIATION SYSTEM LEVEL 0 SCHEDULE

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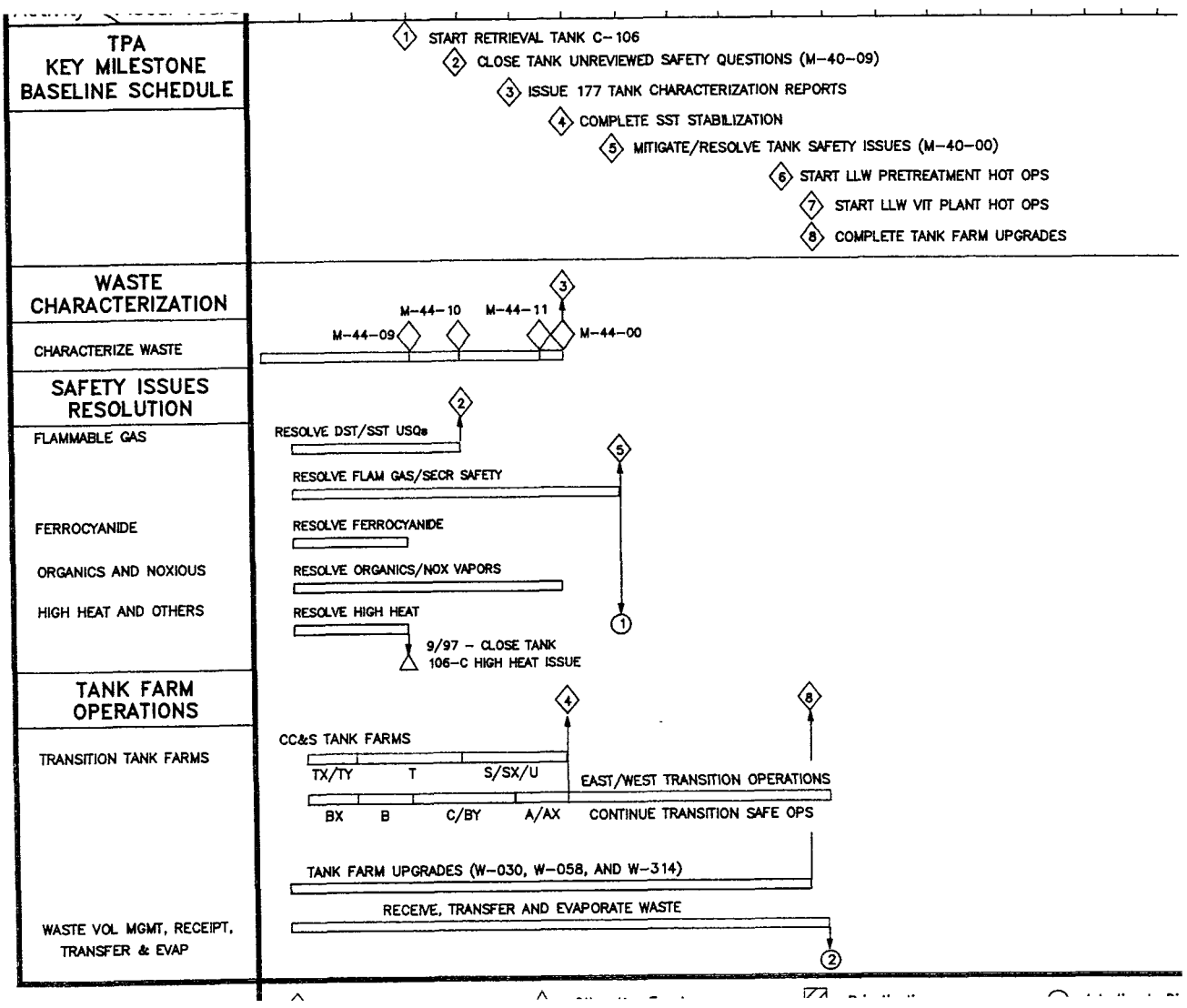
TPA KEY MILESTONE BASELINE SCHEDULE
1 START RETRIEVAL TANK C-106
2 CLOSE TANK UNREVIEWED SAFETY QUESTIONS (M-40-09)
3 ISSUE 177 TANK CHARACTERIZATION REPORTS
4 COMPLETE SST STABILIZATION
5 MITIGATE/RESOLVE TANK SAFETY ISSUES (M-40-00)
6 START LLW PRETREATMENT HOT OPS
7 START LLW VIT PLANT HOT OPS
8 COMPLETE TANK FARM UPGRADES
WASTE CHARACTERIZATION
CHARACTERIZE WASTE
M-44-09
M-44-10
M-44-11
M-44-00
SAFETY ISSUES RESOLUTION
FLAMMABLE GAS
RESOLVE DST/SST USQs
RESOLVE FLAM GAS/SECR SAFETY
FERROCYANIDE
RESOLVE FERROCYANIDE
ORGANICS AND NOXIOUS
RESOLVE ORGANICS/NOX VAPORS
HIGH HEAT AND OTHERS
RESOLVE HIGH HEAT
9/97 - CLOSE TANK 106-C HIGH HEAT ISSUE
TANK FARM OPERATIONS
TRANSITION TANK FARMS
CC&S TANK FARMS
TX/TY
T
S/SX/U
BX
B
C/BY
A/AX
EAST/WEST TRANSITION OPERATIONS
CONTINUE TRANSITION SAFE OPS
TANK FARM UPGRADES (W-030, W-058, AND W-314)
WASTE VOL MGMT, RECEIPT, TRANSFER & EVAP
RECEIVE, TRANSFER AND EVAPORATE WASTE

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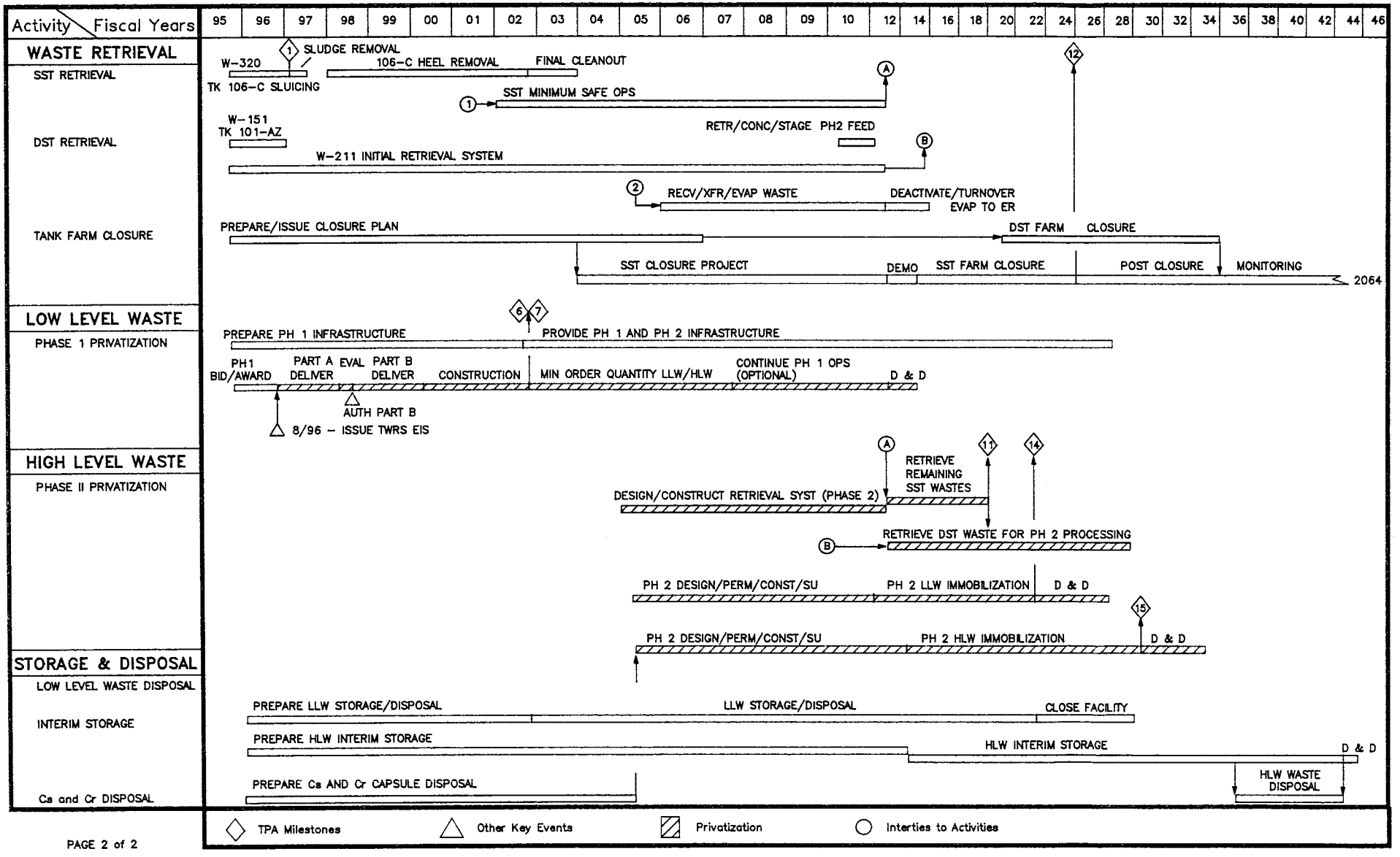
TANK WASTE REMEDIATION SYSTEM PROGRAM SUMMARY SCHEDULE (continued)



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4.0 COST BASELINE

Attachment 4-1 **Budget Authority Summary by Year by ADS**

Attachment 4-2 **Budget Authority by Year by ADS**

Attachment 4-3 **Cost Baseline by Year by ADS**

Attachment 4-4 **Cost Baseline for Execution Year by Fund Type by Month**

Attachment 4-5 **Cost Baseline for Execution Year by Cost Element by Month**

Attachment 4-6 **Basis of Estimate**

Attachment 4-7 **Average FTE Projections by COCS[1] Categories**

Attachment 4-8 **Subcontractor Exhibit**

Attachment 4-9 **Work Scope Mapping**

Attachment 4-10 **MYWP Transition Crosswalk**

[1] Common Occupation Classification System

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ATTACHMENT 4-1

BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP – TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION	F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1200–0	OE	29,095	22,444	19,958	17,673	16,986	16,655	15,708	16,172	18,548	0	163,859	173,239	0	337,098
PM & A	C/E	0	0	0	0	0	0	0	0	0	0	15	0	0	15
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**29,095**	**22,444**	**19,958**	**17,673**	**16,986**	**16,655**	**15,708**	**16,172**	**18,548**	**0**	**163,874**	**173,239**	**0**	**337,113**
96 Carryover	OE	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**29,095**	**22,444**	**19,958**	**17,673**	**16,986**	**16,655**	**15,708**	**16,172**	**18,548**	**0**	**163,874**	**173,239**	**0**	**337,113**
1100/1120–0	OE	113,973	91,130	80,100	76,500	71,650	71,300	71,300	71,300	71,300	0	543,245	718,553	0	1,261,798
Oper'ns &	C/E	2,337	870	900	850	800	700	700	700	700	0	19,980	8,557	0	28,537
Maintenance	LI	0	0	0	0	0	0	0	0	0	0	137	0	0	137
(Incl. Upgr's)	GPP	0	0	0	0	0	0	0	0	0	0	3,902	0	0	3,902
Subtotal (New B/A)		**116,310**	**92,000**	**81,000**	**77,350**	**72,450**	**72,000**	**72,000**	**72,000**	**72,000**	**0**	**567,264**	**727,110**	**0**	**1,294,374**
96 Carryover	OE	**0**										0	0	0	0
	C/E	**869**										0	869	0	869
Subtotal 96 Carryover		**869**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**869**	**0**	**869**
Total B/A		**117,179**	**92,000**	**81,000**	**77,350**	**72,450**	**72,000**	**72,000**	**72,000**	**72,000**	**0**	**567,264**	**727,979**	**0**	**1,295,243**
1120–0	OE	0	0	0	0	0	0	0	0	0	0	50,035	0	0	50,035
Tank Farm	C/E	0	0	0	0	0	0	0	0	0	0	8,334	0	0	8,334
Upgrades	GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	2,808	8,239	0	11,047
Subtotal (New B/A)		**1,678**	**2,061**	**1,500**	**1,500**	**1,500**	**0**	**0**	**0**	**0**	**0**	**61,177**	**8,239**	**0**	**69,416**
96 Carryover	GPP	**0**										0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**1,678**	**2,061**	**1,500**	**1,500**	**1,500**	**0**	**0**	**0**	**0**	**0**	**61,177**	**8,239**	**0**	**69,416**

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TWRSR&A:MYP-TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION	F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1100-1															
T. F. Restor'n/	OE	6,273	629	1,000	2,670	4,505	9,700	6,652	6,652	6,652	0	22,792	44,733	0	67,525
Safe Ops.(W-314	LI	7,584	9,571	11,000	11,716	25,248	27,191	37,897	37,897	37,897	0	0	206,001	0	206,001
Subtotal (New B/A)		**13,857**	**10,200**	**12,000**	**14,386**	**29,753**	**36,891**	**44,549**	**44,549**	**44,549**	**0**	**22,792**	**250,734**	**0**	**273,526**
96 Carryover	OE	**0**										0	0	0	0
	LI	**0**										0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**13,857**	**10,200**	**12,000**	**14,386**	**29,753**	**36,891**	**44,549**	**44,549**	**44,549**	**0**	**22,792**	**250,734**	**0**	**273,526**
1120-1	OE	0	0	0	0	0	0	0	0	0	0	236	0	0	236
SUPPT FACIL	LI	0	0	0	0	0	0	0	0	0	0	28	0	0	28
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**264**	**0**	**0**	**264**
1120-2	OE	722	0	0	0	0	0	0	0	0	0	6,568	722	0	7,290
T. F. Ventil'n	C/E	0	0	0	0	0	0	0	0	0	0	200	0	0	200
Upgrades (W-030)	LI	0	0	0	0	0	0	0	0	0	0	17,896	0	0	17,896
Subtotal (New B/A)		**722**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24,664**	**722**	**0**	**25,386**
96 Carryover	OE	**0**										0	0	0	0
	LI	**2,800**										0	2,800	0	2,800
Subtotal 96 Carryover		**2,800**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,800**	**0**	**2,800**
Total B/A		**3,522**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24,664**	**3,522**	**0**	**28,186**
1120-4	OE	1,978	549	0	0	0	0	0	0	0	0	3,045	2,527	0	5,572
Cross Site	LI	8,100	0	0	0	0	0	0	0	0	0	20,404	8,100	0	28,504
Trsf. System (W-058)															
Subtotal (New B/A)		**10,078**	**549**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23,449**	**10,627**	**0**	**34,076**
96 Carryover	OE	**0**										0	0	0	0
	LI	**14,895**										0	14,895	0	14,895
Subtotal 96 Carryover		**14,895**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14,895**	**0**	**14,895**
Total B/A		**24,973**	**549**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23,449**	**25,522**	**0**	**48,971**

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TWRSR&A:MYP – TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION	F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1120–7	OE	0	0	0	0	0	0	0	0	0	0	810	0	0	810
Aging Waste	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trsf Lines (W–021	LI	0	0	0	0	0	0	0	0	0	0	1,034	0	0	1,034
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,844**	**0**	**0**	**1,844**
96 Carryover	LI											0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,844**	**0**	**0**	**1,844**
1280	OE	0	0	0	0	0	0	0	0	0	0	8,188	0	0	8,188
New Tanks (W–236)	LI	0	0	0	0	0	0	0	0	0	0	45,314	0	0	45,314
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**53,502**	**0**	**0**	**53,502**
96 Carryover	LI											0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**53,502**	**0**	**0**	**53,502**
1100/1120	OE	122,946	92,308	81,100	79,170	76,155	81,000	77,952	77,952	77,952	0	634,919	766,535	0	1,401,454
Oper'ns &	C/E	2,337	870	900	850	800	700	700	700	700	0	28,514	8,557	0	37,071
Maintenance	LI	15,684	9,571	11,000	11,716	25,248	27,191	37,897	37,897	37,897	0	84,813	214,101	0	298,914
(Incl. Upgr's)	GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	6,710	8,239	0	14,949
Subtotal (New B/A)		**142,645**	**104,810**	**94,500**	**93,236**	**103,703**	**108,891**	**116,549**	**116,549**	**116,549**	**0**	**754,956**	**997,432**	**0**	**1,752,388**
96 Carryover	OE	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	C/E	**869**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**869**	**0**	**869**
	LI	**17,695**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17,695**	**0**	**17,695**
	GPP	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Subtotal 96 Carryover		**18,564**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18,564**	**0**	**18,564**
Total B/A		**161,209**	**104,810**	**94,500**	**93,236**	**103,703**	**108,891**	**116,549**	**116,549**	**116,549**	**0**	**754,956**	**1,015,996**	**0**	**1,770,952**

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TWRSR&A:MYP – TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION	F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1110-0															
Waste Tank	OE	29,193	31,092	16,218	11,489	6,022	0	0	0	0	0	166,242	94,014	0	260,256
Safety	C/E	9,864	14,185	5,817	0	0	0	0	0	0	0	67,671	29,866	0	97,537
Subtotal (New B/A)		**39,057**	**45,277**	**22,035**	**11,489**	**6,022**	**0**	**0**	**0**	**0**	**0**	**233,913**	**123,880**	**0**	**357,793**
96 Carryover	OE	100										0	100	0	100
	C/E	0										0	0	0	0
Subtotal 96 Carryover		100	0	0	0	0	0	0	0	0	0	0	100	0	100
Total B/A		**39,157**	**45,277**	**22,035**	**11,489**	**6,022**	**0**	**0**	**0**	**0**	**0**	**233,913**	**123,980**	**0**	**357,893**
1130-0	OE	61,068	70,834	71,050	72,865	58,686	58,117	0	0	0	0	255,575	392,620	0	648,195
Waste Charact'zation	C/E	432	4,903	4,687	2,827	290	865	0	0	0	0	25,438	14,004	0	39,442
Subtotal (New B/A)		**61,500**	**75,737**	**75,737**	**75,692**	**58,976**	**58,982**	**0**	**0**	**0**	**0**	**281,013**	**406,624**	**0**	**687,637**
96 Carryover	OE	200										0	200	0	200
	C/E	0										0	0	0	0
Subtotal 96 Carryover		200	0	0	0	0	0	0	0	0	0	0	200	0	200
Total B/A		**61,700**	**75,737**	**75,737**	**75,692**	**58,976**	**58,982**	**0**	**0**	**0**	**0**	**281,013**	**406,824**	**0**	**687,837**
STORAGE SUMMARY	OE	**213,207**	**194,234**	**168,368**	**163,524**	**140,863**	**139,117**	**77,952**	**77,952**	**77,952**	**0**	**1,056,736**	**1,253,169**	**0**	**2,309,905**
	C/E	**12,633**	**19,958**	**11,404**	**3,677**	**1,090**	**1,565**	**700**	**700**	**700**	**0**	**121,623**	**52,427**	**0**	**174,050**
	LI	**15,684**	**9,571**	**11,000**	**11,716**	**25,248**	**27,191**	**37,897**	**37,897**	**37,897**	**0**	**84,813**	**214,101**	**0**	**298,914**
	GPP	**1,678**	**2,061**	**1,500**	**1,500**	**1,500**	**0**	**0**	**0**	**0**	**0**	**6,710**	**8,239**	**0**	**14,949**
Subtotal (New B/A)		**243,202**	**225,824**	**192,272**	**180,417**	**168,701**	**167,873**	**116,549**	**116,549**	**116,549**	**0**	**1,269,882**	**1,527,936**	**0**	**2,797,818**
96 Carryover	OE	**300**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**300**	**0**	**300**
	C/E	**869**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**869**	**0**	**869**
	LI	**17,695**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17,695**	**0**	**17,695**
	GPP	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Subtotal 96 Carryover		**18,864**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18,864**	**0**	**18,864**
	OE	**213,507**	**194,234**	**168,368**	**163,524**	**140,863**	**139,117**	**77,952**	**77,952**	**77,952**	**0**	**1,056,736**	**1,253,469**	**0**	**2,310,205**
	C/E	**13,502**	**19,958**	**11,404**	**3,677**	**1,090**	**1,565**	**700**	**700**	**700**	**0**	**121,623**	**53,296**	**0**	**174,919**
	LI	**33,379**	**9,571**	**11,000**	**11,716**	**25,248**	**27,191**	**37,897**	**37,897**	**37,897**	**0**	**84,813**	**231,796**	**0**	**316,609**
	GPP	**1,678**	**2,061**	**1,500**	**1,500**	**1,500**	**0**	**0**	**0**	**0**	**0**	**6,710**	**8,239**	**0**	**14,949**
Total B/A		**262,066**	**225,824**	**192,272**	**180,417**	**168,701**	**167,873**	**116,549**	**116,549**	**116,549**	**0**	**1,269,882**	**1,546,800**	**0**	**2,816,682**

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TWRSR&A:MYP - TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION	F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 - FY 1996	10 YEARS FY 1997 - FY 2006	OUT YRS FY 2007 - FY 2064	LIFE CYCLE FY 1993 - FY 2064
1210-0	OE	11,235	13,337	22,299	39,133	33,350	45,089	78,573	64,688	62,562	111,938	40,638	482,204	722,622	1,245,464
Waste	C/E	0	0	0	0	0	0	0	0	0	0	840	0	0	840
Retrieval	LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**11,235**	**13,337**	**22,299**	**39,133**	**33,350**	**45,089**	**78,573**	**64,688**	**62,562**	**111,938**	**41,478**	**482,204**	**722,622**	**1,246,304**
96 Carryover	OE	**1,100**										0	1,100	0	1,100
	C/E	**0**										0	0	0	0
Subtotal 96 Carryover		**1,100**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,100**	**0**	**1,100**
Total B/A		**12,335**	**13,337**	**22,299**	**39,133**	**33,350**	**45,089**	**78,573**	**64,688**	**62,562**	**111,938**	**41,478**	**483,304**	**722,622**	**1,247,404**
1210-2															
101-AZ Retr'vl System (W-151)	OE	0	0	0	0	0	0	0	0	0	0	5,565	0	0	5,565
	C/E	0	0	0	0	0	0	0	0	0	0	741	0	0	741
	LI	0	0	0	0	0	0	0	0	0	0	15,452	0	0	15,452
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21,758**	**0**	**0**	**21,758**
96 Carryover	OE											0	0	0	0
	C/E											0	0	0	0
	LI											0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21,758**	**0**	**0**	**21,758**
1210-3															
Initial Tank Retr'vl System (W-211)	OE	962	2,141	1,665	2,004	1,917	1,949	3,003	1,946	1,783	2,019	3,256	19,389	6,416	29,061
	C/E	0	0	0	0	0	0	0	0	0	0	1,292	0	0	1,292
	LI	12,600	15,100	14,576	22,197	17,096	17,828	15,900	17,400	18,900	17,600	8,080	169,197	22,823	200,100
Subtotal (New B/A)		**13,562**	**17,241**	**16,241**	**24,201**	**19,013**	**19,777**	**18,903**	**19,346**	**20,683**	**19,619**	**12,628**	**188,586**	**29,239**	**230,453**
96 Carryover	OE	**0**										0	0	0	0
	LI	**1,900**										0	1,900	0	1,900
Subtotal 96 Carryover		**1,900**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,900**	**0**	**1,900**
Total B/A		**15,462**	**17,241**	**16,241**	**24,201**	**19,013**	**19,777**	**18,903**	**19,346**	**20,683**	**19,619**	**12,628**	**190,486**	**29,239**	**232,353**
1210-4															
106-C Sluic'g (W-320)	OE	112	0	0	0	0	0	0	0	0	0	59,045	112	0	59,157
	C/E	0	0	0	0	0	0	0	0	0	0	2,204	0	0	2,204
Subtotal (New B/A)		**112**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**61,249**	**112**	**0**	**61,361**
96 Carryover	OE											0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**112**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**61,249**	**112**	**0**	**61,361**

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TWRSR&A:MYP – TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1210 SUMMARY														
WASTE OE	12,309	15,478	23,964	41,137	35,267	47,038	81,576	66,634	64,345	113,957	108,504	501,705	729,038	1,339,247
RETRIEVAL C/E	0	0	0	0	0	0	0	0	0	0	5,077	0	0	5,077
LI	12,600	15,100	14,576	22,197	17,096	17,828	15,900	17,400	18,900	17,600	23,532	169,197	22,823	215,552
Subtotal (New B/A)	24,909	30,578	38,540	63,334	52,363	64,866	97,476	84,034	83,245	131,557	137,113	670,902	751,861	1,559,876
96 Carryover OE	1,100	0	0	0	0	0	0	0	0	0	0	1,100	0	1,100
C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LI	1,900	0	0	0	0	0	0	0	0	0	0	1,900	0	1,900
Subtotal 96 Carryover	3,000	0	0	0	0	0	0	0	0	0	0	3,000	0	3,000
OE	13,409	15,478	23,964	41,137	35,267	47,038	81,576	66,634	64,345	113,957	108,504	502,805	729,038	1,340,347
C/E	0	0	0	0	0	0	0	0	0	0	5,077	0	0	5,077
LI	14,500	15,100	14,576	22,197	17,096	17,828	15,900	17,400	18,900	17,600	23,532	171,097	22,823	217,452
Total B/A	27,909	30,578	38,540	63,334	52,363	64,866	97,476	84,034	83,245	131,557	137,113	673,902	751,861	1,562,876
1250–0 OE	7,257	9,631	8,824	14,428	17,616	12,876	10,396	13,985	12,007	16,829	92,303	123,849	5,536,435	5,752,587
Storage & C/E	0	545	612	17,557	66	0	0	0	0	0	4,487	18,780	0	23,267
Disposal LI	0	0	480	5,263	26,678	17,055	64,153	86,638	481	959	(162)	201,707	1,202,928	1,404,473
(95 – 1230)														
Subtotal (New B/A)	7,257	10,176	9,916	37,248	44,360	29,931	74,549	100,623	12,488	17,788	96,628	344,336	6,739,363	7,180,327
96 Carryover OE											0	0	0	0
C/E											0	0	0	0
Subtotal 96 Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A	7,257	10,176	9,916	37,248	44,360	29,931	74,549	100,623	12,488	17,788	96,628	344,336	6,739,363	7,180,327
1230–0 OE	7,224	12,173	12,611	12,351	12,293	13,391	3,447	1,154	0	0	70,966	74,644	315,385	460,995
Low Level C/E	0	0	0	0	0	0	0	0	0	0	733	0	0	733
Waste Disp'l ('95 1220/IPM)														
Subtotal (New B/A)	7,224	12,173	12,611	12,351	12,293	13,391	3,447	1,154	0	0	71,699	74,644	315,385	461,728
96 Carryover OE											0	0	0	0
C/E											0	0	0	0
Subtotal 96 Carryover	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A	7,224	12,173	12,611	12,351	12,293	13,391	3,447	1,154	0	0	71,699	74,644	315,385	461,728

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TWRSR&A:MYP – TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION	F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1230–1	OE	2,095	1,783	898	4,181	14,445	55,307	48,245	48,436	48,245	48,052	0	271,687	1,689,329	1,961,016
Privatiz'n	LI	0	0	14,014	9,938	478	0	0	0	0	0	0	24,430	0	24,430
Infrastructure															
Subtotal (New B/A)		**2,095**	**1,783**	**14,912**	**14,119**	**14,923**	**55,307**	**48,245**	**48,436**	**48,245**	**48,052**	**0**	**296,117**	**1,689,329**	**1,985,446**
96 Carryover	OE											0	0	0	0
Total B/A		**2,095**	**1,783**	**14,912**	**14,119**	**14,923**	**55,307**	**48,245**	**48,436**	**48,245**	**48,052**	**0**	**296,117**	**1,689,329**	**1,985,446**
PRI000	OE	2,900	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	0	55,100	156,600	211,700
Radiolog'l & Nucl. Oversite	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**2,900**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**0**	**55,100**	**156,600**	**211,700**
96 Carryover	OE											0	0	0	0
Total B/A		**2,900**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**0**	**55,100**	**156,600**	**211,700**
1230 SUMMARY	OE	12,219	19,756	19,309	22,332	32,538	74,498	57,492	55,390	54,045	53,852	70,966	401,431	2,161,314	2,633,711
Low Level	C/E	0	0	14,014	9,938	478	0	0	0	0	0	733	24,430	0	25,163
Waste Disp'l ('95 1220/IPM)															
Subtotal (New B/A)		**12,219**	**19,756**	**33,323**	**32,270**	**33,016**	**74,498**	**57,492**	**55,390**	**54,045**	**53,852**	**71,699**	**425,861**	**2,161,314**	**2,658,874**
96 Carryover	OE	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	C/E	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**12,219**	**19,756**	**33,323**	**32,270**	**33,016**	**74,498**	**57,492**	**55,390**	**54,045**	**53,852**	**71,699**	**425,861**	**2,161,314**	**2,658,874**
1240–0	OE	6,702	5,097	8,220	9,599	9,919	9,421	27,351	25,952	13,229	13,184	27,923	128,674	318,611	475,208
High Level	C/E	0	0	0	0	0	0	0	0	0	0	2,714	0	0	2,714
Waste Disposal	LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**6,702**	**5,097**	**8,220**	**9,599**	**9,919**	**9,421**	**27,351**	**25,952**	**13,229**	**13,184**	**30,637**	**128,674**	**318,611**	**477,922**
96 Carryover	OE											0	0	0	0
	CE											0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**6,702**	**5,097**	**8,220**	**9,599**	**9,919**	**9,421**	**27,351**	**25,952**	**13,229**	**13,184**	**30,637**	**128,674**	**318,611**	**477,922**

Attachment 4-1 Budget Authority Summary by Year by ADS (Page 7)

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TWRSR&A:MYP - TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION	F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1240-1	OE	0	0	0	0	0	0	0	0	0	0	27,092	0	0	27,092
H.W.V.P.	C/E	0	0	0	0	0	0	0	0	0	0	1,717	0	0	1,717
	LI	0	0	0	0	0	0	0	0	0	0	131,788	0	0	131,788
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**160,597**	**0**	**0**	**160,597**
96 Carryover	LI											0	0	0	0
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**160,597**	**0**	**0**	**160,597**
1270-0	OE	0	0	0	0	0	0	0	0	0	0	1,224	0	0	1,224
M.P.S.C.															
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,224**	**0**	**0**	**1,224**
96 Carryover	OE											0	0	0	0
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,224**	**0**	**0**	**1,224**
1280-2	OE	0	0	0	0	0	0	0	0	0	0	40,560	0	0	40,560
I.P.M.															
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40,560**	**0**	**0**	**40,560**
96 Carryover	OE											0	0	0	0
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40,560**	**0**	**0**	**40,560**
1290	OE	0	0	0	0	0	0	0	0	0	0	13,304	0	0	13,304
Privatz'n	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13,304**	**0**	**0**	**13,304**
96 Carryover	OE	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**0**	**0**	0
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13,304**	**0**	**0**	**13,304**

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TWRSR&A:MYP – TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
DISPOSAL SUMMARY														
OE	38,487	49,962	60,317	87,496	95,340	143,833	176,815	161,961	143,626	197,822	381,876	1,155,659	8,745,398	10,282,933
C/E	0	545	612	17,557	66	0	0	0	0	0	14,728	18,780	0	33,508
LI	12,600	15,100	29,070	37,398	44,252	34,883	80,053	104,038	19,381	18,559	155,158	395,334	1,225,751	1,776,243
Subtotal (New B/A)	51,087	65,607	89,999	142,451	139,658	178,716	256,868	265,999	163,007	216,381	551,762	1,569,773	9,971,149	12,092,684
96 Carryover OE	1,100	0	0	0	0	0	0	0	0	0	0	1,100	0	1,100
C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LI	1,900	0	0	0	0	0	0	0	0	0	0	1,900	0	1,900
Subtotal 96 Carryover	3,000	0	0	0	0	0	0	0	0	0	0	3,000	0	3,000
Total B/A	54,087	65,607	89,999	142,451	139,658	178,716	256,868	265,999	163,007	216,381	551,762	1,572,773	9,971,149	12,095,684
TWRS RESERVE OE	9,216	12,536	8,353	12,650	11,059	(38,460)	(75,829)	(97,304)	2,965	87,379	0	(67,435)	67,435	0
& ESCALATION C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESCAL'N	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	0	128,635	12,398,965	12,527,600
Subtotal (New B/A)	9,216	12,536	8,353	12,650	11,059	(28,652)	(54,533)	(64,128)	36,488	118,211	0	61,200	12,466,400	12,527,600
96 Carryover OE														
Total B/A	9,216	12,536	8,353	12,650	11,059	(28,652)	(54,533)	(64,128)	36,488	118,211	0	61,200	12,466,400	12,527,600
TOTAL EM–30 TWRS														
OE	290,005	279,176	256,996	281,343	264,248	261,145	194,646	158,781	243,091	285,201	1,602,471	2,514,632	8,812,833	12,929,936
C/E	12,633	20,503	12,016	21,234	1,156	1,565	700	700	700	0	136,366	71,207	0	207,573
LI	28,284	24,671	40,070	49,114	69,500	62,074	117,950	141,935	57,278	18,559	239,971	609,435	1,225,751	2,075,157
GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	6,710	8,239	0	14,949
ESCAL'N	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	0	128,635	12,398,965	12,527,600
Subtotal (New B/A)	332,600	326,411	310,582	353,191	336,404	324,784	313,296	301,416	301,069	303,760	1,985,518	3,203,513	10,038,584	15,227,615
96 Carryover OE	1,400	0	0	0	0	0	0	0	0	0	0	1,400	0	1,400
C/E	869	0	0	0	0	0	0	0	0	0	0	869	0	869
LI	19,595	0	0	0	0	0	0	0	0	0	0	19,595	0	19,595
GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover	21,864	0	0	0	0	0	0	0	0	0	0	21,864	0	21,864
OE	291,405	279,176	256,996	281,343	264,248	261,145	194,646	158,781	243,091	285,201	1,602,471	2,516,032	8,812,833	12,931,336
C/E	13,502	20,503	12,016	21,234	1,156	1,565	700	700	700	0	136,366	72,076	0	208,442
LI	47,879	24,671	40,070	49,114	69,500	62,074	117,950	141,935	57,278	18,559	239,971	629,030	1,225,751	2,094,752
GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	6,710	8,239	0	14,949
ESCAL'N	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	0	128,635	12,398,965	12,527,600
Total B/A TWRS	354,464	326,411	310,582	353,191	336,404	334,592	334,592	334,592	334,592	334,592	1,985,518	3,354,012	22,437,549	27,777,079

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TWRSR&A:MYP – TBL 09/19/96

TANK WASTE REMEDIATION SYSTEM
BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

ADS/ DESCRIPTION F/T	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
RL06WT51														
HTI Support OE (EM-50)	7,000	10,000	10,000	10,000	0	0	0	0	0	0	0	37,000	0	37,000
Subtotal (New B/A)	**7,000**	**10,000**	**10,000**	**10,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**37,000**	**0**	**37,000**
96 Carryover OE	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A	**7,000**	**10,000**	**10,000**	**10,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**37,000**	**0**	**37,000**
TWRS SUMMARY														
(EM30 / EM50) OE	297,005	289,176	266,996	291,343	264,248	261,145	194,646	158,781	243,091	285,201	1,602,471	2,551,632	8,812,833	12,966,936
C/E	12,633	20,503	12,016	21,234	1,156	1,565	700	700	700	0	136,366	71,207	0	207,573
LI	28,284	24,671	40,070	49,114	69,500	62,074	117,950	141,935	57,278	18,559	239,971	609,435	1,225,751	2,075,157
GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	6,710	8,239	0	14,949
ESCAL'N	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	0	128,635	12,398,965	12,527,600
Subtotal (New B/A)	**339,600**	**336,411**	**320,582**	**363,191**	**336,404**	**324,784**	**313,296**	**301,416**	**301,069**	**303,760**	**1,985,518**	**3,240,513**	**10,038,584**	**15,264,615**
96 Carryover OE	**1,400**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,400**	**0**	**1,400**
C/E	869	0	0	0	0	0	0	0	0	0	0	869	0	869
LI	19,595	0	0	0	0	0	0	0	0	0	0	19,595	0	19,595
GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover	**21,864**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21,864**	**0**	**21,864**
OE	298,405	289,176	266,996	291,343	264,248	261,145	194,646	158,781	243,091	285,201	1,602,471	2,553,032	8,812,833	12,968,336
C/E	13,502	20,503	12,016	21,234	1,156	1,565	700	700	700	0	136,366	72,076	0	208,442
LI	47,879	24,671	40,070	49,114	69,500	62,074	117,950	141,935	57,278	18,559	239,971	629,030	1,225,751	2,094,752
GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	6,710	8,239	0	14,949
ESCAL'N	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	0	128,635	12,398,965	12,527,600
• **Total B/A TWRS**	**361,464**	**336,411**	**320,582**	**363,191**	**336,404**	**334,592**	**334,592**	**334,592**	**334,592**	**334,592**	**1,985,518**	**3,391,012**	**22,437,549**	**27,814,079**

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BUDGET AUTHORITY BY YEAR BY ADS

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TWRSR&A: MYP-TBL1.WK3 09/19/96

TANK WASTE REMEDIATION SYSTEM

BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

WBS	ADS #	TITLE	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 - FY 1996	10 YEARS FY 1997 - FY 2006	OUT YRS FY 2007 - FY 2064	LIFE CYCLE FY 1993 - FY 2064
1.1.1.1	1200-0	PM & A	29,095	22,444	19,958	17,673	16,986	16,655	15,708	16,172	18,548	0	163,874	173,239	0	337,113
1.1.1.2.1	1100-0	Operations & Maintenance	117,179	92,000	81,000	77,350	72,450	72,000	72,000	72,000	72,000	0	567,264	727,979	0	1,295,243
1.1.1.2.1	1120-0	Tank Farm Upgrades	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	61,177	8,239	0	69,416
1.1.1.2.1.3.26	1100-1	T. F. Restor'n (W-314)	13,857	10,200	12,000	14,386	29,753	36,891	44,549	44,549	44,549	0	22,792	250,734	0	273,526
1.1.1.2.1	1120-1	SUPPT FACIL	0	0	0	0	0	0	0	0	0	0	264	0	0	264
1.1.1.2.1.3.27	1120-2	TF Vent Upgrades (W-030)	3,522	0	0	0	0	0	0	0	0	0	24,664	3,522	0	28,186
1.1.1.2.1.4.16	1120-4	Cross Site Trsf. (W-058)	24,973	549	0	0	0	0	0	0	0	0	23,449	25,522	0	48,971
1.1.1.2.1	1120-7	Aging Wst Trsf Lines(W-028)	0	0	0	0	0	0	0	0	0	0	1,844	0	0	1,844
1.1.1.2.1	1280	New Tanks (w-236)	0	0	0	0	0	0	0	0	0	0	53,502	0	0	53,502
1.1.1.2.1		**Subtotal Oper'ns & Maint.**	161,209	104,810	94,500	93,236	103,703	108,891	116,549	116,549	116,549	0	754,956	1,015,996	0	1,770,952
1.1.1.2.2	1110-0	Waste Tank Safety	39,157	45,277	22,035	11,489	6,022	0	0	0	0	0	233,913	123,980	0	357,893
1.1.1.2.3	1130-0	Waste Characterization	61,700	75,737	75,737	75,692	58,976	58,982	0	0	0	0	281,013	406,824	0	687,837
1.1.1.2		STORAGE SUMMARY	262,066	225,824	192,272	180,417	168,701	167,873	116,549	116,549	116,549	0	1,269,882	1,546,800	0	2,816,682

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TWRSR&A: MYP-TBL1.WK3 09/19/96

TANK WASTE REMEDIATION SYSTEM

BUDGET AUTHORITY SUMMARY BY YEAR BY ADS

WBS	ADS #	TITLE	FY 1997 BUDGET AUTH	FY 1998 BUDGET AUTH	FY 1999 BUDGET AUTH	FY 2000 BUDGET AUTH	FY 2001 BUDGET AUTH	FY 2002 BUDGET AUTH	FY 2003 BUDGET AUTH	FY 2004 BUDGET AUTH	FY 2005 BUDGET AUTH	FY 2006 BUDGET AUTH	PRIOR YRS FY 1993 – FY 1996	10 YEARS FY 1997 – FY 2006	OUT YRS FY 2007 – FY 2064	LIFE CYCLE FY 1993 – FY 2064
1.1.1.3.1	1210–0	Waste Retieval	12,335	13,337	22,299	39,133	33,350	45,089	78,573	64,688	62,562	111,938	41,478	483,304	722,622	1,247,404
1.1.1.3.1.2.03	1210–2	101–AZ Retr'vl Sys. (W–151)	0	0	0	0	0	0	0	0	0	0	21,758	0	0	21,758
1.1.1.3.1.2.04	1210–3	Init. Tank Retr'vl Sys. (W–211)	15,462	17,241	16,241	24,201	19,013	19,777	18,903	19,346	20,683	19,619	12,628	190,486	29,239	232,353
1.1.1.3.1.1.03	1210–4	106–C Sluic'g (W–320)	112	0	0	0	0	0	0	0	0	0	61,249	112	0	61,361
1.1.1.3.1	1210	**Subtotal Retrieval**	27,909	30,578	38,540	63,334	52,363	64,866	97,476	84,034	83,245	131,557	137,113	673,902	751,861	1,562,876
1.1.1.3.4	1250–0	Storage & Disposal	7,257	10,176	9,916	37,248	44,360	29,931	74,549	100,623	12,488	17,788	96,628	344,336	6,739,363	7,180,327
1.1.1.3.2.2	1230–0	Low Level Waste Disp'l	7,224	12,173	12,611	12,351	12,293	13,391	3,447	1,154	0	0	71,699	74,644	315,385	461,728
1.1.1.3.2.3	1230–1	Privatiz'n Infrastructure	2,095	1,783	14,912	14,119	14,923	55,307	48,245	48,436	48,245	48,052	0	296,117	1,689,329	1,985,446
1.1.1.3.2.?	PRI000	Radiolog'l & Nucl. Oversite	2,900	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	0	55,100	156,600	211,700
1.1.1.3.2.2	1230	**Subtotal Low Level Waste**	12,219	19,756	33,323	32,270	33,016	74,498	57,492	55,390	54,045	53,852	71,699	425,861	2,161,314	2,658,874
1.1.1.3.3	1240–0	High Level Waste Disposal	6,702	5,097	8,220	9,599	9,919	9,421	27,351	25,952	13,229	13,184	30,637	128,674	318,611	477,922
??????	1240–1	H.W.V.P.	0	0	0	0	0	0	0	0	0	0	160,597	0	0	160,597
??????	1270–0	M.P.S.C.	0	0	0	0	0	0	0	0	0	0	1,224	0	0	1,224
?????	1280–2	I.P.M.	0	0	0	0	0	0	0	0	0	0	40,560	0	0	40,560
?????	1290	Privatz'n	0	0	0	0	0	0	0	0	0	0	13,304	0	0	13,304
1.1.1.3		DISPOSAL SUMMARY	54,087	65,607	89,999	142,451	139,658	178,716	256,868	265,999	163,007	216,381	551,762	1,572,773	9,971,149	12,095,684
1.1.1		TWRS RESERVE/	9,216	12,536	8,353	12,650	11,059	(38,460)	(75,829)	(97,304)	2,965	87,379	0	(67,435)	67,435	0
1.1.1		ESCALATION	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	0	128,635	12,398,965	12,527,600
1.1.1.		TOTAL TWRS (EM–30)	354,464	326,411	310,582	353,191	336,404	334,592	334,592	334,592	334,592	334,592	1,985,518	3,354,012	22,437,549	27,777,079
1.1.1.3.1.1.4	RL06WT51	HTI Support	7,000	10,000	10,000	10,000	0	0	0	0	0	0	0	37,000	0	37,000
1.1.1		TOTAL TWRS (EM–30 & EM–50)	361,464	336,411	320,582	363,191	336,404	334,592	334,592	334,592	334,592	334,592	1,985,518	3,391,012	22,437,549	27,814,079

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COST BASELINE BY YEAR BY ADS

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TANK WASTE REMEDIATION SYSTEM

TWRSRBA: MYP_PRJ2.W. 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
1.1.1.1 Mgmt. Systems	1200	EXP	29,095	22,444	19,958	17,673	16,986	16,655	15,708	16,172	18,548	0	173,239	0	0	173,239
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL -- BCWS / PMB (1)			**29,095**	**22,444**	**19,958**	**17,673**	**16,986**	**16,655**	**15,708**	**16,172**	**18,548**	**0**	**173,239**	**0**	**0**	**173,239**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**29,095**	**22,444**	**19,958**	**17,673**	**16,986**	**16,655**	**15,708**	**16,172**	**18,548**	**0**	**173,239**	**0**	**0**	**173,239**

*** Includes FY 1993 -- FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).

(2) Management Reserve; And Line Item Contingency Held By DOE-RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PRJ2 W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993–FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.2.1																
TANK FARM OPER'NS & MAINT.																
	1100–0	EXP	113,104	91,130	80,106	76,507	71,663	71,300	71,300	71,300	71,300	0	717,710	0	0	717,710
		C/E	3,206	870	894	843	787	700	700	700	700	0	9,400	0	0	9,400
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**116,310**	**92,000**	**81,000**	**77,350**	**72,450**	**72,000**	**72,000**	**72,000**	**72,000**	**0**	**727,110**	**0**	**0**	**727,110**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			869	0	0	0	0	0	0	0	0	0	869	0	0	869
TOTAL			117,179	92,000	81,000	77,350	72,450	72,000	72,000	72,000	72,000	0	727,979	0	0	727,979
																1,015,996

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB). (288,017)

(2) Management Reserve; And Line Item Contingency Held By DOE–RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PRJ2.WK 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
Transition 200E-C,C,& S (1120)																
UPGRADES 1120-0		EXP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	8,239	0	0	8,239
TOTAL - BCWS / PMB (1)			**1,678**	**2,061**	**1,500**	**1,500**	**1,500**	**0**	**0**	**0**	**0**	**0**	**8,239**	**0**	**0**	**8,239**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**1,678**	**2,061**	**1,500**	**1,500**	**1,500**	**0**	**0**	**0**	**0**	**0**	**8,239**	**0**	**0**	**8,239**

*** Includes FY 1993 - FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE-RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TANK WASTE REMEDIATION SYSTEM

TWRSR&A MYP_PRJ2.WI 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993– FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
T.F. Vent Upgrades																
W–030 1120–2		EXP	722	0	0	0	0	0	0	0	0	0	722	0	0	722
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**722**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**722**	**0**	**0**	**722**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			2,800	0	0	0	0	0	0	0	0	0	2,800	0	0	2,800
TOTAL			**3,522**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,522**	**0**	**0**	**3,522**
T.F. Rest'n/Safe Ops																
W–314 1100–1		EXP	6,273	629	1,000	2,670	4,505	9,700	6,652	6,652	6,652	0	44,733	0	0	44,733
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	7,584	9,571	11,000	11,716	25,248	27,191	37,897	37,897	37,897	0	206,001	0	0	206,001
TOTAL – BCWS / PMB (1)			**13,857**	**10,200**	**12,000**	**14,386**	**29,753**	**36,891**	**44,549**	**44,549**	**44,549**	**0**	**250,734**	**0**	**0**	**250,734**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**13,857**	**10,200**	**12,000**	**14,386**	**29,753**	**36,891**	**44,549**	**44,549**	**44,549**	**0**	**250,734**	**0**	**0**	**250,734**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE–RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TWRSPAA: MYP_PRJ2.W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
Cross Site Xfer Line																
W-058	1120-4	EXP	1,978	549	0	0	0	0	0	0	0	0	2,527	0	0	2,527
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	8,100	0	0	0	0	0	0	0	0	0	8,100	0	0	8,100
TOTAL - BCWS / PMB (1)			10,078	549	0	0	0	0	0	0	0	0	10,627	0	0	10,627
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			14,895	0	0	0	0	0	0	0	0	0	14,895	0	0	14,895
TOTAL			24,973	549	0	0	0	0	0	0	0	0	25,522	0	0	25,522
Aging Waste Trsf Line																
W-028	1120-7	EXP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL - BCWS / PMB (1)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			0	0	0	0	0	0	0	0	0	0	0	0	0	0

*** Includes FY 1993 - FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE-RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TWRSR&A. MYP_PRJ2.W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
1.1.1.2.2 WASTE TANK SAFETY																
	ADS 1110	EXP	29,293	31,092	16,218	11,489	6,022	0	0	0	0	0	94,114	0	0	94,114
		C/E	9,764	14,185	5,817	0	0	0	0	0	0	0	29,766	0	0	29,766
TOTAL – BCWS / PMB (1)			**39,057**	**45,277**	**22,035**	**11,489**	**6,022**	**0**	**0**	**0**	**0**	**0**	**123,880**	**0**	**0**	**123,880**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			100	0	0	0	0	0	0	0	0	0	100	0	0	100
TOTAL			**39,157**	**45,277**	**22,035**	**11,489**	**6,022**	**0**	**0**	**0**	**0**	**0**	**123,980**	**0**	**0**	**123,980**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).

(2) Management Reserve; And Line Item Contingency Held By DOE-RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TWRSR&A MYP_PRJ2 W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
1.1.1.2.4 WASTE CHARACTERIZATION	1130	EXP	61,068	70,834	71,050	72,865	58,686	58,117	0	0	0	0	392,620	0	0	392,620
		C/E	432	4,903	4,687	2,827	290	865	0	0	0	0	14,004	0	0	14,004
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**61,500**	**75,737**	**75,737**	**75,692**	**58,976**	**58,982**	**0**	**0**	**0**	**0**	**406,624**	**0**	**0**	**406,624**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			200	0	0	0	0	0	0	0	0	0	200	0	0	200
TOTAL			**61,700**	**75,737**	**75,737**	**75,692**	**58,976**	**58,982**	**0**	**0**	**0**	**0**	**406,824**	**0**	**0**	**406,824**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE-RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TWRSR&A MYP_PRJ2 W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993– FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.3.1 WASTE RETRIEVAL																
	1210–0	EXP	11,235	13,337	22,299	39,133	33,350	45,089	78,573	64,688	62,562	111,938	482,204	0	722,622	1,204,826
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**11,235**	**13,337**	**22,299**	**39,133**	**33,350**	**45,089**	**78,573**	**64,688**	**62,562**	**111,938**	**482,204**	**0**	**722,622**	**1,204,826**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			1,100	0	0	0	0	0	0	0	0	0	1,100	0	0	1,100
TOTAL			**12,335**	**13,337**	**22,299**	**39,133**	**33,350**	**45,089**	**78,573**	**64,688**	**62,562**	**111,938**	**483,304**	**0**	**722,622**	**1,205,926**
																1,015,996

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB). 189,930

(2) Management Reserve; And Line Item Contingency Held By DOE–RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

Management Reserve And Line Item Contingency Held By DOE–RL

Includes Expected Carryover Requested By Formal Change Control in FY 1997

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TWRSR&A: MYP_PRJ2 W. 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993–FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
101–AZ Retr. System																
W–151	1210–2	EXP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Init. DST Retr. System																
W–211	1210–3	EXP	962	2,141	1,665	2,004	1,917	1,949	3,003	1,946	1,783	2,019	19,389	0	6,416	25,805
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	12,600	15,100	14,576	22,197	17,096	17,828	15,900	17,400	16,900	17,600	169,197	0	22,823	192,020
TOTAL – BCWS / PMB (1)			**13,562**	**17,241**	**16,241**	**24,201**	**19,013**	**19,777**	**18,903**	**19,346**	**20,683**	**19,619**	**188,586**	**0**	**29,239**	**217,825**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			1,900	0	0	0	0	0	0	0	0	0	1,900	0	0	1,900
TOTAL			**15,462**	**17,241**	**16,241**	**24,201**	**19,013**	**19,777**	**18,903**	**19,346**	**20,683**	**19,619**	**190,486**	**0**	**29,239**	**219,725**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

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(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TWRSR&A MYP_PRJ2 W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993– FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
106–C Sluicing																
W–320	1210–4	EXP	112	0	0	0	0	0	0	0	0	0	112	0	0	112
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**112**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**112**	**0**	**0**	**112**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**112**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**112**	**0**	**0**	**112**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

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TWRSR&A_MYP_PRJ2.W\ 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
1.1.1.3.2.2																
Low Level Waste																
	1230-0	EXP	7,224	12,173	12,611	12,351	12,293	13,391	3,447	1,154	0	0	74,644	0	315,385	390,029
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL - BCWS / PMB (1)			**7,224**	**12,173**	**12,611**	**12,351**	**12,293**	**13,391**	**3,447**	**1,154**	**0**	**0**	**74,644**	**0**	**315,385**	**390,029**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**7,224**	**12,173**	**12,611**	**12,351**	**12,293**	**13,391**	**3,447**	**1,154**	**0**	**0**	**74,644**	**0**	**315,385**	**390,029**

*** Includes FY 1993 - FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

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TWRSR&A. MYP_PRJ2.W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993–FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.3.2.3																
Privatization Infrastructure																
	1230–1	EXP	2,095	1,783	898	4,181	14,445	55,307	48,245	48,436	48,245	48,052	271,687	0	1,689,329	1,961,016
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	14,014	9,938	478	0	0	0	0	0	24,430	0	0	24,430
TOTAL – BCWS / PMB (1)			**2,095**	**1,783**	**14,912**	**14,119**	**14,923**	**55,307**	**48,245**	**48,436**	**48,245**	**48,052**	**296,117**	**0**	**1,689,329**	**1,985,446**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**2,095**	**1,783**	**14,912**	**14,119**	**14,923**	**55,307**	**48,245**	**48,436**	**48,245**	**48,052**	**296,117**	**0**	**1,689,329**	**1,985,446**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

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(2) Management Reserve; And Line Item Contingency Held By DOE–RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

(DOLLARS IN THOUSANDS)

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TWRSR&A: MYP_PRJ2.WK 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993–FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.3.2 Radiolog'l & Nucl. Oversite																
	PRI000	EXP	2,900	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	55,100		156,600	211,700
		C/E	0	0	0	0	0	0	0	0	0	0	0		0	0
		LI	0	0	0	0	0	0	0	0	0	0	0		0	0
TOTAL – BCWS / PMB (1)			**2,900**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**55,100**		**156,600**	**211,700**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**2,900**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**5,800**	**55,100**	**0**	**156,600**	**211,700**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).

(2) Management Reserve; And Line Item Contingency Held By DOE–RL

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BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993–FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.3.3																
High Level Waste																
	1240–0	EXP	6,702	5,097	8,220	9,599	9,919	9,421	27,351	25,952	13,229	13,184	128,674	0	318,611	447,285
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**6,702**	**5,097**	**8,220**	**9,599**	**9,919**	**9,421**	**27,351**	**25,952**	**13,229**	**13,184**	**128,674**	**0**	**318,611**	**447,285**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**6,702**	**5,097**	**8,220**	**9,599**	**9,919**	**9,421**	**27,351**	**25,952**	**13,229**	**13,184**	**128,674**	**0**	**318,611**	**447,285**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE–RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TWRSR&A MYP_PRJ2 W- 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
1.1.1.3.4.2 STORAGE & DISPOSAL																
	ADS 1250	EXP	7,257	9,632	8,823	14,429	17,617	12,876	10,396	13,985	12,007	16,829	123,851	0	5,536,435	5,660,286
		C/E	0	544	613	17,557	66	0	0	0	0	0	18,780	0	0	18,780
		LI	0	0	480	5,262	26,677	17,055	64,153	86,638	481	959	201,705	0	1,202,928	1,404,633
TOTAL - BCWS / PMB (1)			**7,257**	**10,176**	**9,916**	**37,248**	**44,360**	**29,931**	**74,549**	**100,623**	**12,488**	**17,788**	**344,336**	**0**	**6,739,363**	**7,083,699**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**7,257**	**10,176**	**9,916**	**37,248**	**44,360**	**29,931**	**74,549**	**100,623**	**12,488**	**17,788**	**344,336**	**0**	**6,739,363**	**7,083,699**

*** Includes FY 1993 - FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE-RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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(DOLLARS IN THOUSANDS)

TANK WASTE REMEDIATION SYSTEM

TWRSRA\A: MYP_PRJ2.W\ 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS ADS FUND TWRS PROJECT	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993–FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
TWRS Program Reserve / Escalation														
EXP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESCALATION	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	128,635	0	12,398,965	12,527,600
TOTAL – BCWS / PMB (1)	**0**	**0**	**0**	**0**	**0**	**9,808**	**21,296**	**33,176**	**33,523**	**30,832**	**128,635**	**0**	**12,398,965**	**12,527,600**
Mgmt. Reserve (2)	9,216	12,536	8,353	12,650	11,059	(38,460)	(75,829)	(97,304)	2,965	87,379	(67,435)	0	67,435	0
Line Item Contingency (2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**9,216**	**12,536**	**8,353**	**12,650**	**11,059**	**(28,652)**	**(54,533)**	**(64,128)**	**36,488**	**118,211**	**61,200**	**0**	**12,466,400**	**12,527,600**
FY 1993 – FY 1996 ACTUAL COSTS														
EXP	0	0	0	0	0	0	0	0	0	0	0	1,602,471	0	1,602,471
C/E	0	0	0	0	0	0	0	0	0	0	0	136,366	0	136,366
LI	0	0	0	0	0	0	0	0	0	0	0	239,971	0	239,971
GPP	0	0	0	0	0	0	0	0	0	0	0	6,710	0	6,710
TOTAL – FY 1993–1996 A.C	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,985,518**	**0**	**246,681**
TOTAL TWRS – EM30														
EXP	280,020	266,641	248,648	268,701	253,203	299,605	270,475	256,085	240,126	197,822	2,581,326	1,602,471	8,745,398	12,929,195
C/E	13,402	20,502	12,011	21,227	1,143	1,565	700	700	700	0	71,950	136,366	0	208,316
LI	28,284	24,671	40,070	49,113	69,499	62,074	117,950	141,935	57,278	18,559	609,433	239,971	1,225,751	2,075,155
GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	8,239	6,710	0	14,949
ESCALATION	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	128,635	0	12,398,965	12,527,600
TOTAL – BCWS / PMB (1)	**323,384**	**313,875**	**302,229**	**340,541**	**325,345**	**373,052**	**410,421**	**431,896**	**331,627**	**247,213**	**3,399,583**	**1,985,518**	**22,370,114**	**14,617,704**
Mgmt. Reserve (2)	9,216	12,536	8,353	12,650	11,059	(38,460)	(75,829)	(97,304)	2,965	87,379	(67,435)	0	67,435	0
Line Item Contingency (2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)	21,864	0	0	0	0	0	0	0	0	0	21,864	0	0	21,864
TOTAL	**354,464**	**326,411**	**310,582**	**353,191**	**336,404**	**334,592**	**334,592**	**334,592**	**334,592**	**334,592**	**3,354,012**	**1,985,518**	**22,437,549**	**14,639,568**

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TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PRJ2.W 06/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993–FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.3.1.1.4 H.T.I.																
	RL06WT51	EXP	7,000	10,000	10,000	10,000	0	0	0	0	0	0	37,000	0	0	37,000
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**7,000**	**10,000**	**10,000**	**10,000**	**0**	**0**	**0**	**0**	**0**	**0**	**37,000**	**0**	**0**	**37,000**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**7,000**	**10,000**	**10,000**	**10,000**	**0**	**0**	**0**	**0**	**0**	**0**	**37,000**	**0**	**0**	**37,000**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE–RL
(3) *Includes Expected Carryover Requested By M.Y.W.P. Submittal* (Monthly Spread Incorporates Carryover by Fund Type)

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TWRSR&A MYP_PRJ2.WK 09/20/96

TANK WASTE REMEDIATION SYSTEM

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997-2006	FY 1993-FY 1996 *	OUTYEARS	FY 1997 - FY 2064 *
TWRS TOTAL																
-- EM30 & EM50																
		EXP	287,020	276,641	258,648	278,701	253,203	299,605	270,475	256,085	240,126	197,822	2,618,326	1,602,471	8,745,398	12,966,195
		C/E	13,402	20,502	12,011	21,227	1,143	1,565	700	700	700	0	71,950	136,366	0	208,316
		LI	28,284	24,671	40,070	49,113	69,499	62,074	117,950	141,935	57,278	18,559	609,433	239,971	1,225,751	2,075,155
		GPP	1,678	2,061	1,500	1,500	1,500	0	0	0	0	0	8,239	6,710	0	14,949
		ESCAL	0	0	0	0	0	9,808	21,296	33,176	33,523	30,832	128,635	0	12,398,965	12,527,600
TOTAL - BCWS / PMB (1)			**330,384**	**323,875**	**312,229**	**350,541**	**325,345**	**373,052**	**410,421**	**431,896**	**331,627**	**247,213**	**3,436,583**	**1,985,518**	**22,370,114**	**27,792,215**
Mgmt. Reserve (2)			9,216	12,536	8,353	12,650	11,059	(38,460)	(75,829)	(97,304)	2,965	87,379	(67,435)	0	67,435	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			21,864	0	0	0	0	0	0	0	0	0	21,864	0	0	21,864
TOTAL			**361,464**	**336,411**	**320,582**	**363,191**	**336,404**	**334,592**	**334,592**	**334,592**	**334,592**	**334,592**	**3,391,012**	**1,985,518**	**22,437,549**	**27,814,079**

*** Includes FY 1993 - FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).

(2) Management Reserve; And Line Item Contingency Held By DOE-RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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ATTACHMENT 4-4

COST BASELINE FOR EXECUTION YEAR BY FUND TYPE BY MONTH

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TWRSR&A:MYP-TBL:09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1200-0	OE	2,895	2,400	2,427	2,732	2,371	2,624	2,437	2,304	2,273	2,275	2,203	2,154	29,095
PM & A	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		2,895	2,400	2,427	2,732	2,371	2,624	2,437	2,304	2,273	2,275	2,203	2,154	29,095
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		2,895	2,400	2,427	2,732	2,371	2,624	2,437	2,304	2,273	2,275	2,203	2,154	29,095
1100/1120-0	OE	10,313	8,546	8,880	9,339	8,371	9,329	9,990	9,645	9,788	9,808	10,111	9,853	113,973
Oper'ns &	C/E	263	268	267	268	267	268	267	268	267	268	267	268	3,206
Maintenance	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
(Incl. Upgr's)	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		10,576	8,814	9,147	9,607	8,638	9,597	10,257	9,913	10,055	10,076	10,378	10,121	117,179
96 Carryover	OE													0
	C/E													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		10,576	8,814	9,147	9,607	8,638	9,597	10,257	9,913	10,055	10,076	10,378	10,121	117,179
1120-0	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
Tank Farm	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Upgrades	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
Subtotal (New B/A)		140	140	140	139	140	140	139	140	140	140	140	140	1,678
96 Carryover	GPP													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		140	140	140	139	140	140	139	140	140	140	140	140	1,678

* Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar

Attachment 4-4 Cost Baseline for Execution Year by Fund Type by Month (Page 1)

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TWRSR&A:MYP-TBL:09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1100-1														
T. F. Restor'n/	OE	575	475	500	550	475	525	550	525	525	525	525	523	6,273
Safe Ops.(W-314	LI	700	568	601	668	568	635	667	635	635	635	635	637	7,584
Subtotal (New B/A)		1,275	1,043	1,101	1,218	1,043	1,160	1,217	1,160	1,160	1,160	1,160	1,160	13,857
96 Carryover	OE													0
	LI													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		1,275	1,043	1,101	1,218	1,043	1,160	1,217	1,160	1,160	1,160	1,160	1,160	13,857
1120-1	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
SUPPT FACIL	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		0	0	0	0	0	0	0	0	0	0	0	0	0
1120-2	OE	176	170	168	52	49	50	37	20	0	0	0	0	722
T. F. Ventil'n	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Upgrades (W-030)	LI	591	500	498	145	22	20	18	18	0	0	0	988	2,800
Subtotal (New B/A)		767	670	666	197	71	70	55	38	0	0	0	988	3,522
96 Carryover	OE													0
	LI													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		767	670	666	197	71	70	55	38	0	0	0	988	3,522
1120-4	OE	170	140	148	162	140	155	162	155	155	197	197	197	1,978
Cross Site	LI	2,739	2,261	2,380	2,448	2,112	2,334	2,447	2,284	2,212	624	617	537	22,995
Trsf. System (W-058)														
Subtotal (New B/A)		2,909	2,401	2,528	2,610	2,252	2,489	2,609	2,439	2,367	821	814	734	24,973
96 Carryover	OE													0
	LI													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		2,909	2,401	2,528	2,610	2,252	2,489	2,609	2,439	2,367	821	814	734	24,973

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar**

Attachment 4-4 Cost Baseline for Execution Year by Fund Type by Month (Page 2)

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TWRSR&A:MYP-TBL 09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1120-7	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
Aging Waste	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Trsf Lines (W-02I	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		0	0	0	0	0	0	0	0	0	0	0	0	0
96 Carryover	LI													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		0	0	0	0	0	0	0	0	0	0	0	0	0
1280	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
New Tanks (W-236)	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		0	0	0	0	0	0	0	0	0	0	0	0	0
96 Carryover	LI													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		0	0	0	0	0	0	0	0	0	0	0	0	0
1100/1120	OE	11,234	9,331	9,696	10,103	9,035	10,059	10,739	10,345	10,468	10,530	10,833	10,573	122,946
Oper'ns &	C/E	263	268	267	268	267	268	267	268	267	268	267	268	3,206
Maintenance	LI	4,030	3,329	3,479	3,261	2,702	2,989	3,132	2,937	2,847	1,259	1,252	2,162	33,379
(Incl. Upgr's)	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
Subtotal (New B/A)		15,667	13,068	13,582	13,771	12,144	13,456	14,277	13,690	13,722	12,197	12,492	13,143	161,209
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		15,667	13,068	13,582	13,771	12,144	13,456	14,277	13,690	13,722	12,197	12,492	13,143	161,209 *

*Excludes $445K of RL Line Item Reserve

* Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar

Attachment 4-4 Cost Baseline for Execution Year by Fund Type by Month (Page 3)

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TWRSR&A:MYP-TBL 09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1110-0														
Waste Tank	OE	3,375	2,284	2,412	2,639	2,311	2,590	2,653	2,482	2,310	2,282	2,034	1,921	29,293
Safety	C/E	1,440	3,461	451	655	552	618	541	491	462	411	421	361	9,864
Subtotal (New B/A)		4,815	5,745	2,863	3,294	2,863	3,208	3,194	2,973	2,772	2,693	2,455	2,282	39,157
96 Carryover	OE													0
	C/E													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		4,815	5,745	2,863	3,294	2,863	3,208	3,194	2,973	2,772	2,693	2,455	2,282	39,157
1130-0	OE	5,449	4,802	5,407	6,084	5,350	5,852	6,088	5,629	5,004	4,255	3,910	3,438	61,268
Waste Charact'zation	C/E	159	131	105	4	4	4	4	4	4	4	4	5	432
Subtotal (New B/A)		5,608	4,933	5,512	6,088	5,354	5,856	6,092	5,633	5,008	4,259	3,914	3,443	61,700
96 Carryover	OE													0
	C/E													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		5,608	4,933	5,512	6,088	5,354	5,856	6,092	5,633	5,008	4,259	3,914	3,443	61,700
						0								
STORAGE	OE	20,058	16,417	17,515	18,826	16,696	18,501	19,480	18,456	17,782	17,067	16,777	15,932	213,507
SUMMARY	C/E	1,862	3,860	823	927	823	890	812	763	733	683	692	634	13,502
	LI	4,030	3,329	3,479	3,261	2,702	2,989	3,132	2,937	2,847	1,259	1,252	2,162	33,379
	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
Subtotal (New B/A)		26,090	23,746	21,957	23,153	20,361	22,520	23,563	22,296	21,502	19,149	18,861	18,868	262,066
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
	OE	20,058	16,417	17,515	18,826	16,696	18,501	19,480	18,456	17,782	17,067	16,777	15,932	213,507
	C/E	1,862	3,860	823	927	823	890	812	763	733	683	692	634	13,502
	LI	4,030	3,329	3,479	3,261	2,702	2,989	3,132	2,937	2,847	1,259	1,252	2,162	33,379
	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
Total B/A		26,090	23,746	21,957	23,153	20,361	22,520	23,563	22,296	21,502	19,149	18,861	18,868	262,066

* Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar

Attachment 4-4 Cost Baseline for Execution Year by Fund Type by Month (Page 4)

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP-TBL:09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1210-0	OE	1,327	1,060	1,056	1,192	1,116	1,159	1,159	1,154	1,069	709	684	650	12,335
Waste	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Retrieval	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**1,327**	**1,060**	**1,056**	**1,192**	**1,116**	**1,159**	**1,159**	**1,154**	**1,069**	**709**	**684**	**650**	**12,335**
96 Carryover	OE													**0**
	C/E													**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**1,327**	**1,060**	**1,056**	**1,192**	**1,116**	**1,159**	**1,159**	**1,154**	**1,069**	**709**	**684**	**650**	**12,335**
1210-2														
101-AZ Retr'vl	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
System	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
(W-151)	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
96 Carryover	OE													**0**
	C/E													**0**
	LI													**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1210-3														
Initial Tank	OE	82	79	82	82	74	82	79	82	79	82	82	77	962
Retr'vl System	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
(W-211)	LI	448	378	391	1,142	1,076	1,191	1,168	1,203	1,165	1,196	1,195	3,947	14,500
Subtotal (New B/A)		**530**	**457**	**473**	**1,224**	**1,150**	**1,273**	**1,247**	**1,285**	**1,244**	**1,278**	**1,277**	**4,024**	**15,462**
96 Carryover	OE													**0**
	LI													**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**530**	**457**	**473**	**1,224**	**1,150**	**1,273**	**1,247**	**1,285**	**1,244**	**1,278**	**1,277**	**4,024**	**15,462**
1210-4														
106-C Sluic'g	OE	66	24	22	0	0	0	0	0	0	0	0	0	112
(W-320)	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**66**	**24**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**112**
96 Carryover	OE													**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**66**	**24**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**112**

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar**

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP-TBL:09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1210 SUMMARY														
WASTE	OE	1,475	1,163	1,160	1,274	1,190	1,241	1,238	1,236	1,148	791	766	727	13,409
RETRIEVAL	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	448	378	391	1,142	1,076	1,191	1,168	1,203	1,165	1,196	1,195	3,947	14,500
Subtotal (New B/A)		1,923	1,541	1,551	2,416	2,266	2,432	2,406	2,439	2,313	1,987	1,961	4,674	27,909
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
	OE	1,475	1,163	1,160	1,274	1,190	1,241	1,238	1,236	1,148	791	766	727	13,409
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	448	378	391	1,142	1,076	1,191	1,168	1,203	1,165	1,196	1,195	3,947	14,500
Total B/A		1,923	1,541	1,551	2,416	2,266	2,432	2,406	2,439	2,313	1,987	1,961	4,674	27,909
1250-0	OE	459	404	432	589	566	605	722	800	771	661	649	599	7,257
Storage &	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Disposal	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
(95 - 1230)														
Subtotal (New B/A)		459	404	432	589	566	605	722	800	771	661	649	599	7,257
96 Carryover	OE													0
	C/E													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		459	404	432	589	566	605	722	800	771	661	649	599	7,257
1230-0	OE	878	806	813	520	473	582	480	459	531	505	639	538	7,224
Low Level	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Disp'l ('95 1220/IPM)														
Subtotal (New B/A)		878	806	813	520	473	582	480	459	531	505	639	538	7,224
96 Carryover	OE													0
	C/E													0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		878	806	813	520	473	582	480	459	531	505	639	538	7,224

* Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP-TBL 09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1230-1	OE	155	131	132	239	222	219	224	193	133	132	131	184	2,095
Privatiz'n	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Infrastructure														
Subtotal (New B/A)		**155**	**131**	**132**	**239**	**222**	**219**	**224**	**193**	**133**	**132**	**131**	**184**	**2,095**
96 Carryover	OE													**0**
Total B/A		**155**	**131**	**132**	**239**	**222**	**219**	**224**	**193**	**133**	**132**	**131**	**184**	**2,095**
						0								
PRI000	OE	242	242	241	242	242	241	242	242	241	242	242	241	2,900
Radiolog'l &	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Nucl. Oversite														
Subtotal (New B/A)		**242**	**242**	**241**	**242**	**242**	**241**	**242**	**242**	**241**	**242**	**242**	**241**	**2,900**
96 Carryover	OE													**0**
Total B/A		**242**	**242**	**241**	**242**	**242**	**241**	**242**	**242**	**241**	**242**	**242**	**241**	**2,900**
1230 SUMMARY	OE	1,275	1,179	1,186	1,001	937	1,042	946	894	905	879	1,012	963	12,219
Low Level	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Disp'l ('95 1220/IPM)														
Subtotal (New B/A)		**1,275**	**1,179**	**1,186**	**1,001**	**937**	**1,042**	**946**	**894**	**905**	**879**	**1,012**	**963**	**12,219**
96 Carryover	OE	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	C/E	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**1,275**	**1,179**	**1,186**	**1,001**	**937**	**1,042**	**946**	**894**	**905**	**879**	**1,012**	**963**	**12,219**
1240-0	OE	109	328	598	654	566	624	642	633	626	712	619	591	6,702
High Level	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Disposal	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**109**	**328**	**598**	**654**	**566**	**624**	**642**	**633**	**626**	**712**	**619**	**591**	**6,702**
96 Carryover	OE													**0**
	CE													**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**109**	**328**	**598**	**654**	**566**	**624**	**642**	**633**	**626**	**712**	**619**	**591**	**6,702**

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar**

Attachment 4-4 Cost Baseline for Execution Year by Fund Type by Month (Page 7)

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP-TBL 09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1240-1	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
H.W.V.P.	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
96 Carryover	LI													**0**
Subtotal 96 Carryover		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1270-0	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
M.P.S.C.														
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
96 Carryover	OE													**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1280-2	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
I.P.M.														
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
96 Carryover	OE													**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1290	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
Privatiz'n	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
96 Carryover	OE	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total B/A		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar**

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP-TBL·09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
DISPOSAL SUMMARY														
	OE	3,318	3,074	3,376	3,516	3,259	3,512	3,548	3,563	3,450	3,043	3,046	2,880	39,587
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	448	378	391	1,142	1,076	1,191	1,168	1,203	1,165	1,196	1,195	3,947	14,500
Subtotal (New B/A)		3,766	3,452	3,767	4,660	4,335	4,703	4,716	4,766	4,615	4,239	4,241	6,827	54,087
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		3,766	3,452	3,767	4,660	4,335	4,703	4,716	4,766	4,615	4,239	4,241	6,827	54,087
TWRS RESERVE & ESCALATION	OE	0	0	0	0	0	0	0	0	0	0	0	9,216	9,216
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESCAL'N													
Subtotal (New B/A)		0	0	0	0	0	0	0	0	0	0	0	9,216	9,216
96 Carryover	OE													0
Total B/A		0	0	0	0	0	0	0	0	0	0	0	9,216	9,216

Attachment 4-4 Cost Baseline for Execution Year by Fund Type by Month (Page 9)

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP–TBL 09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TOTAL EM–30 TWRS														
	OE	26,271	21,891	23,318	25,076	22,326	24,637	25,465	24,323	23,505	22,385	22,026	30,182	291,405
	C/E	1,862	3,860	823	927	823	890	812	763	733	683	692	634	13,502
	LI	4,478	3,707	3,870	4,403	3,778	4,180	4,300	4,140	4,012	2,455	2,447	6,109	47,879
	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
	ESCAL'N	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		32,751	29,598	28,151	30,545	27,067	29,847	30,716	29,366	28,390	25,663	25,305	37,065	354,464
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
	OE	26,271	21,891	23,318	25,076	22,326	24,637	25,465	24,323	23,505	22,385	22,026	30,182	291,405
	C/E	1,862	3,860	823	927	823	890	812	763	733	683	692	634	13,502
	LI	4,478	3,707	3,870	4,403	3,778	4,180	4,300	4,140	4,012	2,455	2,447	6,109	47,879
	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
	ESCAL'N	0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A	TWRS	32,751	29,598	28,151	30,545	27,067	29,847	30,716	29,366	28,390	25,663	25,305	37,065	354,464

* Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar

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(DOLLARS IN THOUSANDS)

TWRSR&A:MYP-TBL 09/20/96

TANK WASTE REMEDIATION SYSTEM
FY 1997 MONTHLY COST BASELINE FOR EXECUTION YEAR *

ADS/ DESCRIPTION	F/T	FY 1997 MONTHLY TIME PHASED OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
RL06WT51														
HTI Support	OE	697	537	501	616	753	756	759	732	571	396	355	327	7,000
(EM-50)														
Subtotal (New B/A)		697	537	501	616	753	756	759	732	571	396	355	327	7,000
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
Total B/A		697	537	501	616	753	756	759	732	571	396	355	327	7,000
TWRS SUMMARY														
(EM30 / EM50)	OE	26,968	22,428	23,819	25,692	23,079	25,393	26,224	25,055	24,076	22,781	22,381	30,509	298,405
	C/E	1,862	3,860	823	927	823	890	812	763	733	683	692	634	13,502
	LI	4,478	3,707	3,870	4,403	3,778	4,180	4,300	4,140	4,012	2,455	2,447	6,109	47,879
	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
	ESCAL'N	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (New B/A)		33,448	30,135	28,652	31,161	27,820	30,603	31,475	30,098	28,961	26,059	25,660	37,392	361,464
96 Carryover	OE	0	0	0	0	0	0	0	0	0	0	0	0	0
	C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
	LI	0	0	0	0	0	0	0	0	0	0	0	0	0
	GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal 96 Carryover		0	0	0	0	0	0	0	0	0	0	0	0	0
	OE	26,968	22,428	23,819	25,692	23,079	25,393	26,224	25,055	24,076	22,781	22,381	30,509	298,405
	C/E	1,862	3,860	823	927	823	890	812	763	733	683	692	634	13,502
	LI	4,478	3,707	3,870	4,403	3,778	4,180	4,300	4,140	4,012	2,455	2,447	6,109	47,879
	GPP	140	140	140	139	140	140	139	140	140	140	140	140	1,678
	ESCAL'N	0	0	0	0	0	0	0	0	0	0	0	0	0
• Total B/A	TWRS	33,448	30,135	28,652	31,161	27,820	30,603	31,475	30,098	28,961	26,059	25,660	37,392	361,464 *

*Excludes $445K of RL Line Item Reserve

* Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar

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ATTACHMENT 4-5

COST BASELINE FOR EXECUTION YEAR BY COST ELEMENT BY MONTH

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TANK WASTE REMEDIATION SYSTEM

COST BASELINE FOR EXECUTION YEAR (FY 1997)

BY PROGRAM BY COST ELEMENT BY MONTH (ALL FUND TYPES)*

(DOLLARS IN THOUSANDS) 35,328 TWRSR&A: MYP_PRICE.WK3

WBS/ADS TWRS PROJECT	C/E	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TOTAL TWRS**														
	0 Salaries	16,982	14,694	14,670	16,343	14,430	16,053	17,083	16,143	15,411	14,193	13,594	12,935	182,531
	1 Material	2,232	3,203	1,236	1,258	1,160	1,254	1,291	1,238	1,213	1,207	1,244	1,212	17,748
	2 Purch Svcs	8,879	7,501	7,560	8,348	7,572	8,121	7,838	7,654	7,232	5,514	5,418	14,886	96,523
	3 Chgs/Ot Contr	1,969	1,806	1,999	2,097	1,842	2,128	2,084	2,033	2,079	1,966	2,095	1,870	23,968
	4 Int'l Svcs	1,260	1,063	1,097	1,181	1,063	1,199	1,329	1,275	1,276	1,259	1,238	1,231	14,471
	5 Int'l Chgs	1,120	1,034	1,219	1,057	1,008	1,026	994	947	951	1,122	1,275	4,382	16,135
	6 BCS Rich	123	97	102	114	99	109	115	105	106	106	104	108	1,288
	7 OH & Adders	883	737	769	763	646	713	741	703	693	692	692	768	8,800
	8 Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – T.W.R.S.		33,448	30,135	28,652	31,161	27,820	30,603	31,475	30,098	28,961	26,059	25,660	37,392	361,464 [1]

[1]Includes $445K of RL Line Item Reserve in September (Cost Element 2)
Splitout of adders for C/E 7 is not available in P3. All adders are incorporated in the other C/E's.

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ATTACHMENT 4-6

BASIS OF ESTIMATE

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Bases of Estimate

The bases of estimate for the TWRS MYWP are maintained in the TWRS ABC Life-Cycle Cost Estimate database. These estimates were first established by interviews and fast diagram methodology and are maintained and modified as work scope and actual experience dictate.

The cost estimate database has been updated to incorporate revised MYWP planning. The revised estimate database will be utilized to produce revised estimate documents by September 15, 1996.

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ATTACHMENT 4-7

AVERAGE FTE PROJECTIONS BY COCS CATEGORIES

ATTACHMENT 4-7
Average FTE Projections by COCS Categories
Program WBS/Title: 1.1 Tank Waste Remediation System

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
C000	**Crafts**	104.9	101.4	89.5	54.8	54.4	65.6	32.7	31.6	29.3	44.8
C010	Carpenters	2.4	2.6								
C020	Electricians	37.4	30.5								
C030	Heating Air-Conditioning and Refrig Mechanics (HVAC)	0.0	0.0								
C040	Machinists	12.9	16.8								
C050	Masons	0.0	0.0								
C060	Millwrights	5.8	11.1								
C070	Painters	6.3	5.3								
C080	Plumbers and Pipefitters	24.5	21.9								
C090	Structural and Metal Workers	2.1	2.2								
C100	Vehicle and Mobile Equipment Mechanics	0.0	0.0								
C110	Welders	2.1	1.8								
C120	Other Crafts	11.4	9.2								
E000	**Engineers**	580.8	513.2	452.8	277.4	275.3	331.9	165.7	159.7	148.0	226.9
E010	Chemical Engineers	128.8	124.1								
E020	Civil Engineers	7.0	7.7								
E040	Electrical Engineers	33.9	27.1								
E050	Environmental Engineers	41.7	30.6								
E060	Industrial Engineers	4.1	2.3								
E070	Mechanical Engineers	161.2	167.9								
E080	Nuclear Engineers	18.3	9.6								
E090	Petroleum/Mining Engineers	4.5	3.1								
E100	Plant Engineers	98.0	75.5								
E110	Quality Assurance/Control Engineers	31.7	24.6								
E120	Safety Engineers	9.0	7.2								
E130	Other Engineers	42.6	33.5								
E140	Construction Engineers	0.0	0.0								

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ATTACHMENT 4-7
Average FTE Projections by COCS Categories
Program WBS/Title: 1.1 Tank Waste Remediation System

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
G000	**General Admin, Secretarial & Clerical Support**	105.3	98.3	86.7	53.1	52.7	63.6	31.7	30.6	28.3	43.5
G010	Administrative Assistants	6.8	5.9								
G020	Office Clerks (General)	35.7	33.7								
G030	Office Clerks (Specialized)	5.1	4.2								
G035	Material Coordinator	8.1	8.2								
G040	Secretaries	48.2	45.4								
G050	Typist and Word Processors	1.3	0.8								
G060	Other General Admin, Secretarial and Clerical Support	0.1	0.1								
L000	**Laborers and General Service Workers**	3.2	3.2	2.8	1.7	1.7	2.1	1	1	0.9	1.4
L010	Firefighters	0.0	0.0								
L020	Food Service Workers	0.0	0.0								
L030	Janitors and Cleaners	0.0	0.0								
L040	Laundry Workers	0.0	0.0								
L050	Handlers, Helpers and Laborers (General)	0.0	0.0								
L060	Handlers, Helpers and Laborers (Specialized)	0.0	0.0								
L070	Light Vehicle Drivers	3.2	3.2								
L080	Security Guards	0.0	0.0								
L090	Other Laborers and General Services Workers	0.0	0.0								
M000	**Gen Mgrs, Exec, 1st Line Suprv'sr & Prog/Proj Mgrs**	160.4	140.1	123.6	75.7	75.2	90.6	45.2	43.6	40.4	62
M010	First Line Supervisors	40.2	35.7								
M020	General Managers and Executives	98.6	83.4								
M030	Project and Program Managers	11.6	10.4								
M040	Other Managers	10.0	10.6								

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ATTACHMENT 4-7
Average FTE Projections by COCS Categories
Program WBS/Title: 1.1 Tank Waste Remediation System

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
P000	**Professional Administrative & Related Occupations**	225.3	197.4	174.1	106.7	105.8	127.6	63.7	61.4	56.9	87.3
P010	Accountants and Auditors	49.1	43.3								
P020	Architects	0.3	0.4								
P030	Buyers, Procurement and Contracting Specialists	1.1	0.3								
P040	Communications Specialists	0.0	0.0								
P050	Compliance Inspectors	4.8	5.3								
P060	Computer Systems Analysts	15.6	12.2								
P070	Cost Estimators and Planners and Schedulers	73.0	62.8								
P080	Health Physicists	13.1	11.3								
P090	Industrial Hygienists	3.6	3.4								
P100	Lawyers	0.0	0.0								
P110	Personnel and Labor Relations Specialists	0.0	0.0								
P120	Physicians	0.0	0.0								
P130	Physician Assist, Nurses & Oth Medical Supt Occup'tns	0.0	0.0								
P140	Safeguards and Other Security Specialists	1.2	1.3								
P150	Trainers	27.1	25.2								
P160	Technical Writers, and Editors	9.0	9.0								
P170	Other Administrative & Professional Other Occupations	27.4	22.9								
R000	**Operators**	262.6	253.9	223.9	137.2	136.1	164.1	81.9	79	73.2	112.2
R010	Chemical System Operators	0.0	0.0								
R020	Drillers	0.0	0.0								
R030	Material Moving Equipment Operators	0.5	31.1								
R040	Nuclear Plant Operators	1.7	0.0								
R050	Nuclear Waste Process Operators	242.3	208.7								
R060	Production Systems Operators	0.0	0.0								
R070	Utilities Operators	18.1	14.1								
R080	Other Operators	0.0	0.0								

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ATTACHMENT 4-7
Average FTE Projections by COCS Categories
Program WBS/Title: 1.1 Tank Waste Remediation System

COCS	Title	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
S000	**Scientists**	72.8	63.2	55.8	34.2	33.9	40.9	20.4	19.7	18.2	27.9
S010	Chemists	42.7	37.8								
S020	Environmental Scientists	11.3	11.0								
S030	Geologists	2.6	0.5								
S040	Life Scientists	0.0	0.0								
S050	Materials Scientists	0.0	0.3								
S060	Mathematicians	3.3	1.9								
S070	Physicists	2.9	2.6								
S080	Social Scientists	0.0	0.0								
S090	Other Scientists	4.3	3.9								
S100	Computer Scientists	5.7	5.2								
T000	**Technicians**	262.2	261.8	230.9	141.5	140.4	169.3	84.5	81.5	75.5	115.7
T010	Computer Operator/Coders	1.3	1.3								
T020	Drafters	6.9	4.4								
T030	Engineering Technicians	11.2	6.8								
T040	Environmental Sciences Technicians	0.0	0.0								
T050	Health Physics Technicians	146.5	143.6								
T060	Industrial Safety and Health Technicians	11.1	11.4								
T070	Instrument and Control Technicians	30.4	25.9								
T080	Laboratory Technicians	50.0	63.5								
T090	Media Technicians	0.0	0.0								
T100	Survey and Mapping	0.0	0.0								
T110	Other Technicians	0.0	1.0								
T113	Technicians Quality Assurance	4.8	3.9								
Total		1777.5	1632.5	1440.1	882.3	875.5	1055.7	526.8	508.1	470.7	721.7

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ATTACHMENT 4-8

SUBCONTRACTOR EXHIBIT

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ATTACHMENT 4-8
Subcontractor Exhibit
Dollars In Thousands

Project Hanford Breakdown Structure: 1.1
Project Hanford Title: Tank Waste Remediation System

		FY 1997			FY 1998		
		$	FTEs		$	FTEs	
Expense							
	Service Agreement	$2,665	0		$2,147	0	
	Technical Service	$29,982	0		$24,151	0	
	Clerical	$666	0		$537	0	
Construction		$0	0		$0	0	
Total		$33,313	0	Note 1	$26,835	0	Note 1

Note 1 - The FTE's are to be determined by a FTE per $K ratio which will be defined by DOE-RL

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ATTACHMENT 4-9

WORK SCOPE MAPPING

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PROJECT WORK SCOPE MAPPING

- FY 1996 to FY 1997 -

Work Scope Title	Identifiers		Comment
	FY 1996	FY 1997	
Temperature Trees for Flammable Gas SSTs	1.1.1.2.2.1		Deleted per Funding Constraints
TWRS Oversight/Sub-TAP	1.1.1.2.2.1		Deleted per Funding Constraints
C-103 Organic Skimming	1.1.1.2.2.1		Deleted per Funding Constraints
Operate SMMS with 2nd and 3rd Arms	1.1.1.2.2.1		Deleted per Funding Constraints
Organic Sensing System	1.1.1.2.2.1		Deleted per Funding Constraints
Lightning Protection		1.1.1.2.2.3	Addition
Decon System for Moisture Monitoring	1.1.1.2.2.3		Deleted per Funding Constraints
DNFSB 93-5, Implementation		1.1.1.2.2.3	Addition

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PROJECT WORK SCOPE MAPPING

WASTE RETRIEVAL PROGRAM WORK SCOPE MAPPING

- FY 1996 to FY 1997 -

Work Scope Title	Identifiers		Comments
	FY 1996	FY 1997	
Project Administration: 1.1.1.3.1.1.1; 1.1.1.3.1.2.1; 1.1.1.3.1.3.1	1.1.1.3.1.1.1 1.1.1.3.1.2.1 1.1.1.3.1.3.1	1.1.1.3.1.1.1 1.1.1.3.1.2.1 1.1.1.3.1.3.1	• Administrative/Management Costs where re-structured for the Waste Retrieval Program and pro-rated (equally) between the three projects for FY97-99. • The Waste Retrieval Program Administrative costs for FY00 through FY24 are captured in the Closure Project Administrative WBS 1.1.1.3.1.3.1. (Includes Disposal Program allocations.) • Tank Closure Administrative cost where added to WBS 1.1.1.3.1.3.1 for FY25-34. • Resource requirements are reduced in FY97-99 to meet target funding levels. Resource requirements for FY00 and beyond are based on projected needs.
System Definition 1.1.1.3.1.1.2; 1.1.1.3.1.2.2; 1.1.1.3.1.3.2	N/A 1.1.1.3.1.1.2 1.1.1.3.1.2.2 1.1.1.3.1.3.2	1.1.1.3.1.1.2 1.1.1.3.1.2.2 1.1.1.3.1.3.2	• ISSTRS Performance Reporting and planning combined with Project Administration; workscope definition restructured to account for FY96 completed work. • Reduced travel and incidental costs in the EM-30/50 Interface activity. • LLW Feed Staging Plan work scope is transferred to Waste Retrieval (DST System Definition/DST Technical Baseline activity) starting in FY 2002. • SST Retrieval Sequence Document transferred from Closure Administration (1.1.1.3.1.3.1) to SST System Definition. • Added SSSTRS planning implemented in FY99-00 and for MUSTs in FY03-05; missing in FY96 planning. • 242-A Life Extension Study is transferred from ADS 1230 to DST System Definition. • Closure System Definition modified by HTI in FY97-00.

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PROJECT WORK SCOPE MAPPING

WASTE RETRIEVAL PROGRAM WORK SCOPE MAPPING

- FY 1996 to FY 1997 -

Work Scope Title	Identifiers		Comments
SST Future Projects 1.1.1.3.1.1.4	N/A 1.1.1.3.1.1.2	1.1.1.3.1.1.4	• ISSTRS and SSSTRS scope defined and added in accordance with the FM-20 Review. • Hanford Tanks Initiative (HTI) added; replaces ACTR and 106-C Heel Clean-out Project definition and project; includes element of Tank Closure System Definition (establishing tank closure requirements). Scope planned includes EM-50 resource commitment.
SST Operations 1.1.1.3.1.1.5	1.1.1.3.1,1.5	1.1.1.3.1.1.5	Corrected planning baseline to comply with FM-20 Review.
Staging Tank Modifications (AP102 & AP 104)	ADS 1230 1.1.1.3.2.2.7.7	ADS 1210-3; 1.1.1.3.1.2.4	Modify W-211 scope, no change to W-211 cost estimate to incorporate these requirements.
HLW Feed Line to Private Contractor	ADS 1240 1.1.1.3.3.2.4.7	ADS 1210-3; 1.1.1.3.1.2.4	Modify W-211 scope, no change to W-211 cost estimate to incorporate these requirements.
Secondary Waste Return System Project	ADS 1230 1.1.1.3.2.2.7.7	ADS 1210-3; 1.1.1.3.1.2.4	Modify W-211 scope, no change to W-211 cost estimate to incorporate these requirements.
HLW Pretreatment Facility TPA Milestones; M-50-04 series.	ADS 1240	1.1.1.3.1.2.2	Scope transferred without funding. Milestones shown on schedule without activities. No planning bases.
Interface Control Documentation (HLW)	ADS 1240 1.1.1.3.3.3.4.2.	1.1.1.3.1.2.2	Identified and added to the DST Technical Baseline workscope.
System Engineering	1.1.1.3.1.3.1	1.1.1.3.1.3.2	Waste Retrieval Program System Engineering transferred from Closure Administration to Closure System Definition. Scope reduced to SRR Action Plan issue resolution and tank selection and technology selection decision plans in FY97. Scope modified to include Waste Retrieval Program Risk/Decision Baseline determinations in FY98 & FY99.

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PROJECT WORK SCOPE MAPPING

LOW-LEVEL WASTE PROJECT

- FY 1996 FY 1997 -

Work Scope Title	Identifiers		Comments
	FY 1996	FY 1997	
LLW Pretreatment Subproject 1.1.1.3.2.1	L1WXXXX	L2WXXXX	• Work scope for LLW Pretreatment & LLW Immobilization Subprojects is combined under LLW Immobilization in FY 1997 and beyond, except for Support Systems. • Work scope associated with Support Systems [formerly "Infrastructure"] is collected in a third subproject, 1.1.1.3.2.3 Support Systems. This includes the former Cost Accounts; X.2.1.7 Support Systems Acquisition, X.2.1.9 Support Systems Operations and X.2.1.10 Support Systems D&D/Closure.
Project Management & Administration 1.1.1.3.2.1.1	L1W01010-L1W01110	L2W11110-L2W14150	All work scope ends in FY 2004 after initiation of Phase 2 RFP. HLW Project will provide support thereafter.
System Definition 1.1.1.3.2.1.2	L1W02610-L1W02905	L2W2110-L2W27110	• DQO work scope it transferred to IST starting in FY 1997. • Updating TWRS Process Technical Baseline is transferred to HLW Project starting in FY 1999. • LLW Feed Staging Plan work scope is transferred to Waste Retrieval starting in FY 2002. • All work scope ends in FY 2004 after initiation of Phase 2 RFP. HLW Project will provide support thereafter.
Risk Reduction/ Contingency Def. 1.1.1.3.2.1.7	L1W120-L1W12300	H2910	• LLW risk reduction activities have been consolidated under the HLW Project, WBS 1.1.1.3.3.2.9. • WBS is changed from X.2.2.12 to X.2.2.7
LLW Immobilization Subproject 1.1.1.3.2.2	L2WXXXX	L2WXXX	• Work scope for LLW Pretreatment & LLW Immobilization Subprojects is combined under LLW Immobilization in FY 1997 and beyond. • Work scope associated with Support Systems [formerly "Infrastructure"] is collected in a third subproject, 1.1.1.3.2.3 Support Systems. This includes the former Cost Accounts; X.2.2.7 Support Systems Acquisition, X.2.2.9 Support Systems Operations and X.2.2.10 Support Systems D&D/Closure.

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Project Management & Administration 1.1.1.3.2.2.1	L2W01010-L2W01110	L2W11110-L2W14150	• Resource requirements are reduced in FY 1997-1999 due to reduced level of total LLW Project M&I work scope. • All work scope ends in FY 2004 after initiation of Phase 2 RFP. HLW Project will provide support thereafter.
System Definition 1.1.1.3.2.2.2	L2W02110-L2W02730	L2W2110-L2W27110	• Work scope for providing vendor samples for Phase 1A is added in FY 1996 and will continue into FY 1997. • Work scope for providing vendor samples for Phase 1B is added in FY 1998-1999. • 242-A Life Extension Study is transferred to Waste Retrieval Project. • Updating system engineering documents [e.g., SRR Action Plan, BSD, F&R, TRS, etc.] is transferred to IST. • Technical support to privatization Integrated Product Teams (IPTs) is added in FY 1997-2004.
LLW Facility Acquisition Phase 1 1.1.1.3.2.5	L2D03005-L2D03024	L2W51110-L2W55160	• Resources to support an Integration Support Team (IST) is added for FY 1997 through completion of Phase 1. • Resources to support Nuclear Regulatory Safety Oversight is added for FY 1997 through completion of Phase 1.
LLW Phase 1 Facilities D&D/Closure 1.1.1.3.2.2.6	N/A	L2W61110-L2W62150	• Resources to support Phase 1 LLW Facilities D&D/Closure is added in FY 2012-2015. • Resources to support Phase 1 HLW Facilities D&D/Closure is added in FY 2012-2015.
Risk Reduction/ Contingency Def. 1.1.1.3.2.2.7	L2W12100-L2W12401	H2910	• LLW risk reduction activies have been consolidated under the HLW Project, WBS 1.1.1.3.3.2.9 • WBS is changed from X.2.2.12 to X.2.2.7.
Support Systems Subproject 1.1.1.3.2.3	L2W07100-L2W07716	L3W11105-L3W52105	• All work scope associated with LLW and HLW Support Systems [formerly "Infrastructure"] for both Phase 1 and Phase 2 Vendor operations is included in this subproject. This includes the design, construction, startup, operation and D&D/closure of Support Systems.

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PROJECT WORK SCOPE MAPPING

HIGH-LEVEL WASTE PROJECT

- FY 1996 to FY 1997 MYWP

Work Scope Title	Identifiers		Comment
	FY 1996	FY 1997	
HLW Pretreatment Project Administration	1.1.1.3.3.1.1	1.1.1.3.2.2.1 (FY97) 1.1.1.3.3.1.1 (outyears)	•FY 97 scope was transferred to the LLW Project and the IST •Beginning in FY 2005, scope includes administration of the LLW Project
HLW Pretreatment System Definition	1.1.1.3.3.1.2	1.1.1.3.3.1.2	•FY 97 scope transferred to the IST includes System Engineering and DQO update •Responsibility for the TWRS Flowsheet resides with the LLW Project in FY 97-98 and HLW thereafter
HLW Pretreatment Facilities Acquisition	1.1.1.3.3.1.3	1.1.1.3.1 (Phase 1) 1.1.1.3.3.2.3 (Phase 2)	•Phase 1 Pretreatment facilities/equipment acquisition was transferred to the Retrieval Project •Phase 2 Pretreatment facilities were consolidated with the rest of the Phase 2 privatization effort
HLW Pretreatment Support Systems Acquisition	1.1.1.3.3.1.4	1.1.1.3.2.3	•All infrastructure required for HLW processing was consolidated under LLW infrastructure
HLW Pretreatment Facilities Operation	1.1.1.3.3.1.5	1.1.1.3.1 (Phase 1) 1.1.1.3.3.2.3 (Phase 2)	•Phase 1 pretreatment operations were transferred to the Retrieval Project •Phase 2 operations were consolidated with the rest of the privatization effort
HLW Pretreatment Support Systems Operations	1.1.1.3.3.1.6	1.1.1.3.2.3	•All infrastructure operations were consolidated under LLW infrastructure
HLW Pretreatment Support Systems D&D/Closure	1.1.1.3.3.1.7	1.1.1.3.2.3	•All scope was consolidated under LLW infrastructure
HLW Pretreatment Facility D&D/Closure	1.1.1.3.3.1.8	1.1.1.3.2.2.6 (Phase 1) 1.1.1.3.3.2.3 (Phase 2)	•Phase 1 scope was transferred to the LLW Project •Phase 2 scope was consolidated with the rest of the privatization effort
HLW Pretreatment Contingency System Definition	1.1.1.3.3.1.9	1.1.1.3.3.2.9	•All scope was consolidated under IHLW Contingency System Definition

IHLW Project Administration	1.1.1.3.3.2.1	1.1.1.3.2.2.1 (FY97 1.1.1.3.3.1.1 (outyears)	•All FY 97 scope was transferred to the LLW Project and the IST •All outyear scope was transferred to HLW Pretreatment Project Administration
IHLW System Definition	1.1.1.3.3.2.2	1.1.1.3.3.2.2	•Most FY 97 scope was deleted, deferred or transferred to the IST
HLW Immobilization Facilities Acquisition	1.1.1.3.3.2.3	1.1.1.3.2.2.5 (Phase 1) 1.1.1.3.3.2.3 (Phase 2)	•All Phase 1 scope was transferred to the LLW Phase 1 Privatization effort. •Phase 2 scope was expanded to include all Phase 2 retrieval, operations, pretreatment, LLW and HLW immobilization, D&D, and IST activities. •Cost Account title was changed to "Waste Processing Facilities - Phase 2" to reflect the added scope
HLW Immobilization Support Systems Acquisition	1.1.1.3.3.2.4	1.1.1.3.2.3	•All scope was consolidated under LLW infrastructure
HLW Immobilization Facilities Operations	1.1.1.3.3.2.5	1.1.1.3.2.2.5 (Phase 1) 1.1.1.3.3.2.3 (Phase 2)	•All Phase 1 scope was transferred to the LLW Privatization effort •All Phase 2 scope was consolidated under Waste Processing Facilities Acquisition - Phase 2
HLW Immobilization Support Systems Operations	1.1.1.3.3.2.6	1.1.1.3.2.3	•All scope was consolidated under LLW Infrastructure
HLW Immobilization Support Systems D&D/Closure	1.1.1.3.3.2.7	1.1.1.3.2.3	•All scope was consolidated under LLW Infrastructure
HLW Immobilization Facility D&D/Closure	1.1.1.3.3.2.8	1.1.1.3.2.2.6 (Phase 1) 1.1.1.3.3.2.3 (Phase 2)	•All Phase 1 scope was transferred to the LLW Project •All Phase 2 scope was consolidated under the Phase 2 privatization effort
IHLW Contingency System Definition	1.1.1.3.3.2.9 1.1.1.3.4 1.1.1.3.2	1.1.1.3.3.2.9	•Scope was expanded to include $5.5M of HLW Pretreatment, LLW and Storage and Disposal risk reduction activities in support of privatization and the maintenance of the core competencies that would be needed should privatization be abandoned •All scope associated with an "alternate path" was deleted

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ATTACHMENT 4-10

MYWP TRANSITION CROSSWALK

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FY 1997 MYWP TRANSITION CROSSWALK

FY 1996 BASELINE SUMMARY REPORT

Schedule 1

($ in Millions)

Program:

	Baseline Analysis	1996	1997	1998	1999	TOTAL
(1)	Beginning Baseline - FY 1996 MYPP (9/26/95)	494.0	513.0	495.7	505.7	2,008.4
(2)	FY 1996 Reported Savings (Schedule 2A and 2B)					
	(2.1) Deleted Workscope	(26.4)	(9.2)	(13.5)		(49.1)
	(2.2) Efficiencies	(4.9)	0.5	0.0	0.0	(4.4)
(3)	FY 1996 Other C/R Activity (Schedule 2A and 2B)					
	(3.1) Workscope Deferrals	(6.9)	1.9	(2.4)	0.0	(7.3)
	(3.2) Workscope Transfers	(2.6)	2.9	3.1	0.0	3.4
	(3.3) Workscope Additions - Accelerated	2.3	2.5	1.4	0.0	6.2
	(3.4) Workscope Additions - New	39.7	6.0	2.7	23.2	71.6
(4)	Prior Year Carryover Workscope	7.0				7.0
(5)	FY 1996 MYPP Net of FY 1996 CR Actions	502.1	517.6	487.1	528.9	2,035.7
(6)	FY 1997 Baseline Planning Actions (Schedule 3)					
	6.1 Deleted Workscope	0.0	(77.5)	(75.7)	(97.3)	(250.5)
	6.2 Workscope Deferrals	0.0	(14.5)	0.1	(37.2)	(51.6)
	6.3 Workscope Additions - Accelerated	0.0	6.5	9.9	18.0	34.4
	6.4 Workscope Additions - New	0.0	92.0	318.3	297.3	707.6
	6.5 Workscope Transfers	0.0	(3.7)	(4.2)	(14.7)	(22.6)
	6.6 Rate Adjustments	0.0	19.1	17.9	16.6	53.6
	6.7 Privatization Scope Transfer	0.0	(185.0)	(427.0)	(401.0)	(1,013.0)
	6.8 Reserve	0.0	7.0	10.0	10.0	27.0
	Total 1997 Planning Actions	0.0	(156.1)	(150.7)	(208.3)	(515.1)
(7)	FY 1997 Approved MYWP Baseline	502.1	361.5	336.4	320.6	1,520.6

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FY 1997 MYWP TR/ `ITION CROSSWALK

Schedule 2A Appr. d Change Requests

($ in Millions)

Program:

FY 1996 Reported Savings

C/R NUMBER	DESCRIPTION	SAVINGS TYPE	1996	1997	1998	1999	TOTAL
	Program Management	Deletion	(6.3)	(1.9)	(2.2)		(10.4)
	Disposal	Deletion	(5.4)	(6.2)	(11.3)		(22.9)
	Operations and Maintenance	Deletion	(10.0)	(1.1)			(11.1)
	Safety	Deletion					0.0
	Characterization	Deletion	(4.7)				(4.7)
		Sub Total Deletions	(26.4)	(9.2)	(13.5)	0.0	(49.1)
	Program Management	Deferral	(0.3)	0.0	0.5		0.2
	Disposal	Deferral	(0.6)	0.8	0.0		0.2
	Operations and Maintenance	Deferral	(1.5)	4.0			2.5
	Safety	Deferral	0.0	(2.9)	(2.9)		(5.8)
	Characterization	Deferral	(4.5)				(4.5)
		Sub Total Deferrals	(6.9)	1.9	(2.4)	0.0	(7.3)
	Program Management	Transfer	0.5		0.2		0.7
	Disposal	Transfer	(0.1)				(0.1)
	Operations and Maintenance	Transfer	(0.8)				(0.8)
	Safety	Transfer	(4.3)	2.9	2.9		1.5
	Characterization	Transfer	2.1				2.1
		Sub Total Transfers	(2.6)	2.9	3.1	0.0	3.4
	Program Management	Addition-Accelerated					0.0
	Disposal	Addition-Accelerated	1.1	2.5	1.4		5.0
	Operations and Maintenance	Addition-Accelerated					0.0
	Safety	Addition-Accelerated					0.0
	Characterization	Addition-Accelerated	1.2				1.2
		Sub Total Accelerated	2.3	2.5	1.4	0.0	6.2
	Program Management	Addition-New	5.8	1.3			7.1
	Disposal	Addition-New	3.0	2.7	0.5	23.2	29.4
	Operations and Maintenance	Addition-New	16.8	1.9	2.2		20.9
	Safety	Addition-New			0.0		0.0
	Characterization	Addition-New	13.3	0.1	0.0		13.4
		Sub Total New	38.9	6.0	2.7	23.2	70.8
	Program Management	Efficiency	(0.0)				(0.0)
	Disposal	Efficiency	(0.7)	(0.1)	0.0		(0.8)
	Operations and Maintenance	Efficiency	(4.4)	0.6	(0.0)		(3.8)
	Safety	Efficiency					0.0
	Characterization	Efficiency	0.1	0.0			0.1
		Sub Total Efficiency	(5.0)	0.5	0.0	0.0	(4.5)

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FY 1997 MYWP TRANSITION CROSSWALK

Schedule 2B Pen[illegible]Change Requests

($ in Millions)

Program:

FY 1996 Reported Savings

C/R NUMBER	DESCRIPTION	SAVINGS TYPE	1996	1997	1998	1999	TOTAL
	Program Management	Deletion					0.0
	Disposal	Deletion					0.0
	Operations and Maintenance	Deletion					0.0
	Safety	Deletion					0.0
	Characterization	Deletion					0.0
		Sub Total Deletions	0.0	0.0	0.0	0.0	0.0
	Program Management	Deferral					0.0
	Disposal	Deferral					0.0
	Operations and Maintenance	Deferral					0.0
	Safety	Deferral					0.0
	Characterization	Deferral					0.0
		Sub Total Deferrals	0.0	0.0	0.0	0.0	0.0
	Program Management	Transfer					0.0
	Disposal	Transfer					0.0
	Operations and Maintenance	Transfer					0.0
	Safety	Transfer					0.0
	Characterization	Transfer					0.0
		Sub Total Transfers	0.0	0.0	0.0	0.0	0.0
	Program Management	Addition-Accelerated					0.0
	Disposal	Addition-Accelerated					0.0
	Operations and Maintenance	Addition-Accelerated					0.0
	Safety	Addition-Accelerated					0.0
	Characterization	Addition-Accelerated					0.0
		Sub Total Accelerated	0.0	0.0	0.0	0.0	0.0
	Program Management	Addition-New					0.0
	Disposal	Addition-New	0.8				0.8
	Operations and Maintenance	Addition-New					0.0
	Safety	Addition-New					0.0
	Characterization	Addition-New					0.0
		Sub Total New	0.8	0.0	0.0	0.0	0.8
	Program Management	Efficiency					0.0
	Disposal	Efficiency					0.0
	Operations and Maintenance	Efficiency					0.0
	Safety	Efficiency					0.0
	Characterization	Efficiency	0.1				0.1
		Sub Total Efficiency	0.1	0.0	0.0	0.0	0.1

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FY 1997 MYWP TRANSITION CROSSWALK

FY 1997 BASELINE PLANNING ACTIONS

WHC-SP-1101 REV. 2

Schedule 3

($ in Millions)

gram: Analytical Services

FY 1997 Baseline Planning Actions	1996	1997	1998	1999	TOTAL
(6.1) Deleted Workscope					
(1) Program Management		($9.4)	($13.7)	($12.3)	($35.4)
(2) Disposal		($13.6)	($8.8)	($16.4)	($38.8)
(3) Operations and Maintenance		($33.7)	($44.9)	($64.4)	($143.0)
(4) Safety		($18.3)	($7.5)	($0.1)	($25.9)
(5) Characterization					$0.0
(6) Planned efficiencies - Retrieval		($0.1)	($0.8)	($3.2)	($4.1)
(7) Planned efficiencies - Characterization		($2.4)		($0.9)	($3.3)
Total	$0.0	($77.5)	($75.7)	($97.3)	($250.5)
(6.2) Workscope Deferred					
(1) Program Management					$0.0
(2) Disposal		$1.5	$0.4	($11.5)	($9.6)
(3) Operations and Maintenance		($0.8)	($6.4)	($34.7)	($41.9)
(4) Safety		($2.7)	$2.7		$0.0
(5) Characterization		($12.5)	$3.4	$9.0	($0.1)
Total	$0.0	($14.5)	$0.1	($37.2)	($51.6)
(6.3) Workscope Additions - Accelerated					
(1) Program Management					$0.0
(2) Disposal		$5.8	$9.2	$15.7	$30.7
(3) Operations and Maintenance		$0.7	$0.7	$0.4	$1.8
(4) Safety					$0.0
(5) Characterization				$1.9	$1.9
Total	$0.0	$6.5	$9.9	$18.0	$34.4
(6.4) Workscope Additions - New					
(1) Program Management		$2.8	$2.9		$5.7
(2) Disposal		$67.4	$309.1	$284.2	$660.7
(3) Operations and Maintenance		$12.4			$12.4
(4) Safety		$8.6		$2.1	$10.7
(5) Characterization		$0.8	$6.3	$11.0	$18.1
Total	$0.0	$92.0	$318.3	$297.3	$707.6
(6.5) Workscope Transfers					
(1) Program Management					$0.0
(2) Disposal		($3.7)	($4.2)	($14.7)	($22.6)
(3) Operations and Maintenance					$0.0
(4) Safety					$0.0
(5) Characterization					$0.0
Total	$0.0	($3.7)	($4.2)	($14.7)	($22.6)

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5.0 PERFORMANCE MEASURES

Attachment 5-1 TWRS Performance Measures

ATTACHMENT 22.5-3

COST BASELINE FOR EXECUTION YEAR BY FUND TYPE BY MONTH

(DOLLARS IN THOUSANDS)

TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PRJ2.W 09/20/96

FY 1997 MYWP COST PROFILE BY MONTH *

WBS / TWRS PROJECT	ADS	FUND	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1.1.1.3.4.3 CS & SR Capsules	1250	EXP	16	11	12	15	8	9	8	7	10	9	9	13	127
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**16**	**11**	**12**	**15**	**8**	**9**	**8**	**7**	**10**	**9**	**9**	**13**	**127**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**16**	**11**	**12**	**15**	**8**	**9**	**8**	**7**	**10**	**9**	**9**	**13**	**127**

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE–RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

Attachment 22.5-3 Cost Baseline for Execution Year by Fund Type by Month (Page 1)

TANK WASTE REMEDIATION SYSTEM

COST BASELINE FOR EXECUTION YEAR (FY 1997)

BY PROGRAM BY COST ELEMENT BY MONTH (ALL FUND TYPES)*

(DOLLARS IN THOUSANDS) 35,328 TWRSR&A: MYP_PRCE.WK3

WBS/ADS TWRS PROJECT	C/E	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1.1.1.3.4.3														
CS & SR Capsules	0 Salaries	13	11	11	15	5	9	7	7	9	9	8	9	113
1250	1 Material	1				1							1	3
	2 Purch Svcs	1				1							1	3
	3 Chgs/Ot Contr													0
	4 Int'l Svcs												1	1
	5 Int'l Chgs													0
	6 BCS Rich	1		1		1		1		1		1	1	7
	7 OH & Adders													0
	8 Revenue													0
TOTAL – Cs & Sr Capsules		**16**	**11**	**12**	**15**	**8**	**9**	**8**	**7**	**10**	**9**	**9**	**13**	**127**

Splitout of adders for C/E 7 is not available in P3. All adders are incorporated in the other C/E's.
*Based upon P3 calendar month profile, NOT realized hours calendar.

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ATTACHMENT 5-1

TWRS PERFORMANCE MEASURES

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TANK WASTE REMEDIATION SYSTEM

OBJECTIVE	MEASURE	EXPECTATION (RL GUIDANCE)	MYWP PLANNING
TWR1 Resolve known tank safety issues.	TWR1.1 Close secretarial safety initiatives.	TWR1.1.1 Complete Secretarial Safety Initiatives by September 30, 1997 as referenced in the Secretarial Safety Initiatives, 1994.	A milestone for completion of all Secretarial Safety Issues is in the current MYWP submittal (T22-97-XXX). No MDS is included.
	TWR1.2 Resolve organic safety issues.	TWR1.2.1 Complete Supporting Technical document on the organic complexant and organic solvents safety issue by December 31, 1996.	Milestones for completing the expectation are T22-97-114 and T22-97-115.
		TWR1.2.2 Complete installation of thermocouples and continuously temperature monitor on organic tanks by September 30, 1997.	The existing milestone T22-97-127 is in the current MYWP and supports the Expectation date. However,this Expectation is a duplicate of one of the five safety issues above and will be deleted from the list of expectations.
	TWR1.3 Resolve flammable gas issue.	TWR1.3.1 Complete retained gas sampling in tanks: 101-AW, 103-AN, 104-AN, 105-AN, and 103-U, and provide recommendation for future deployments, by January 31, 1997.	Milestone for completing the expectation is T22-97-103. The milestone is in the current MYWP and supports the expectation. There is an on going discussion to substitute tank 101-A for tank 103-U.
		TWR1.3.2 Close and document the AN Farm Flammable Gas Unreviewed Safety Question by March 31, 1997.	The Milestone T22-97-147 is in the current MYWP but does not support the expectation date.
		TWR1.3.3 Complete and issue Safety Issue Resolution Strategy document by May 30, 1997.	The MYWP and the expectation agree. The milestone is T22-97-109.
		TWR1.3.4 Complete and issue report on gas generation and retention studies of single-shell tank waste by July 15, 1997.	Report on gas generation is milestone T22-97-106. The milestone date of 8/4/97 differs from the expectation. Report on retention studies is not included in this milestone.

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TANK WASTE REMEDIATION SYSTEM			
OBJECTIVE	**MEASURE**	**EXPECTATION (RL GUIDANCE)**	**MYWP PLANNING**
		TWR1.3.5 Complete installation and acceptance of 16 Standard Hydrogen Monitor Systems (SHMS) on flammable gas tanks by July 31, 1997.	17 additional tanks will have SHMSs installed in FY97 for a total of 45 tanks. This is documented by milestone T22-97-003. The milestone date of 9/30/97 differs from the expectation.
		TWR1.3.6 Close and document first Single-Shell Tank Farm Flammable Gas Unreviewed Safety Question by August 29, 1997.	Milestone T22-97-148 is in the current MYWP. Its content does not match the expectation and its date is one month later than the expectation.
		TWR1.3.7 Issue vapor space monitoring report for flammable gas tanks (SHMS, GCS data) by September 30, 1997.	The MYWP and expectation agree. The milestone is T22-97-107.
	TWR1.4 Resolve high heat tank safety issue.	TWR1.4.1 Remove sufficient high-heat sludge from Tank 106-C to reduce the heat load to less than 40,000 BTU/hour by April 1997.	Milestone not identified.
TWR2 Characterize tank waste.	TWR2.1 Characterize tank waste to support storage and retrieval.	TWR2.1.1 Meet the sampling and analysis schedule of high priority tanks in FY97 as published in the DNFSB Recommendation 93-5 Revised Implementation Plan of May 1996, Appendix G by September 30, 1997.	Milestone T24-97-139 is in the current MYWP and its date supports the expectation. There is an on going discussion on substituting tanks that are high priority but not necessarily in Appendix "G".
		TWR2.1.2 Issue 15 additional tank characterization reports by September 30, 1997.	The milestone for this expectation is T24-97-139. The quantity of TCRs has been increased to 19. The milestone date supports the expectation.
TWR3 Be responsive to regulatory document requirements.	TWR3.1 Meet regulatory reporting requirements of Tank Characterization	TWR3.1.1 Update and reissue the 23 Tank Characterization Reports published in FY93 and FY94 by May 31, 1997.	The MYWP and the expectation agree. The milestone is T24-97-180. The milestone date supports the expectation

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TANK WASTE REMEDIATION SYSTEM

OBJECTIVE	MEASURE	EXPECTATION (RL GUIDANCE)	MYWP PLANNING
		TWR3.1.2 Update and reissue the Data Quality Objectives (DQOs) document for Retrieval and Waste Compatibility by March 31, 1997.	This expectation will be split between operations and retrieval projects. New milestones will be introduced. The current MYWP schedules do not support this split.
TWR4 Operate tank farms in such a manner as to ensure all activities comply with requirements.	TWR4.1 Manage tank waste volume within the existing double-shell tank capacity.	TWR4.1.1 Stage waste and complete evaporator campaign(s) to reduce waste volume one million gallons by June 30, 1997.	Milestone not in MYWP schedule.
		TWR4.1.2 Update Final Safety Analysis Report for 242-A evaporator by March 31, 1997.	Milestone not in MYWP schedule. A milestone, expectation and workscope are being negotiated by RUST with another DOE-RL group.
		TWR4.1.3 Prepare and issue an Annual Operational Waste Volume Report by August 31, 1997.	TPA M-46-OOD, milestone number T2A-97-106, is in the MYWP with a date of 9/30/97 and does not support the expectation date.
		TWR4.1.4 Install the new pump in tank 104-AW by July 15, 1997.	The milestone for this activity is T21-97-311. The milestone date is 9/30/97 and does not support the expectation.
		TWR4.1.5 Complete installation and acceptance of 16 Standard Hydrogen Monitor Systems (SHMS) on flammable gas tanks by July 31, 1997.	Milestone T21-97-925 has been assigned to this expectation. Its completion date of 9/30/97 does not meet the expectation date. Milestone states initiate installation.
		TWR4.1.6 Install the jumper manifold in the AW Tank Farm by July 15, 1997.	The activity is included in milestones T21-97-453 and T21-97-454. The completion date on latest milestone is 8/1/97.

Attachment 5-1 Performance Measures (Page 3)

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TANK WASTE REMEDIATION SYSTEM			
OBJECTIVE	**MEASURE**	**EXPECTATION (RL GUIDANCE)**	**MYWP PLANNING**
		TWR4.1.7 Replace the 242-A Steam-driven fan with an electric driven unit by January 15, 1997.	The milestone for this activity is T21-97-452. The milestone date is 1/31/97. This milestone, expectation and workscope are being negotiated by RUST with another DOE-RL group.
TWR5 Transmitting Tank Farms to controlled, clean and stable condition.	TWR5.1 Transition tank farms to controlled, clean and stable condition.	TWR5.1.1 Complete interim stabilization of an additional four tanks in the 200-West area by September 30, 1997.	Milestone T21-97-607 has been assigned to this expectation and meets the expectation date.
		TWR5.1.2 Initiate interim stabilization (salt-well pumping) on 18 tanks including seven flammable gas watch list tanks in S and SX Tank Farms by June 30, 1997 (TPA Milestone M-41-14) and two organic watch list tanks in S and SX Tank Farms by June 30, 1997 (TPA Milestone M-41-15).	This expectation has been divided into two milestones T21-97-304 and T22-97-603 matching each of two TPA milestones M-41-21 and M-41-22 respectively. The dates for these milestones do not meet the expectation in the latter case.
		TWR5.1.3 Operate the mixer pump in Tank 101-SY to mitigate the flammable gas safety issue.	Operation of the mixer pump is the subject of milestone T21-97-608. The operation of the pump is an LOE activity and will occur when required during the year.
		TWR5.1.4 Complete the terminal clean out of 242-T evaporator by September 30, 1997.	Milestone T21-98-610 closely matches this expectation but has a due date of 3/31/98.
		TWR5.1.5 Reduce the surface soil contamination by cleaning up an area of one million square feet by September 30, 1997.	Milestone T21-97-611 has been assigned to this expectation. The milestone date supports the expectation date.

TANK WASTE REMEDIATION SYSTEM

OBJECTIVE	MEASURE	EXPECTATION (RL GUIDANCE)	MYWP PLANNING
		TWR5.1.6 Achieve controlled, clean and stable state for T, B and BY Tank Farms in accordance with applicable project plans by September 30, 1997.	Milestones for B and T Farms are T21-97-601 (B-Farm) and T21-97-602 (T-Farm). Controlled, clean and stable state for BY Farm is currently scheduled for FY98.
		TWR5.1.7 Free up Double-shell Tank space in West Tank Farm by completing two cross-site transfers from 200-West area to 200-East Area by September 30, 1997.	Milestone T21-97-609 is in MYWP. Due date is 2/26/98.
		TWR5.1.8 Complete interim stabilization of tank BY-109 by December 31, 1996 and Tank BY-103 by September 30, 1997.	Interim stabilization of Tanks BY-103 and BY-109 is planned for FY97, but there are no milestones in the current MYWP submittal.
	TWR5.2 Complete design and construction activities required for transition to controlled, clean and stable condition.	TWR5.2.1 Start definitive design for Project W-314 by January 31, 1997.	The milestone for this activity is T21-97-100. The milestone date is 1/2/97.
		TWR5.2.2 Complete tank farms ventilation upgrades Project W-030 and begin operation by December 31, 1996.	Milestone not in MYWP schedule.
		TWR5.2.3 Complete construction of the cross-site transfer system by August 31, 1997.	T2C-97-108 (M-43-07B) in the MYWP and the expectation agrees.
TWR6 Establish a comprehensive safety management system which ensures there is an adequate authorization basis.	TWR6.1 Establish authorization basis for the tank farms.	TWR6.1.1 Submit Final Safety Analysis Report to TWRS Tank Farms following Tier II review by November 15, 1996.	No milestone identified in MYWP.
		TWR6.1.2 Complete transition from TWRS Interim Safety Basis to TWRS Basis for Operations within 90 days after DOE-RL approval.	This activity is not currently planned.

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TANK WASTE REMEDIATION SYSTEM			
OBJECTIVE	**MEASURE**	**EXPECTATION (RL GUIDANCE)**	**MYWP PLANNING**
		TWR6.1.3 Complete transition from TWRS Basis for Operations to the TWRS Final Safety Analysis Report within 180 days after DOE-HQ approval.	This activity is not currently planned.
		TWR6.1.4 Implement DNFSB Recommendation 95-2 Implementation Plan for the TWRS Pilot as defined in the TWRS Safety Management System 95-2 description by December 31, 1996.	No milestone identified in MYWP.
TWR7 Complete actions to support Phase I privatization contractor(s). *Percent of Fee Pool=2%	TWR7.1 Retrieve tank waste; prepare for Phase I privatization contractor(s) and receive immobilized waste and secondary waste for storage and disposal.	TWR7.1.1 Complete Initial Single-Shell Tank Retrieval System conceptual design by March 31, 1997 (reference (TPA Milestone M-45-04A).	Milestone for this activity is T31-97-220 Milestone date is 4/7/97.
		TWR7.1.2 Submit initial single shell retrieval sequence (tank farm closure) document by September 30, 1997 (Annually thereafter).	Expectation is being re-written. No milestone identified in MYWP.
		TWR7.1.3 Complete TPA Milestone M-45-08-T02 for leak detection, monitoring and mitigation by January 31, 1997.	Expectation is being re-written. No milestone identified in MYWP.
		TWR7.1.4 Conduct Hanford Tank Initiative (SST waste retrieval demonstration project) per the plan currently in preparation including: complete single-shell tank retrieval demonstration (Tank 106-C heel removal) conceptual design by May 31, 1997 and provide specification system for installation and operation of heal removal by September 30, 1997.	The milestones for this activity are T31-97-104 and T31-97-105. A system design description is the deliverable instead of a conceptual design. These milestone dates support the expectation.

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TANK WASTE REMEDIATION SYSTEM			
OBJECTIVE	**MEASURE**	**EXPECTATION (RL GUIDANCE)**	**MYWP PLANNING**
		TWR7.1.5 Complete tank retrieval and pump installation (Project W-211) Title II design for Tank 102-SY and obtain Key Decision 3 by March 31, 1997 (note: this is the first of 10 tanks).	Milestone T31-97-100 agrees with the expectation. The milestone does not include obtaining Key Decision 3.
		TWR7.1.6 Complete Title II design for the second tank in Project W-211 by September 30, 1997.	Milestone has not been identified in MYWP.
		TWR7.1.7 Update Low-Level Waste and High-Level Waste Feed Staging Plan by February 28, 1997.	Draft Waste feed staging plans are included in milestones T32-97-121 and T33-97-001. The dates for each of these milestones are 11/14/96 and 8/15/97 respectively.
		TWR7.1.8 Update the Privatization Data Quality Objective by March 31, 1997.	Milestone not in the MYWP.
		TWR7.1.9 Complete the preliminary Enhanced Sludge Washing (TPA Milestone M-50-03) Decision Report by February 28, 1997.	T3A-98-100 completion 3/30/98 does not agree with expectation.
		TWR7.1.10 Provide double-shell tank sonic probe with safety documentation for Tank 102-SY retrieval by September 30, 1997.	Milestone T31-97-103 matches the expectation identified in the MYWP.
		TWR7.1.11 Submit the summary report for TPA Milestone M-50-03-T02 on Enhanced Sludge Washing by September 15, 1997.	Milestone T33-96-606 has been assigned to this expectation. The completion date supports the expectation.

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TANK WASTE REMEDIATION SYSTEM			
OBJECTIVE	**MEASURE**	**EXPECTATION (RL GUIDANCE)**	**MYWP PLANNING**
TWR8 Provide support to the privatized Phase I contractor(s).	TWR8.1 Comprehensive infrastructure support provided to the privatized Phase I contractor(s).	TWR8.1.1 Participate on the integrated Process/Product teams to resolve issues with the privatized contractors as identified in the TWRS Privatization RFP (Reference RFP No. DE-RP06-96RL13308 and associated amendments) by December 29, 1997.	The milestone for this activity is T32-98-151. The milestone date is 12/31/97 which is in FY98.
		TWR8.1.2 Complete requirements identified for the DOE responsibilities in the TWRS Privatization RFP Interface Description Documents (Reference RFP No. DE-RP06-96RL13308) by December 29, 1997.	The milestones for this activity are T32-97-035, T33-97-040, T33-97-045 and T33-97-055. The milestone dates are all 5/29/97.
		TWR8.1.3 Complete and submit draft test plans for High-Level Waste and Low-Level Waste alternative path, core competency and risk reduction activities by November 14, 1996. (Reference negotiated TPA Milestone M-61.)	Milestone T33-97-021 supports a portion of this expectation. The completion date supports the expectation.
		TWR8.1.4 Complete the Design Requirements Documents (DRDs), with exception of the Telecommunications DRD, for the Infrastructure Projects required to support Phase I privatization by January 30, 1997.	The milestone for this activity is T32-97-028. The completion date supports the expectation.
		TWR8.1.5 Update the TWRS process flowsheets by August 15, 1997.	The milestone for this activity is T32-97-120. The completion date of 9/26/97 does not support the expectation.

6.1.4 Major Accomplishments

- Prepared an Interface Control Documents and a Functions and Requirements Document to support privatization and accelerated RL schedule.
- Completed DOE-HQ (FM-20) independent cost estimate reviews on both the Storage and Disposal Programs. Received high marks from the DOE-HQ team for improvement in the quality of cost estimates.
- Issued the TWRS Environmental Impact Statement.
- Submitted the Activity Data Sheets to DOE HQ ahead of schedule and received "a best" in DOE rating by HQ.
- Submitted and obtained approval of the FY 1996 Multi-Year Program Plan. The plan showed a significant improvement over the prior year's document.
- Following extensive restructuring of the TWRS System Engineering Organization, the TWRS Functions and Requirements Baseline was approved.

6.1.5 Major Deliverables

6.1.5.1 FY 1997-1998

- EIS Record of Decision
- TWRS Technical Requirements Specifications
- Technical Requirements Reviews as needed
- Annual Activity Data Sheets
- Multi-Year Work Plan annual update

6.1.5.2 FY 1999-2003

- Annual Activity Data Sheets
- Multi-Year Work Plan annual update
- Close criticality issue; Tri-Party Agreement Milestone M-40-12.

6.1.6 Key Interfaces

6.1.6.1 Within TWRS

- Other TWRS projects for input and status on the cost and schedule baseline.

6.1.6.2 Outside TWRS

None

6.0 MANAGEMENT SYSTEMS [WBS 1.1.1.1]

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6.0 MANAGEMENT SYSTEMS [WBS 1.1.1.1]

6.1 PROJECT SUMMARY

6.1.1 Project Mission/Overview

The mission of the Management Systems Project is to provide the overall integration of the TWRS Program by establishing and maintaining the technical, cost, and schedule baselines for the 17 TWRS projects, and to develop and implement an effective project control system.

The primary areas of responsibility in Management Systems are Program Integration, Program Control, and General Support. Program Integration provides systems engineering leadership for the TWRS Program; maintains the technical baseline; provides program-wide ESH&QA administration, planning, and oversight. Program Control provides project control systems for rigorous control of the TWRS Program and administers the TWRS performance based initiatives. General Support provides resources to RL and WHC for special studies that are required by the TWRS Program and for typical indirect type activities that are needed to support the program.

This project has a nominal life span of nine years ending in 2005. At that time, the Storage projects will be complete and the need for integration significantly reduced. The remaining activities (that logically should continue for the life of the TWRS Program) will be merged with similar functions performed by the Waste Disposal Integration Team within the Disposal Program.

6.1.2 Planning Assumptions

The following two summary-level assumptions specifically linked to carrying out the program mission are as follows:

- The DOE privatization initiative will be successful.
- No impacts to the baseline documented in the approved TWRS Multi-Year Work Plan are anticipated regarding the transition to the new Maintenance and Integration contractor (PHMC).

Other lower level assumptions are documented on activity-based cost estimates.

6.1.3 Technical Objectives

The overall objectives of Management Systems are to continue to improve and deploy the TWRS technical baseline, manage TWRS with an efficient project control system, and effectively manage compliance with safety and environmental requirements. Major objectives for FY 1997 are to expand the technical baseline by completing the Technical Requirements Specifications and related reviews, facilitate the start of work on specific project Design Requirements Documents, DOE-HQ issuance of the Record of Decision for the TWRS Environmental Impact Statement, and complete the annual Activity Data Sheets and Multi-Year Work Plan update. Other specific objectives are documented in the WBS dictionary sheet (see Attachment 6.2-2).

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6.2 WORK BREAKDOWN STRUCTURE

The following attachments are located in Section 6.6:

Attachment 6.2-1 WBS Hierarchy/RAM
Attachment 6.2-2 WBS Dictionary Sheet

6.3 SCHEDULE BASELINE

The following attachments are located in Section 6.6:

Attachment 6.3-1 Project Master Schedule
Attachment 6.3-2 Milestone Control Log
Attachment 6.3-3 Milestone Description Sheets

The milestones on the milestone control log are sorted by date and the page number of the corresponding milestone description sheet is provided.

6.4 COST BASELINE BY YEAR

The following attachment is located in Section 6.6:

Attachment 6.4-1 Cost Baseline by Year

6.5 EXECUTION YEAR

The following attachments are located in Section 6.6:

Attachment 6.5-1 Performance Objectives, Measures, and FY 1997 Expectations
Attachment 6.5-2 FY 1997 Performance Baseline Schedule
Attachment 6.5-3 Cost Baseline for Execution Year by Fund Type by Month

6.6 ATTACHMENTS

This section contains the Work Breakdown, Schedule Baseline, Cost Baseline, and Execution Year exhibits for the Management Systems Project.

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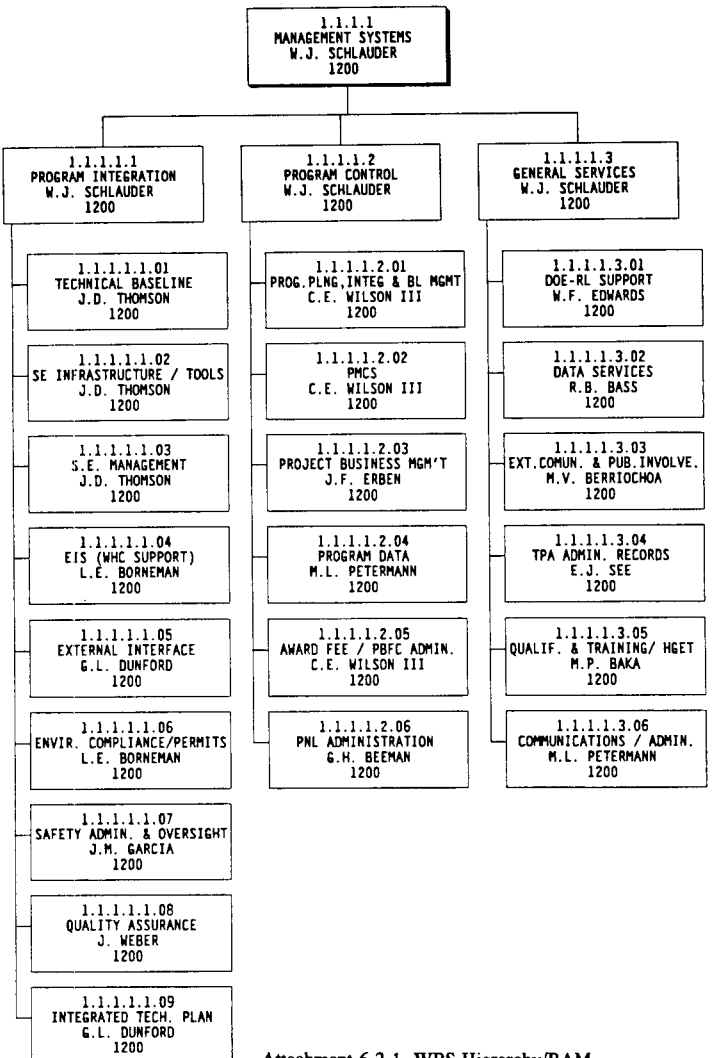
ATTACHMENT 6.2-1

WBS HIERARCHY/RAM

TWRS FY 1997 WORK BREAKDOWN STRUCTURE
MANAGENMENT SYSTEMS



Attachment 6.2-1 WBS Hierarchy/RAM

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ATTACHMENT 6.2-2

WBS DICTIONARY SHEET

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TANK WASTE REMEDIATION SYSTEM
WORK BREAKDOWN STRUCTURE DICTIONARY

1. PROGRAM/TITLE PARTICIPANT 1.1.1 Tank Waste Remediation System		
2. WBS ELEMENT CODE/LEVEL 1.1.1.1	3. WBS ELEMENT TITLE Management Systems	
3. CURRENT REV NO 1	4.EFFECTIVE REV DATE October 1, 1996	5. APPROVED CHANGES

ELEMENT DESCRIPTION

1. TECHNICAL BASES

a. Goals and Objectives

The Management Systems WBS element products result from a systems engineering type process to identify and define the functional, architectural, and interface requirements for the Tank Waste Remediation System (TWRS) physical system. The Functions and Requirements document (DOE/RL-92-60) and architecture are the basis for the currently established TWRS product tree. Systems engineering analysis of TWRS functions and requirements will continue for the life of the Program to identify emerging requirements for products other than those currently known.

In direct support of the TWRS Program (WBS element 1.1.1), Management Systems provides management structure and processes for the systematic direction and financial control of the TWRS Program. This WBS element includes specific work to improve the current Management Systems structure and processes. Significant products required of the operative management system involve the full discharge of fiscal responsibilities and the formalized planning, execution, and evaluation of work.

The major products provided by Management Systems for the TWRS Program include the Multi-Year Program Plan (including the technical baseline), with annual updates. An additional management element involves supporting activities associated with the designation of the Tank Waste Remediation Program as a Major Systems Acquisition Program (MSAP). The management structures and processes developed by Management Systems are planned to support the scheduled completion of the TWRS Program.

To ensure that the TWRS remediation activities will conform to applicable environmental, safety, and industrial health laws and regulations and to ensure that such activities will be performed in a Total Quality Management environment, a series of lower tier compliance plans will be developed. These compliance plans will be directed toward full satisfaction of the requirements of DOE Order 430.1.

INTENTIONALLY

The risks associated with Management Systems are major changes in programmatic direction or necessary adjustments to established schedules. These types of changes affect products and require rework of the planning and budgeting elements of the Program. Risks of this nature may develop from evolving technologies, legislative actions, or from particular situations arising from the stakeholder and public involvement process. The Program maintains flexibility to respond and adapt to the anticipated evolution of TWRS.

b. Major End-Item Deliverables

- EIS Record of Decision (ROD).
- TWRS Technical Requirements Document (TRSs).
- Technical Requirements Reviews (TRRs) as necessary.
- Annual Activity Data Sheets (ADSs).
- Multi-Year Work Plan (MYWP) Annual Update.
- Nuclear Criticality Safety Issue (Tri-Party Agreement Milestone M-40-12)

2. STATEMENT OF WORK

The work of Management Systems is performed through three activities: Program Integration, Program Control, and General Services.

Program Integration defines the Program's parameters (i.e., technical bases, resource requirements, and time constraints) and provides for the definition of the program functions, requirements, and products from strategies and alternatives. Integration also provides the tools for decision making and risk management and the basic systems to support configuration management of the technical baseline as well as the basic program-level guidance for Environmental, Health, and Safety, and Quality Assurance supplementing company-level directives to meet unique Program needs.

Program Control provides implementation of authorized baseline. The reporting function of this activity acquires data pertaining to the actual progress of the programmatic work, analyzes the data in terms of the actual versus the baseline, and reports that information and the resultant baseline status. Reporting program status and trends disseminates the Program's collected progress data and identifies the potential impacts to the baseline. The Program manages impacts to the baseline through change control procedures, including changes directed by DOE. Program Control also provides analysis of completed and ongoing work, recommendations for decision analysis, assessments of compliance with applicable requirements, measurements of baseline performance and resource consumption, assessments of impacts of proposed changes to program activities, and management of commitments. Full evaluation reporting is provided through the Site Management System (SMS) and the Progress Tracking System (PTS), modified to meet the needs of TWRS.

General Services supports management infrastructure functions relating to the entire Program Included are Data Management, Tri-Party Agreement Record Administration, Public Involvement and Community Relations and Internal Communications. This activity also provides resources to DOE-RL for staff support and to conduct special studies and independent assessments important to the Program.

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The Management Systems program element provides the structure and processes needed to fulfill the requirements under the Program Integration, Program Control, and General Services activities. Through these activities, the programmatic work may be effectively defined, planned, scheduled, budgeted, assigned, performed, measured, and controlled. The Management Systems are described in the Multi-Year Program Plan.

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ATTACHMENT 6.3-1

PROJECT MASTER SCHEDULE

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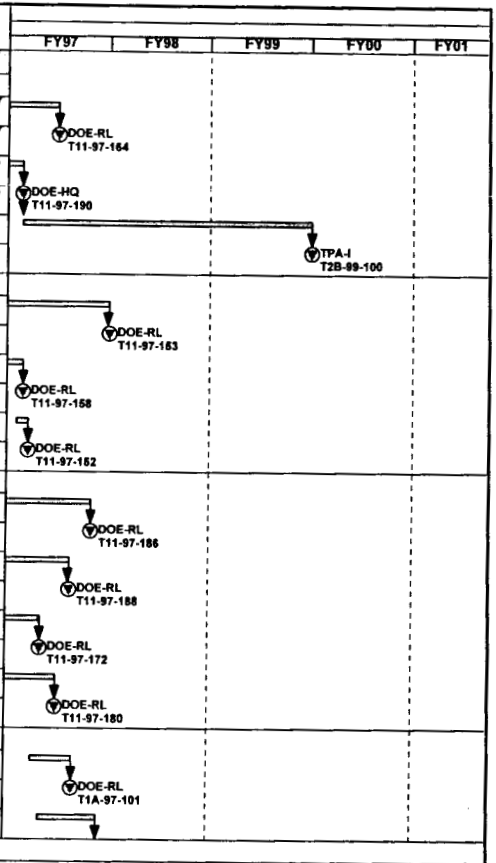
Activity ID	Activity Description	Early Start	Early Finish
1.1.1.1 - Management Systems			
Safety & Health			
A0430	PREPARE DRAFT OF TWRS VPP APPLICATION	01OCT96*	31MAR97
A0435	DEV OF DRAFT TWRS VPP APPLICATION CMPLT		31MAR97
A0440	RESOLVE DOE COMMENTS ON TECH BASES (TOPICAL)	01OCT96*	21NOV96
A0441	COMMENTS ON TECHNICAL BASIS RESOLVED		21NOV96
A0442	CRITICALITY SAFETY ISSUE	22NOV96	30SEP99
A0445	M-40-12, CRITICALITY SAFETY ISSUE CLOSED		30SEP99
Environmental Compliance			
A0155	RCRA MARKING & MAPPING	01OCT96*	30SEP97
A0156	MAP & MARK CROSS-SITE XFER LINE		30SEP97
A0160	TWRS ENVIRONMENTAL RQTS MGMT PLAN	01OCT96*	27NOV96
A0161	TWRS ENVIRON RQTS MGMT PLAN COMPLT		27NOV96
A0166	TWRS ENVIRON PRJ MGMT PLAN	01NOV96*	16DEC96
A0167	TWRS ENVIRON PRJ MGMT PLAN COMPLT		16DEC96
System Engineering			
A0600	ORSA: RETRIEVAL & DISPOSAL DECISION SUPPORT	01OCT96*	01AUG97
A0605	ORSA: ISSUE RPT RECOMMENDING 3 DECISIONS		01AUG97
A0610	ORSA: TANK FARM OP IMPROV ANALYSIS	01OCT96*	15MAY97
A0615	ISSUE ORSA RPT FOR TK FARM OP IMPROVEMENTS		15MAY97
A0620	SCHEDULED SRR ACTIONS	01OCT96*	31JAN97
A0625	SRR ACTIONS COMPLETE		31JAN97
A0670	SIP: DEV/VALIDATE TWRS MASTER LOGIC TO PROJ LEV	01OCT96*	31MAR97
A0675	COMPLT OF VALIDATED TWRS LOGIC TO PROJ LEV		31MAR97
Program Control			
A0255	ADS PREPARATION	02JAN97*	30MAY97
A0260	TWRS ADSs SUBMITTED		30MAY97
A0270	MYPP PREP	03FEB97*	29AUG97



Project Start 01JAN74 | Project Finish 30SEP64 | Data Date 01OCT95 | Plot Date 19SEP96

Early Bar | Progress Bar

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Sheet 1 of 2

TWRS
1.1.1.1 MANAGEMENT SERVICES
PROJECT MASTER SCHEDULE

9/23/96

Date	Revision	Checked	Approved

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Activity ID	Activity Description	Early Start	Early Finish
A0275	ISSUE ANNUAL UPDATE OF MYPP TO RL		29AUG97
Doe-RI			
A0500	TWRS CRITICAL COST ANALYSES	01OCT96*	01APR97
A0505	CRITICAL COST ANALYSES ON TWRS PROJ (7)		01APR97

Sheet 2 of 2

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ATTACHMENT 6.3-2

MILESTONE CONTROL LOG

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Milestone Number	Type	WBS	Title	Due Date	Forecast Date	Completion Date	Remarks
T11-97-190	MAJOR-RL	1.01.01.01.01.07	DOE COMMENTS ON CRITICALITY SAFETY ISSUE TECHNICAL BASES RESOLVED	11/21/96	See page 10		
T11-97-158	MAJOR-RL	1.01.01.01.01.06	TWRS ENVIRONMENTAL REQUIREMENTS MANAGEMENT PLAN	11/27/96	See page 4		
T11-97-152	MAJOR-RL	1.01.01.01.01.06	TWRS ENVIRONMENTAL PROJECT MANAGEMENT PLAN COMPLETE	12/16/96	See page 2		
T11-97-172	MAJOR-RL	1.01.01.01.01	COMPLETE SCHEDULED SRR ACTIONS	1/31/97	See page 6		
T11-97-164	MAJOR-RL	1.01.01.01.01.07	DEVELOPMENT OF DRAFT TWRS VPP APPLICATION COMPLETE	3/31/97	See page 5		
T11-97-180	MAJOR-RL	1.01.01.01.02	COMPLETION OF A VALIDATED TWRS LOGIC TO THE PROJECT LEVEL	3/31/97	See page 7		
T11-97-105	MAJOR-RL	1.01.01.01.03.01	COMPLETED SEVEN CRITICAL COST ANALYSES ON TWRS PROJECTS	4/1/97	See page 1		
T11-97-188	MAJOR-RL	1.01.01.01.01.03	ISSUE ORSA REPORT FOR TANK FARMS OPERATIONS IMPROVEMENT	5/15/97	See page 9		
T1A-97-101	MAJOR-RL	1.01.01.01.02.01	FIVE-YEAR PLAN - ADS SUBMITTED	5/30/97	See page 12		
T11-97-186	MAJOR-RL	1.01.01.01.01.03	ISSUE THREE ORSA DECISION REPORTS FOR THE RETRIEVAL AND DISPOSAL PROGRAMS	8/1/97	See page 8		
T1A-97-100	MAJOR-RL	1.01.01.01.02.01	ISSUE ANNUAL DRAFT UPDATE OF THE MYWP TO DOE-RL	8/29/97	See page 11		

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Milestone Number	Type	WBS	Title	Due Date	Forecast Date	Completion Date	Remarks
T11-97-153	MAJOR-RL	1.01.01.01.01.06	MAP AND MARK CROSS-SITE TRANSFER LINE COMPLETE	9/30/97	See page 3		
T2B-99-100	TPA-Interim	1.01.01.01.01.07	NUCLEAR CRITICALITY SAFETY ISSUE RESOLVED (M-40-12)	9/30/99	See page 13		

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ATTACHMENT 6.3-3

MILESTONE DESCRIPTION SHEETS

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-105
WBS Number 1.01.01.01.03.01

Title: COMPLETED CRITICAL COST ANALYSES ON TWRS PROJECTS

Revision/CIN: 0
Due Date: 4/1/97
ADS No: 1200
Schedule ID: RL970107M
Scheduler: C RITTER

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Complete critical analysis of TWRS projects.

Description of what Constitutes Completion of the Commitment:
Issuance of the final critical analysis report.

Acceptance Criteria:
Report which can be used to provide basis for reconciliation with the prime contractor's estimates.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-152
WBS Number 1.01.01.01.01.06

Title: TWRS ENVIRONMENTAL PROJECT MANAGEMENT PLAN COMPLETE

Revision/CIN: 0
Due Date: 12/16/96
ADS No: 1200
Schedule ID: EC970601A3
Scheduler: CR RIENDEAU

Milestone Level:	Deliverables	Addressed To:
[ ] TPA	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[x] Other (Specify) Letter and Plan	
[ ] Contractor		

Description of this Commitment:
Develop and issue a final draft of the TWRS Environmental Project Management Plan to the Department of Energy, Richland Operations Office (RL) program monitor for review and comment. The Plan will depict TWRS Environmental Compliance scope, responsibilities, interfaces, and protocol for the achievement of environmental compliance at TWRS. This plan will be issued as a controlled document as defined by WHC document control systems when released for implementation.

Description of what Constitutes Completion of the Commitment:
Transmittal of the Plan under external cover letter to the responsible RL program monitor for review and comment.

Acceptance Criteria:
The plan shall meet the requirements of the TWRS Environmental Project Manager and establish the TWRS Environmental Compliance scope, responsibilities, interfaces, and protocol for achieving compliance.

MDS APPROVAL	COMPLETION APPROVAL
	Date Milestone Was Completed
WHC Responsible Manager/Date	WHC Responsible Manager/Date
DOE Manager/Date	DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-153
WBS Number 1.01.01.01.01.06

Revision/CIN: 0
Due Date: 9/30/97
ADS No: 1200
Schedule ID: EC970603C2
Scheduler: CR RIENDEAU

Title: MAP AND MARK CROSS-SITE TRANSFER LINE COMPLETE

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[x] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[ ] DOE-RL
[x] Other (Specify) Manager, TWRS Environmental

Description of this Commitment:
Complete marking and mapping of the Cross-Site Transfer Line which extends outside the 200E and 200W area boundaries. Mapping and marking of those lines outside the 200 area boundaries is an FY 1997 permit condition of the Dangerous Waste Permit.

Description of what Constitutes Completion of the Commitment:
Completion of this commitment will be based on issue of a letter to the Manager, TWRS Environmental Compliance, reporting verification and completion of the required marking and mapping effort.

Acceptance Criteria:
A document that fulfills the requirements of the Dangerous Waste Permit

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-158
WBS Number 1.01.01.01.01.06

Revision/CIN: 0
Due Date: 11/27/96
ADS No: 1200

Title: TWRS ENVIRONMENTAL REQUIREMENTS MANAGEMENT PLAN

Schedule ID: EC970605A2
Scheduler: CR RIENDEAU

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Prepare a plan and schedule for the implementation of a cost-effective system for documenting, managing, and utilizing environmental requirements applicable to TWRS programs, projects, and facilities. The Plan should utilize, to the extent practicable, existing systems and programs for requirements management and anticipate potential changes in overall Company management of internal and external requirements.

Description of what Constitutes Completion of the Commitment:
Submittal of the Plan and schedule to the RL TWRS Program Manager for review by October 31, 1996, and concurrence by November 27, 1996. All comments received by RL by November 15, 1996 will be formally dispositioned.

Acceptance Criteria:
Transmittal of the final Requirments Management Plan to the RL TWRS Environmental Program Manager for concurrence (November 27, 1996).

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-164
WBS Number 1.01.01.01.01.07

Revision/CIN: 0
Due Date: 3/31/97
ADS No: 1200
Schedule ID: SH970301M
Scheduler: CR RIENDEAU

Title: DEVELOPMENT OF DRAFT TWRS VPP APPLICATION COMPLETE

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
TWRS Safety will develop a draft Voluntary Protection Program (VPP) Application for TWRS that will be used as an umbrella document of the Safety Program.

Description of what Constitutes Completion of the Commitment:
TWRS Safety shall provide a draft VPP Application to DOE-RL and the VPP Steering Committee.

Acceptance Criteria:
The draft VPP Application shall be submitted by the due date.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-172
WBS Number 1.01.01.01.01

Revision/CIN: 0
Due Date: 1/31/97
ADS No: 1200

Title: COMPLETE SCHEDULED SRR ACTIONS

Schedule ID: TB970K01M
Scheduler: CR RIENDEAU

Milestone Level:	**Deliverables**	**Addressed To:**
[ ] TPA	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[x] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
The TWRS SRR Implementation Plan will reflect completion dates for deliverables designed to resolve SRR findings and recommendations. This commitment applies to the set of deliverables scheduled in the plan for completion by January 31, 1997; the commitment is to complete this set of deliverables by January 31, 1997.

Description of what Constitutes Completion of the Commitment:
The TWRS SRR Implementation Plan will be issued by September 20, 1996. Dates will be included for deliverables scheduled for completion in FY 1997. This commitment will be complete when a letter is issued to RL documenting that all deliverables scheduled to be completed on or before January 31, 1997 are complete. This does not include closure of the findings, which requires an RL letter to WHC agreeing that the completed deliverables constitute closure of the finding(s).

Acceptance Criteria:
Deliverables as described in the deliverable column of the SRR Implementation Plan that are scheduled for completion in the schedule column of the Implementation Plan by January 31, 1997 are complete. Agreement by RL that the corresponding finding is closed is not required to complete this milestone. A copy of the signed and or issued document is adequate for this milestone. If, upon review, RL determines that any deliverable is inadequate for its intended purpose, then this milestone will not be considered complete.

MDS APPROVAL	COMPLETION APPROVAL
	Date Milestone Was Completed
WHC Responsible Manager/Date	WHC Responsible Manager/Date
DOE Manager/Date	DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-180
WBS Number 1.01.01.01.02

Revision/CIN: 0
Due Date: 3/31/97
ADS No: 1200

Title: COMPLETION OF A VALIDATED TWRS LOGIC TO THE PROJECT LEVEL

Schedule ID: S1970A01M
Scheduler: CR RIENDEAU

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify) Logic Diagram

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
During FY 1996 the TWRS project level (F&R levels 4, 5, or 6) logic was modified and validated by TWRS Project Managers. This milestone represents taking that logic and developing it down to an additional level of detail and validating the resulting logic with the TWRS Project Managers.

Description of what Constitutes Completion of the Commitment:
A change request to the TWRS baseline will be prepared using as a basis the validated, modified logic completed in FY 1996; impacts at lower levels will be evaluated and the logic will be developed to one additional level of detail.

Acceptance Criteria:
The following criteria will be used for acceptance:

1. All TWRS Projects will be shown on the network including major functions/sub-projects.

2. The logic will consist of several large printouts - the products must be readily readable and clearly show the interfaces between logic nodes.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-186
WBS Number 1.01.01.01.01.03

Revision/CIN: 0
Due Date: 8/1/97
ADS No: 1200-00

Title: ISSUE THREE ORSA DECISION REPORTS FOR THE RETRIEVAL AND DISPOSAL PROGRAMS

Schedule ID: SM970G02M

Scheduler: CR RIENDEAU

Milestone Level:	**Deliverables**	**Addressed To:**
[ ] TPA	[x] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[ ] Other (Specify)	
[ ] *Contractor*		

Description of this Commitment:

Operations research/system analysis capabilities will provide an analytic basis for two optimized retrieval (Function 4.2.2) program decisions and one optimized disposal (Function 4.2.4) program decision. The decisions will be selected in conjunction with project management. A technical report will document each analysis.

Description of what Constitutes Completion of the Commitment:

Publication of three supporting documents (SDs), one for each decision.

Acceptance Criteria:

Each report:

1. Has been TWRS/RL/SE and peer-reviewed.
2. Documents the methodology use and analysis results.
3. Documents how the analysis results are used in actual decision making.

MDS APPROVAL	COMPLETION APPROVAL
	Date Milestone Was Completed
WHC Responsible Manager/Date	WHC Responsible Manager/Date
DOE Manager/Date	DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-188
WBS Number 1.01.01.01.01.03

Revision/CIN: 0
Due Date: 5/15/97
ADS No: 1200-0

Title: ISSUE ORSA REPORT FOR TANK FARMS OPERATIONS IMPROVEMENT

Schedule ID: SM970G04M
Scheduler: CR RIENDEAU

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
An area of tank farm operations outside of the BIO (e.g., surveillance) will be selected for an optimization study. Operations research/system analysis capabilities will be applied to recommend modifications to current operational requirements or procedures (i.e., operations and maintnance). A technical report will document the analysis and recommendations. DOE-RL will review personnel credentials and experience and concur with personnel selection for this task. Quarterly status reports will be issued.

Description of what Constitutes Completion of the Commitment:
Publication of an SD

Acceptance Criteria:
The report will:

1. Be peer-reviewed
2. Document analysis methodology and results
3. Recommend changes in current practices to improve them in terms of defined performance criteria such as cost, effectiveness, risk, etc.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T11-97-190
WBS Number 1.01.01.01.01.07

Revision/CIN: 0
Due Date: 11/21/96
ADS No: 1200
Schedule ID: SH97010344

Title: DOE COMMENTS ON CRITICALITY SAFETY ISSUE TECHNICAL BASES RESOLVED

Scheduler: CR RIENDEAU

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
All DOE comments on the technical bases (topical) report will be resolved.

Description of what Constitutes Completion of the Commitment:
Safety Issue Resolution shall provide a report providing explanations and technical bases used in resolution of DOE comments.

Acceptance Criteria:
All comments resolved with concurrance of the appropriate reviewer.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T1A-97-100
WBS Number 1.01.01.01.02.01

Revision/CIN: 0
Due Date: 8/29/97
ADS No: 1200-00-AA
Schedule ID: PB970501A

Title: ISSUE ANNUAL DRAFT UPDATE OF THE MYWP TO DOE-RL

Scheduler:

Milestone Level:	**Deliverables**	***Addressed To:***
[ ] TPA	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[x] Other (Specify) Multi-Year Work Plan	
[ ] Contractor		

Description of this Commitment:

Develop, integrate, and coordinate preparation of the TWRS Multi-Year Work Plan (MYWP), including the following requirements: program and project narratives, technical baseline narrative, work breakdown structure, responsibility assignment matrix, integrated project baseline schedule, milestone control log and milestone description sheets, cost baseline by year, basis of estimate, planned staffing profiles, performance measures, and execution year technical objectives, performance baseline schedule, and cost baseline by month.

Description of what Constitutes Completion of the Commitment:

Baseline document entitled "Tank Waste Remediation System FY 1998 Multi-Year Work Plan" will be integrated and formally transmitted to DOE-RL TWRS by August 31, 1997.

Acceptance Criteria:

The MYWP will meet Site Management System (SMS) outline criteria established by DOE-RLIDS and specific TWRS-RL guidance for scope, schedule, and budget and will cover the life of the program. Formal guidance must be received no later than Ma y 15, 1997.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T1A-97-101
WBS Number 1.01.01.01.02.01

Revision/CIN: 1 TWR-97-001
Due Date: 5/30/97
ADS No: 1200

Title: FIVE-YEAR PLAN - ADS SUBMITTED

Schedule ID: PB970402M
Scheduler:

Milestone Level:	Deliverables	Addressed To:
[ ] TPA	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[x] Other (Specify) ELECTRONIC FILE	
[ ] Contractor		

Description of this Commitment:
DEVELOP AND COORDINATE PREPARATION OF THE TWRS FIVE YEAR PLAN ACTIVITY DATA SHEETS (ADS'S). THIS WILL INCLUDE THE LOADING OF THE TWRS MULTI-YEAR BASELINE INTO THE WHC RPM/EPDS SYSTEM. THE ADS'S WILL BE ATTACHED AND WILL BE UTILIZED TO DOCUMENT TWRS REQUEST FOR FUNDING FROM CONGRESS. THE INFORMATION SHALL SUPPORT SEVEN (7) FISCAL YEARS INCLUDING SCOPE DESCRIPTIONS, BUDGET REQUIREMENTS AND SCHEDULE INFORMATION IN THE FORM OF MILESTONES AND DELIVERABLES.

Description of what Constitutes Completion of the Commitment:
ELECTRONICALLY TRANSMIT FIVE YEAR PLAN ADS'S AND SUPPORTING DOCUMENTATION (SUB-ACTIVITY DATA SHEETS) TO DOE-RL.

Acceptance Criteria:
THE FIVE YEAR PLAN ADS'S WILL BE PREPARED CONSISTENT WITH DOE-HQ AND DOE-RL CRITERIA. GUIDANCE MUST BE RECEIVED ON CONTENT DELIVERABLES; SCOPE, SCHEDULE AND BUDGET REQUIREMENTS NO LATER THAN JANUARY 30 OF EACH YEAR.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2B-99-100
WBS Number 1.01.01.01.01.07

Revision/CIN: 1 TWR-96-049
Due Date: 9/30/99
ADS No: 1200
Schedule ID: SH9901034M
Scheduler: CR Riendeau

Title: NUCLEAR CRITICALITY SAFETY ISSUE RESOLVED (M-40-12)

Milestone Level:

[x] TPA M-40-12
[ ] DOE-HQ
[ ] DOE-FO
[ ] DOE-RL
[ ] *Contractor*

Deliverables

[ ] Report
[x] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:

[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:

Transmit letter to the DOE-RL Project Manager and Tank Farms Project Office documenting resolution of the nuclear criticality safety issue - 8/31/99. DOE-RL transmittal of safety issue resolution to Washington State Department of Ecology and the U.S. Environmental Protection Agency (EPA) - 9/30/99.

Description of what Constitutes Completion of the Commitment:

Resolve the potential for nuclear criticality safety issue by providing sufficient monitoring, analysis, and revision of appropriate safety documentation. These activities must address the various stages of waste transference and the possibility for changes in the potential for nuclear criticality incidents during waste transfers.

Acceptance Criteria:

Documentation that monitoring, analysis, and associated paperwork is in place to satisfy safety concerns by eliminating potential nuclear criticality incidents during waste transfers.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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ATTACHMENT 6.4-1

COST BASELINE BY YEAR

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(DOLLARS IN THOUSANDS)

TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PRJ2.W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993– FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.1 Mgmt. Systems	1200	EXP	29,095	22,444	19,958	17,673	16,986	16,655	15,708	16,172	18,548	0	173,239	0	0	173,239
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**29,095**	**22,444**	**19,958**	**17,673**	**16,986**	**16,655**	**15,708**	**16,172**	**18,548**	**0**	**173,239**	**0**	**0**	**173,239**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**29,095**	**22,444**	**19,958**	**17,673**	**16,986**	**16,655**	**15,708**	**16,172**	**18,548**	**0**	**173,239**	**0**	**0**	**173,239**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).

(2) Management Reserve; And Line Item Contingency Held By DOE–RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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ATTACHMENT 6.5-1

PERFORMANCE OBJECTIVES, MEASURES, AND FY 1997 EXPECTATIONS

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Attachment 6.5-1 Performance Objectives, Measures, and FY 1997 Expectations

There were none identified for this project at this time.

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ATTACHMENT 6.5-2

FY 1997 PERFORMANCE BASELINE SCHEDULE

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Activity ID	Activity Description	Early Start	Early Finish
1.1.1.1 - Management Systems			
Safety & Health			
A0430	PREPARE DRAFT OF TWRS VPP	01OCT96*	31MAR97
A0435	DEV OF DRAFT TWRS VPP APPLICATION		31MAR97
A0440	RESOLVE DOE COMMENTS ON TECH	01OCT96*	21NOV96
A0441	COMMENTS ON TECHNICAL BASIS		21NOV96
A0442	CRITICALITY SAFETY ISSUE	22NOV96	30SEP99
Environmental Compliance			
A0155	RCRA MARKING & MAPPING	01OCT96*	30SEP97
A0156	MAP & MARK CROSS-SITE AFER LINE		30SEP97
A0160	TWRS ENVIRONMENTAL RQTS MGMT	01OCT96*	27NOV96
A0161	TWRS ENVIRON RQTS MGMT PLAN		27NOV96
A0166	TWRS ENVIRON PRJ MGMT PLAN	01NOV96*	16DEC96
A0167	TWRS ENVIRON PRJ MGMT PLAN COMPLT		16DEC96
System Engineering			
A0600	ORSA: RETRIEVAL & DISPOSAL DECISION	01OCT96*	01AUG97
A0605	ORSA: ISSUE RPT RECOMMENDING 3		01AUG97
A0610	ORSA: TANK FARM OP IMPROV ANALYSIS	01OCT96*	15MAY97
A0615	ISSUE ORSA RPT FOR TK FARM OP		15MAY97
A0620	SCHEDULED SRR ACTIONS	01OCT96*	31JAN97
A0625	SRR ACTIONS COMPLETE		31JAN97
A0670	SIP: DEV/VALIDATE TWRS MASTER LOGIC	01OCT96*	31MAR97
A0675	COMPLT OF VALIDATED TWRS LOGIC TO		31MAR97
Program Control			
A0255	ADS PREPARATION	02JAN97*	30MAY97
A0260	TWRS ADSs SUBMITTED		30MAY97
A0270	MYPP PREP	03FEB97*	29AUG97
A0275	ISSUE ANNUAL UPDATE OF MYPP TO RL		29AUG97
Doe-RI			

FY97: OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | FY98 OCT N

DOE-HQ T11-97-190

DOE-RL T11-97-152

DOE-RL T11-97-158

DOE-RL T11-97-164

DOE-RL T11-97-172

DOE-RL T11-97-180

DOE-RL T11-97-188

DOE-RL T11-97-101

DOE-RL T11-97-186

DOE-RL T11-97-100

DOE-RL T11-97-163

Project Start 01JAN74 | Early Bar
Project Finish 30DEC04 | Progress Bar
Data Date 01OCT96
Plot Date 18SEP96
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-- TWRS --
1.1.1.1 MANAGEMENT SERVICES
PROJECT MASTER SCHEDULE

Sheet 1 of 3

Date	Revision	Checked/Approved

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Activity ID	Activity Description	Early Start	Early Finish
A0500	TWRS CRITICAL COST ANALYSES	01OCT96*	01APR97
A0505	CRITICAL COST ANALYSES ON TWRS		01APR97

FY97: OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP

FY98: OCT | N

DOE-RL T11-97-105

Sheet 2 of 2

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ATTACHMENT 6.5-3

COST BASELINE FOR EXECUTION YEAR BY FUND TYPE BY MONTH

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(DOLLARS IN THOUSANDS)

TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PR.I2.W 09/20/96

FY 1997 MYWP COST PROFILE BY MONTH *

WBS / TWRS PROJECT	ADS	FUND	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1.1.1.1 Mgmt. Systems	1200	EXP	2,895	2,400	2,427	2,732	2,371	2,624	2,437	2,304	2,273	2,275	2,203	2,154	29,095
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0
		GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**2,895**	**2,400**	**2,427**	**2,732**	**2,371**	**2,624**	**2,437**	**2,304**	**2,273**	**2,275**	**2,203**	**2,154**	**29,095**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**2,895**	**2,400**	**2,427**	**2,732**	**2,371**	**2,624**	**2,437**	**2,304**	**2,273**	**2,275**	**2,203**	**2,154**	**29,095**

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).

(2) Management Reserve; And Line Item Contingency Held By DOE – RL

(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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TANK WASTE REMEDIATION SYSTEM

COST BASELINE FOR EXECUTION YEAR (FY 1997)

BY PROGRAM BY COST ELEMENT BY MONTH (ALL FUND TYPES)*

(DOLLARS IN THOUSANDS) 35,329 TWRSR&A: MYP_PRCE.WK3

WBS/ADS TWRS PROJECT	C/E	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1.1.1.1														
Mgmt. Systems	0 Salaries	964	804	841	936	831	959	964	935	918	906	853	816	10,727
ADS 1200	1 Material	75	62	65	72	60	63	30	29	29	29	29	28	571
	2 Purch Svcs	922	763	709	830	717	758	565	504	490	505	504	490	7,757
	3 Chgs/Ot Contr	114	94	99	109	85	96	101	95	94	94	78	78	1,137
	4 Int'l Svcs	40	33	35	39	34	36	31	29	29	29	28	29	392
	5 Int'l Chgs	0	0	0	0	0	0	0	0	0	0	0	0	0
	6 BCS Rich	22	18	19	21	18	20	21	20	20	20	19	20	238
	7 OH & Adders	758	626	659	725	626	692	725	692	693	692	692	693	8,273
	8 Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – Mgmt Systems		2,895	2,400	2,427	2,732	2,371	2,624	2,437	2,304	2,273	2,275	2,203	2,154	29,095

[1] $8,273K in C/E 7 is related to Award Fee Budget
Splitout of adders for C/E 7 is not available in P3. All adders are incorporated in the other C/E's.
*Based upon P3 calendar month profile, NOT realized hours calendar.

7. Evaporator operations will be used to manage/optimize DST tank liquid volume. It is assumed that two campaigns are required per year. The evaporator is required to achieve waste volume reduction required to avoid the need for additional DST at a greatly increased cost and to provide DST space to support interim stabilization.

8. The 242-A Evaporator and AW & AP Tank Farm operations will be turned over to the Retrieval Project in 2005.

9. Reengineering will be applied to the project and implementation will culminate in FY 1997.

10. The TWRS Final Safety Analysis Report (FSAR) will be completed and implemented in FY 1997.

11. Evaporator run plans will be integrated with both the Transition 200 East to Controlled, Clean, and Stable Project and the Transition 200 West to Controlled, Clean, and Stable Project.

12. A package boiler system will be installed in FY 1997 to provide steam for the Evaporator operations.

13. Waste volume reduction estimates and goals will be achieved annually.

14. No GPP funding is provided in FY 1997 for support of the outyear requirements for retrieval and disposal.

15. The staging and feed tanks for the Privateer will be within the AP Tank Farm.

16. Upgrades to feed tanks will be completed in support of the privateer, retrieval, and disposal missions.

17. Tank Farm Operations and Retrieval waste volume projection assumptions are the same.

7.1.3 Technical Objectives

The primary objectives for the Waste Volume Management, Receipt, Transfer, and Evaporation Project are:

1. Concentrate low-heat generating liquid wastes through evaporation (242-A), thereby reducing the waste volume and number of DSTs required to store radioactive/hazardous liquid wastes.

2. Operate the AW & AP Tank Farms in compliance with all applicable standards and requirements.

3. Provide waste volume status and projections.

7.0 WASTE VOLUME MANAGEMENT, RECEIPT, TRANSFER, AND EVAPORATION [1.1.1.2.1.2]

- Release of waste tanks for Retrieval and eventual turnover to EM-40
- Turnover of all facilities to EM-40 for closure

7.1.6 Key Interfaces

7.1.6.1 Within TWRS

1.1.1.2.01.03	Transition 200 East to Controlled, Clean, and Stable
1.1.1.2.01.04	Transition 200 West to Controlled, Clean, and Stable
1.1.1.2.04	Characterization
1.1.1.3.01.03	Tank Farm Closure

7.1.6.2 Outside TWRS

The Evaporator will be receiving waste from N Reactor, K Basins, Purex and other Hanford facilities in support of site clean up.

7.2 WORK BREAKDOWN STRUCTURE

The following attachments are located in Section 7.6:

Attachment 7.2-1 WBS Hierarchy/RAM
Attachment 7.2-2 WBS Dictionary Sheet

7.3 SCHEDULE BASELINE

The following attachments are located in Section 7.6:

Attachment 7.3-1 Project Master Schedule
Attachment 7.3-2 Milestone Control Log
Attachment 7.3-3 Milestone Description Sheets

The milestones on the milestone control log are sorted by date and the page number of the corresponding milestone description sheet is provided.

7.4 COST BASELINE BY YEAR

The following attachment is located in Section 7.6:

Attachment 7.4-1 Cost Baseline by Year

7.0 WASTE VOLUME MANAGEMENT, RECEIPT, TRANSFER, AND EVAPORATION [WBS 1.1.1.2.1.2]

7.1 PROJECT SUMMARY

7.1.1 Project Mission/Overview

The project scope includes the Evaporator (242-A) facility, the AW-Tank Farm, and the AP-Tank Farm. The project mission is to manage the receipt, transfer, and evaporation of DST liquid volumes in a safe, environmentally sound and efficient manner to achieve the objectives of the Tank Waste Remediation System. Facilities and activities associated with this mission shall be conducted within the boundary of current Safety Analysis Reports, Interim Safety Basis, and environmental permits in a manner that ensures compliance with all federal, state and local regulations.

The primary areas of responsibility are project management, waste volume projections, maintenance, and operations of the 242-A Evaporator, maintenance and operations of the AW/AP tank farms, environmental engineering, training and procedures, and DST integrity assessments. The 242-A Evaporator is required for the evaporation of water from dilute waste and to support the existing facilities and processes to physically reduce the volume of radioactive liquid waste.

This project has a nominal life span of nine years ending in 2005 at which time it is planned for turnover to the Retrieval project and eventual turnover to EM-40 for closure.

7.1.2 Planning Assumptions

The Waste Volume Management, Receipt, Transfer, and Evaporation Project baseline was developed based on the following assumptions.

1. A systems engineering approach will be applied to all Tank Farm Operations Program activities.

2. Tank Farm Operations Program and utility and transfer systems shall be upgraded to current codes and standards to the extent practicable.

3. Upgrades to selected facilities and systems will be performed to meet mission requirements and achieve a cost-effective negotiated level of compliance.

4. Equipment and facilities will be restored to satisfy interim safe operations requirements.

5. The Waste Characterization Project (ADS 1130) will provide funding for sampling and analysis activities supporting evaporation feed characterization.

6. The fifth shift (training shift) will be required to maintain the identified qualifications of the operators while minimizing the overtime required and maximizing training effectiveness. Failure to maintain staffing for the fifth shift will result in missed training and increased overtime costs.

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7.1.4 Major Accomplishments

- Upgraded the 242-A Evaporator and restarted operations in FY 1994.
- Successfully completed four Evaporator campaigns since April, 1994 and achieved a waste volume reduction of 8.5 million gallons.
- Operated the Evaporator in support of the FY 1995 decision to not construct new tanks (cancellation of the Multi-Tank Facility [MWTF] resulted in a cost savings of $435 million.
- Operated the AW & AP Tank Farms and the 242-A Evaporator complex in compliance with environmental regulations.

7.1.5 Major Deliverables

7.1.5.1 FY 1997-1998

- Monthly project baseline reviews with RL
- Annual updates to the Multi-Year Work Plan
- Operation of the 242-A Evaporator and AW & AP Tank Farms
- Achievement of waste volume reduction goals in support of M-46-00 (DST Space Evaluation)
- Monthly operational waste volume projection method analysis and upgrade performance reviews
- Maintaining the safe and compliant operating configuration within the project
- Provide staging and feed tanks in AP Tank Farm for the Privateer
- Conduct DST integrity assessments

7.1.5.2 FY 1999-2005

- Five year plan and input to RL
- Maintain the safe and compliant operating configuration within the project
- Operation of the 242-A Evaporator and AW & AP Tank Farms
- Achievement of waste volume reduction goals in support of completion of M-46-00 (DST Space Evaluation)

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7.5 EXECUTION YEAR

The following attachments are located in Section 7.6:

Attachment 7.5-1 Performance Objectives, Measures, and FY 1997 Expectations
Attachment 7.5-2 FY 1997 Performance Baseline Schedule
Attachment 7.5-3 Cost Baseline for Execution Year by Fund Type by Month

7.6 ATTACHMENTS

This section contains the Work Breakdown, Schedule Baseline, Cost Baseline, and Execution Year exhibits for the Waste Volume Management, Receipt, Transfer, and Evaporation Project.

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ATTACHMENT 7.2-1

WBS HIERARCHY/RAM

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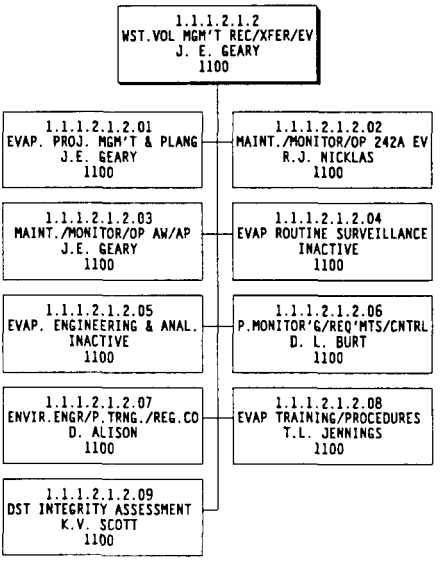
TWRS FY 1997 WORK BREAKDOWN STRUCTURE
WASTE VOLUME MANAGEMENT, RECEIPT, TRANSFER, AND EVAPORATION



Attachment 7.2-1 WBS Hierarchy/RAM

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ATTACHMENT 7.2-2

WBS DICTIONARY SHEET

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TANK WASTE REMEDIATION SYSTEM
WORK BREAKDOWN STRUCTURE DICTIONARY

1. PROGRAM/TITLE PARTICIPANT 1.1.1 Tank Waste Remediation System 1.1.1.2 Waste Storage 1.1.1.2.1 Tank Farm Operations		
2. WBS ELEMENT CODE/LEVEL 1.1.1.2.1.2 / V	3. WBS ELEMENT TITLE Waste Volume Management, Receipt, Transfer, and Evaporation	
3. CURRENT REV NO 1	4.EFFECTIVE REV DATE October 1, 1996	5. APPROVED CHANGES

ELEMENT DESCRIPTION

1. TECHNICAL BASES

a. Goals and Objectives

The functional product of the Waste Volume Management, Receipt, Transfer, and Evaporation Project of Tank Farm Operations is to concentrate waste through evaporation and to operate the adjacent tank farms.

Work scope planning and risk factors are expected to have only medium impacts to this activity. As infrastructure upgrades and restoration activities are completed and a final safety basis is achieved, it will transform into a low risk activity.

- Concentrate low-heat generating liquid wastes through evaporation (242-A), thus reducing the volume and the number of double-shell tanks required to store dangerous liquid wastes.
- Operate the AW/AP tank farms in compliance with all applicable standards and requirements.

This project consists of performing all of the functions required for evaporation of water from dilute waste and support to the facilities and processes. These functions are:

- Preventive maintenance,
- Corrective maintenance (routine and non-routine),
- Facility concentration operations including waste transfers to feed tanks,
- Routine surveillance monitoring,
- Health physics activities (radiological),
- Industrial hygiene and safety functions,
- Engineering and analysis (campaign run plans, trade studies, and analysis capability upgrades),
- Manage and control upgrades to facilities and infrastructure, and
- Enhance the safety of facility operations as well as prepare the facilities for the eventual turnover to Waste Disposal program.

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The Waste Volume Management, Receipt, Transfer, and Evaporation Project consists of performing the following major activities in support of the project mission:

- Technical Management and Administration

  -Project and Baseline Management
  -Utilities and Services
  -Training and Certification Program
  -Nuclear Safety Oversight
  -Configuration Management and Support
  -Quality Assurance/Control Support
  -Tank Farm Security Operations and Upgrades
  -Review/revise Tank Farm Operations and Administrative Procedures
  -Tank Farm Surveillance Database Maintenance and Management
  -OWVP Method Analysis and Upgrade

- Tank Farm Compliance and Corrective Activities

  -Double-shell Tank Integrity Assessments
  -Permitting and Regulatory Compliance
  -Radioactive/Hazardous Solid Waste Management
  -Environmental Compliance, Engineering, Analysis, and Assessments
  -Safety Envelope Definition and Implementation
  -Double-shell Tank Emergency Pumping Planning/Preparations
  -Special Disposal of Unusable/Abandoned Field and In-tank Equipment
  -Compliance Management and ALARA Support to Field Activities
  -OSR Implementation Including Necessary Upgrades
  -Criticality Engineering Upgrades and Safety Reviews
  -Surface Contamination Zone Reduction

- Tank Farm Retired Facilities

  -Transition Planning for Each Facility/System
  -Facility Preparation for Transfer to EM-40
  -Surveillance and Maintenance of Retired Facilities until Transfer to EM-40 is Accomplished
  -Safe Shutdown and Transfer to EM-40

Major End-Item Deliverables

- 242-A Evaporator Campaigns and achieve waste volume reduction goals.
- Complete M-46-00, Double-Shell Tank Space Evaluation.
- Complete Waste Volume Project and transfer to Retrieval.
- Complete turnover of AP-106 & 108 tanks to Privateer.
- Obtain Evaporator Part B Permit.
- See milestone log in Attachment 7.3-2 for level 5 milestones.

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2. STATEMENT OF WORK

Required activities over FY 1997:

- Perform scheduled component-based recall system, preventive maintenance, high-efficiency particulate air (filter) testing, and third party inspections.
- Corrective maintenance includes identifying deficiencies and fixing failed equipment in 242-A and AW/AP tank farms.
- Waste tank transfers, performing jumper changes, and pump removals as required.
- Radiological control performing personnel and work place surveys, monitor source checks, and PCM1B checks.
- Obtaining panel board/management control system surveillance data, condensate basin readings, vessel ventilation system readings, ion-exchange column readings, and canyon area ventilation surveillance data.
- Develop operating strategies/plans, process improvements, trending and review of operating data, monitoring process limits, ensuring technical accuracy, and process problem resolution.
- Upgrade the OWVP system.
- Develop annual Operating Waste Volume Projections (OWVP).
- Perform an assessment of each facility to determine its status and readiness for turnover to ER.
- Prepare and execute required work plan to complete the 242-A Evaporator facility's readiness for turnover to ER.
- Provide for all legally required surveillances of retired facilities until they have been accepted by the Environmental Restoration Program.
- Document formal turnover of retired facilities as required by the EM-40 Decontamination and Decommissioning Guidance Document.
- Develop activity-based cost estimates.
- Develop resource loaded schedules.
- Develop a preventive maintenance plan.
- Develop a corrective maintenance plan.
- Develop or update a FY97 project master schedule.
- Prepare monthly project status reports.

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Systems Engineering Function and Requirements:

- 4.2.1.1 Store Managed Tank Waste
- 4.2.1.3 Transfer Managed Tank Waste
- 4.2.1.4 Concentrate Waste

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ATTACHMENT 7.3-1

PROJECT MASTER SCHEDULE

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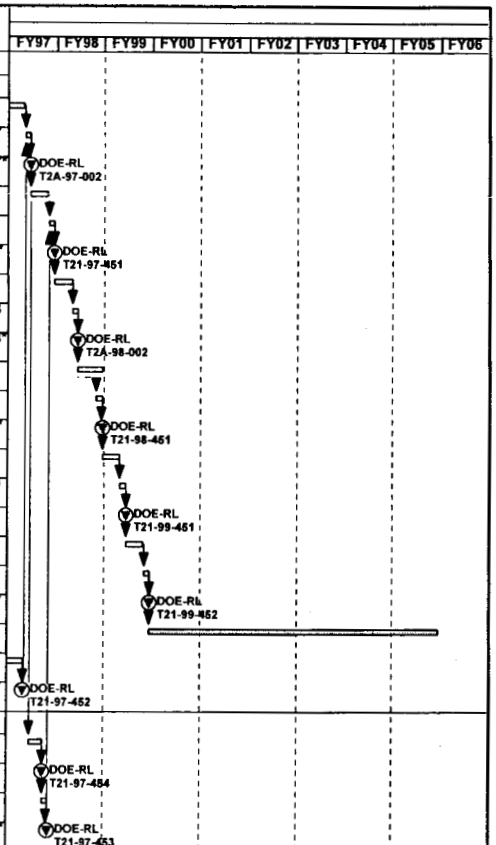
Activity ID	Activity Description	Early Start	Early Finish
1.1.1.2.01.02 - Waste Vol. Mgmt/Evap Project			
Double Shell Tank Space Recovery			
T1115	CAMPAIGN 97-1 OUTAGE	01OCT96*	31JAN97
T1125	CAMPAIGN 97-1	03FEB97*	14MAR97
T1130	COMPLETE CAMPAIGN 97-1		14MAR97*
T1135	CAMPAIGN 97-2 OUTAGE	17MAR97*	31JUL97
T1145	CAMPAIGN 97-2	04AUG97*	16SEP97
T1150	COMPLETE CAMPAIGN 97-2		16SEP97*
T1155	CAMPAIGN 98-1 OUTAGE	17SEP97*	02FEB98
T1165	CAMPAIGN 98-1	03FEB98*	13MAR98
T1170	COMPLETE CAMPAIGN 98-1		13MAR98*
T1175	CAMPAIGN 98-2 OUTAGE	16MAR98*	15SEP98
T1185	CAMPAIGN 98-2	03AUG98*	15SEP98
T1190	COMPLETE CAMPAIGN 98-2		15SEP98*
T1195	CAMPAIGN OUTAGE 99-1	16SEP98*	29JAN99
T1200	CAMPAIGN 99-1	01FEB99*	15MAR99
T1205	COMPLETE CAMPAIGN 99-1	16MAR99*	
T1210	CAMPAIGN OUTAGE 99-2	16MAR99*	30JUL99
T1215	CAMPAIGN 99-2	02AUG99*	15SEP99
T1220	COMPLETE CAMPAIGN 99-2		15SEP99*
T1225	2 EVAPORATOR CAMPAIGNS EACH YEAR	16SEP99*	15SEP05
T1230	REPLACE STEAM TURBINE W/ELECT BACK EXHAUSTER	01OCT96*	31JAN97
T1235	COMPLETE STEAM TURBINE/ELEC BACKUP EXHAUSTER		31JAN97*
242-A & AP/AW Tank Farm Operations			
T1240	INSTALL VALVE MANIFOLD SYSTEM IN AW-B VALVE PIT	17MAR97*	27JUN97
T1245	COMPLETE INSTL VLV MANIFOLD SYSTEM, AW-B VLV PIT		30JUN97*
T1250	INSTALL VALVE MANIFOLD SYSTEM IN AW-A VALVE PIT	01JUL97*	01AUG97
T1255	COMPLETE INSTL VLV MANIFOLD SYSTEM, AW-A VLV PIT		01AUG97*



Project Start 01JAN74 | Early Bar
Project Finish 30SEP64 | Progress Bar
Data Date 01OCT95
Plot Date 19SEP96

TWRS
1.1.1.2.01.02 WASTE VOLUME MGMT
PROJECT MASTER SCHEDULE

Sheet 1 of 3

9/23/96

Date	Revision	Checked	Approved

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Activity ID	Activity Description	Early Start	Early Finish
T1260	TRANSFER OF AP TF TANKS TO PRIVATEER COMPLETE		30SEP98*
Waste Volume Management			
T1265	WASTE VOLUME MANAGEMENT/OCT TO NOV 97	01OCT96*	27NOV96
T1270	M-46-01C CONCURRENCE OF ADDITL TANK ACQUISITION		27NOV96*
T1275	WASTE VOLUME MANAGEMENT/DEC TO SEPT 97	02DEC96*	30SEP97
T1280	M-46-00D DOUBLE -SHELL TANK SPACE EVALUATION		30SEP97*
T1285	WASTE VOLUME MANAGEMENT/OCT TO NOV 98	01OCT97*	26NOV97
T1290	M-46-01D CONCURRENCE OF ADDITL TNK ACQUISITION		26NOV97*
T1295	WASTE VOLUME MANAGEMENT/DEC TO SEPT 98	01DEC97*	30SEP98
T1300	M-46-00E DOUBLE -SHELL TANK SPACE EVALUATION		30SEP98
T1305	WASTE VOLUME MANAGEMENT/OCT TO NOV 99	01OCT98*	30NOV98
T1310	M-46-01E CONCURRENCE OF ADDITL TNK ACQUISITION		30NOV98*
T1315	WASTE VOLUME MANAGEMENT/DEC TO SEPT 99	01DEC98*	30SEP99
T1320	M-46-00F DOUBLE -SHELL TANK SPACE EVALUATION		30SEP99*
T1325	WASTE VOLUME MANAGEMENT OCT TO NOV 2000	01OCT99*	30NOV99
T1335	WASTE VOLUME MANAGEMENT/DEC TO SEPT 2005	01OCT99*	03AUG05
T1350	ASSESSMENT PLANS & CAP DST INTEGRITY ASSESSMENT	01OCT96*	30SEP97
T1352	ENGINEERING SERVICES, DST INTEGRITY ASSESSMENT	01OCT96*	30SEP97
T1354	DST UT WALL EXAMINATION TRIAL	01OCT96*	27NOV96
T1355	COMPL DST, UT WALL EXAMINATION TRIAL		27NOV96*
T1360	1st TANK WALL UT EXAMINATION SERVICES	02DEC96*	29AUG97
T1365	COMPLETE FIRST TANK WALL UT EXAMINATION		29AUG97*
T1370	2nd TANK WALL & 1st BOTTOM UT EXAMINATION SERV	07APR97*	30SEP97
T1375	COMPLETE SECOND TANK WALL & FIRST BOTTOM UT EXAM		30SEP97*
T1380	TANK WALL CLEANING SERVICES, DST INTEG	03MAR97*	30SEP97
T1385	EXAMINATION & MOCKUP MOVEMENT SUPT, DST UT SERV	01OCT96*	30SEP97
T1390	DOUBLE SHELL TANK VISUAL EXAMINATIONS	01OCT96*	31JUL97
T1395	COMPLETE 1st DST CAMERA EXAMINATIONS		31JUL97*
T1396	COMPLETE 2nd DST CAMERA EXAMINATIONS		31JUL97*
T1400	ASSESSMENT PLANS & CAP DST INTEGRITY ASSESSMENT	01OCT97*	30SEP98

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Activity ID	Activity Description	Early Start	Early Finish
T1405	ENGINEERING SERVICES; DST INTEGRITY ASSESSMENT	01OCT97*	30SEP98
T1410	4 UT WALL & BOTTOME EXAMINATIONS SERVICES	01OCT97*	30SEP98
T1415	COMPL 4 UT WALL & BOTTOME EXAMINATIONS SERVICES		30SEP98*
T1420	ISSUE DST INTEGRITY ASSESSEMENT REPORT	01OCT97*	30SEP98
T1425	COMPLETE ISSUE DST INTEGRITY ASSESSEMENT REPORT		30SEP98*
T1430	PERFORM INTERNAL VISUAL EXAMINATION OF TWO DST's	01OCT97*	30SEP98
T1435	COMPLETE 1 DST VISUAL EXAMINATIONS		30SEP98*
T1440	ASSESSMENT PLANS & CAP `DST INTEGRITY ASSESSMENT	01OCT98*	30SEP99
T1445	EVALUATE DESIGN OF WASTE TRANSFER SYSTEM	01OCT98*	30SEP99
T1450	COMPL EVALUATE DESIGN OF WASTE TRANSFER SYSTEM		30SEP99*
T1455	EXAMINATION OF WASTE TRANSFER FACILITIES	01OCT98*	30SEP99
T1460	COMPLETE EXAMINATION OF WASTE TRANSFER FACILITIE		30SEP99*
T1465	ISSUE WASTE XFER FACILITY INTEGRITY ASSESSMT RPT	01MAR99*	28SEP99
T1470	COMPL WASTE XFER FACILITY INTEGRITY ASSESSMT RPT		30SEP99*
T1475	242-A INTEGRITY RE-ASSESSMENT	04JAN99*	30SEP99
T1480	PERFORM INTERNAL VISUAL EXAMINATION OF TWO DST's	01OCT98*	30SEP99
T1485	COMPLETE 1 DST VISUAL EXAMINATIONS		30SEP99*
T1490	ULTRASONIC EXAMINATIONS AS NEEDED	01OCT99*	30SEP05

Sheet 3 of 3

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ATTACHMENT 7.3-2

MILESTONE CONTROL LOG

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WESTINGHOUSE HANFORD COMPANY
TANK WASTE REMEDIATION SYSTEM DIVISION
Waste Volume Mgt, Receipt, Transfer, & Evaporation
Selections: 1.01.01.02.01.02

Attachment 7.3-2 Milestone Control Log (Page 1)

Milestone Number	Type	WBS	Title	Due Date	Forecast Date	Completion Date	Remarks
T21-97-455	MAJOR-RL	1.01.01.02.01.02.0009	DST ULTRASONIC WALL EXAMINATION TRIAL	11/27/96	See page 5		
T2C-97-714	TPA-Interim	1.01.01.02.01.02.0001	CONCURRENCE OF ADDITIONAL TANK ACQUISITION (M-46-01C)	11/30/96	See page 28		
T21-97-452	MAJOR-RL	1.01.01.02.01.02.0002	COMPLETE STEAM TURBINE REPLACEMENT WITH ELECTRIC BACKUP FAN	1/31/97	See page 2		
T2A-97-002	MAJOR-RL	1.01.01.02.01.02.0002	COMPLETE CAMPAIGN 97-1	3/14/97	See page 21		
T21-97-454	MAJOR-RL	1.01.01.02.01.02.0003	COMPLETE VALVE MANIFOLD SYSTEM IN AW-B VALVE PIT (TWR4.1.6)	6/30/97	See page 4		
T21-97-456	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE 1ST DST EXAMINATION	7/31/97	See page 6		
T21-97-461	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE 2ND DST EXAMINATION	7/31/97	See page 8		
T21-97-453	MAJOR-RL	1.01.01.02.01.02.0003	COMPLETE VALVE MANIFOLD SYSTEM IN AW-A VALVE PIT	8/1/97	See page 3		
T21-97-459	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE FIRST TANK WALL UT EXAMINATION	8/29/97	See page 7		
T21-97-451	MAJOR-RL	1.01.01.02.01.02.0002	COMPLETE CAMPAIGN 97-2	9/16/97	See page 1		
T2A-95-113	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE 2ND TANK WALL AND 1ST BOTTOM UT EXAMINATION	9/30/97	See page 20		
T2A-97-106	TPA-Major	1.01.01.02.01.02.0003	DOUBLE-SHELL TANK SPACE EVALUATION (M-46-00D) (TWR4.1.3)	9/30/97	See page 22		

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WESTINGHOUSE HANFORD COMPANY
TANK WASTE REMEDIATION SYSTEM DIVISION
Waste Volume Mgt, Receipt, Transfer, & Evaporation
Selections: 1.01.01.02.01.02

Milestone Number	Type	WBS	Title	Due Date	Forecast Date	Completion Date	Remarks
T2A-98-109	TPA-Interim	1.01.01.02.01.02.0001	CONCURRENCE OF ADDITIONAL TANK ACQUISITION (M-46-01D)	11/30/97	See page 25		
T2A-98-002	MAJOR-RL	1.01.01.02.01.02.0002	COMPLETE 98-1 CAMPAIGN	3/13/98	See page 23		
T21-98-451	MAJOR-RL	1.01.01.02.01.02.0002	COMPLETE 98-2 CAMPAIGN	9/15/98	See page 9		
T2A-98-108	TPA-Major	1.01.01.02.01.02.0003	DOUBLE-SHELL TANK SPACE EVALUATION (M-46-00E)	9/30/98	See page 24		
T21-98-454	MAJOR-RL	1.01.01.02.01.02.0003	TRANSFER OF AP TF TANKS TO PRIVATEER COMPLETE	9/30/98	See page 10		
T21-98-455	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE FOUR (4) UT WALL AND BOTTOM EXAMINATION SERVICES	9/30/98	See page 11		
T21-98-456	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE INTERNAL VISUAL EXAMINATION OF TWO DSTS	9/30/98	See page 12		
T21-98-457	MAJOR-RL	1.01.01.02.01.02.0009	ISSUE WASTE TRANSFER FACILITY INTEGRITY ASSESSMENT	9/30/98	See page 13		
T2A-99-106	TPA-Interim	1.01.01.02.01.02.0001	CONCURRENCE OF ADDITIONAL TANK ACQUISITION (M-46-01E)	11/30/98	See page 27		
T21-99-451	MAJOR-RL	1.01.01.02.01.02.0002	COMPLETE CAMPAIGN 99-1	3/16/99	See page 14		
T21-99-452	MAJOR-RL	1.01.01.02.01.02.0002	COMPLETE CAMPAIGN 99-2	9/15/99	See page 15		
T2A-99-105	TPA-Major	1.01.01.02.01.02.0003	DOUBLE-SHELL TANK SPACE EVALUATION (M-46-00F)	9/30/99	See page 26		
T21-99-456	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE EVALUATION OF DESIGN OF WASTE TRANSFER FACILITIY	9/30/99	See page 16		
T21-99-457	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE EXAMINATION OF WASTE TRANSFER FACILITIES	9/30/99	See page 17		

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Milestone Number	Type	WBS	Title	Due Date	Forecast Date	Completion Date	Remarks
T21-99-458	MAJOR-RL	1.01.01.02.01.02.0009	PERFORM INTERNAL VISUAL EXAMINATION OF TWO DSTS	9/30/99	See page 18		
T21-99-459	MAJOR-RL	1.01.01.02.01.02.0009	COMPLETE WASTE TRANSFER FACILITY INTEGRITY ASSESSMENT REPORT	9/30/99	See page 19		

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ATTACHMENT 7.3-3

MILESTONE DESCRIPTION SHEETS

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-97-451
WBS Number 1.01.01.02.01.02.0002

Title: COMPLETE CAMPAIGN 97-2

Revision/CIN: 0
Due Date: 9/16/97
ADS No: 1100-0
Schedule ID: A137D23
Scheduler: DE Hall

Milestone Level:	**Deliverables**	**Addressed To:**
[ ] TPA	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] *Letter*	[ ] DOE-RL
[ ] DOE-FO	[ ] Drawing	[x] Other (Specify)
[x] DOE-RL	[x] Other (Specify)	M&I Contractor
[ ] Contractor	Process Memo	

Description of this Commitment:
Complete 242-A Evaporator Campaign 97-2 including administration, RCRA and process control sampling and laboratory analysis, Health Physics, and process and systems engineering.

Description of what Constitutes Completion of the Commitment:
Campaign 97-2 completion will be documented by the issue of an Engineerng Process Control Memo providing direction to Operations to secure and flush the facility. The campaign is complete when slurry has been drained frorn the processing vessel.

Acceptance Criteria:
Completion of campaign 97-2 as indicated by Engineering Process Control Memo directing that the facility be secured and flushed. Completion of the campaign will be when waste processing is complete and the vessel is drained of slurry.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-97-452
WBS Number 1.01.01.02.01.02.0002

Title: COMPLETE STEAM TURBINE REPLACEMENT WITH ELECTRIC BACKUP FAN

Revision/CIN: 0
Due Date: 1/31/97
ADS No: 1100-0
Schedule ID: A137G13
Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[x] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[ ] DOE-RL
[x] Other (Specify) Westinghouse Hanford

Description of this Commitment:
Procure, install, and test an electric driven fan replacement of the steam turbine driven fan at the 242-A Evaporator

Description of what Constitutes Completion of the Commitment:
Install electric driven fan replacement of the 242-A Evaporator steam turbine driven fan, satisfactory acceptance and operational testing and turnover to Operations.

Acceptance Criteria:
Satisfactory completion of acceptance and operational testing as documented in turnover letter.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Rev. 0

Milestone Control No T21-97-453
WBS Number 1.01.01.02.01.02.0003

Revision/CIN: 0
Due Date: 8/1/97
ADS No: 1100-0
Schedule ID: A147B32
Scheduler: DE Hall

Title: COMPLETE VALVE MANIFOLD SYSTEM IN AW-A VALVE PIT

Milestone Level:	**Deliverables**	**Addressed To:**
[ ] TPA	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[x] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
Remove existing flexible and rigid jumpers from AW-A valve pit and install a new valve manifold assembly and a new cover block.

Description of what Constitutes Completion of the Commitment:
A new valve manifold and cover block installed in AW-A valve pit.

Acceptance Criteria:
AW-A valve manifold installed and operational testing complete and accepted for use by Operations.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-97-454
WBS Number 1.01.01.02.01.02.0003

Title: COMPLETE VALVE MANIFOLD SYSTEM IN AW-B VALVE PIT (TWR4.1.6)

Revision/CIN: 0
Due Date: 6/30/97
ADS No: 1100-0
Schedule ID: A174B28

Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[x] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Remove existing flexible and rigid jumpers from AW-B valve pit and install a new valve manifold assembly and a new cover block.

Description of what Constitutes Completion of the Commitment:
A new valve manifold and cover block installed in AW-B valve pit.

Acceptance Criteria:
The AW-B jumper manifold must be correctly installed, field tested, 'as-built' drawings updated, and formally accepted by the AW Tank Farm operations contractor. As a minimum, operational test and acceptance documentation shall be formally submitted to the appropriate RL TWRS project manager by July 31, 1997.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-97-455
WBS Number 1.01.01.02.01.02.0009

Title: DST ULTRASONIC WALL EXAMINATION TRIAL

Revision/CIN: 0
Due Date: 11/27/96
ADS No: 1100-0
Schedule ID: A227B17
Scheduler: DE HALL

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
A vendor will supply ultrasonic testing services on one tank by accessing one riser. The examination will be limited to detection of wall thinning and pitting on a five inch wide by 35 foot long strip of the primary and secondary tank walls. No wall cleaning will be performed.

Description of what Constitutes Completion of the Commitment:
The vendor's inspection and a WHC evaluation of the results constitutues completion of this commitment.

Acceptance Criteria:
The report and evaluation will determine if tank wall cleaning is needed to perform a successful ultrasonic examination of the tank.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Rev. 0

Milestone Control No T21-97-456
WBS Number 1.01.01.02.01.02.0009

Revision/CIN: 0
Due Date: 7/31/97
ADS No: 1100-0
Schedule ID: A227C13
Scheduler: DE Hall

Title: COMPLETE 1ST DST EXAMINATION

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
One double-shell tank will be examined on the interior surface for evidence of tank wall degradation. A remote camera with sufficient lighting and magnification to reveal gross pitting and other localized degradtion will be deployed.

Description of what Constitutes Completion of the Commitment:
A supporting document of the inspection results.

Acceptance Criteria:
An inspection report written in sufficient detail to describe the inspection findings and support any recommendations.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-97-459
WBS Number 1.01.01.02.01.02.0009

Title: COMPLETE FIRST TANK WALL UT EXAMINATION

Revision/CIN: 0
Due Date: 8/29/97
ADS No: 1100-0
Schedule ID: A227B21
Scheduler: DE Hall

Milestone Level:	**Deliverables**	***Addressed To:***
[ ] TPA	[x] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
The vendor will perform an ultrasonic examination of a DST wall to detect wall thinning, pits, and cracks. Access to the tank will be provided through one 24-inch riser. Th extent of the examination shall be a 20-inch wide by 35-foot long strip of the primary tank wall. Tank wall cleaning will be performed if needed to obtain the required ultrasonic data. A report will be issued to describe the findings and any recommended actions.

Description of what Constitutes Completion of the Commitment:
A supporting document will be issued that contains the vendor inspection report and an evaluation of the significance of the findings. The report will recommend the next tank to be examined.

Acceptance Criteria:
The report will be reviewed by the Tank Structural Integrity Panel or an equivalent group of experts before it issued.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-97-461
WBS Number 1.01.01.02.01.02.0009
Title: COMPLETE 2ND DST EXAMINATION

Revision/CIN: 0
Due Date: 7/31/97
ADS No: 1100-0
Schedule ID: A227C15
Scheduler: DE Hall

Milestone Level:	Deliverables	Addressed To:
[ ] TPA	[x] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
One double shell tank will be examined on the interior surface for evidence of tank wall degradation. A remote camera with sufficient lighting and magnification to reveal gross piting and other localized degradtion will be deployed.

Description of what Constitutes Completion of the Commitment:
A supporting document of the inspection results.

Acceptance Criteria:
An inspection report written in sufficient detail to describe the inspection findings and support any recommendation.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-98-451
WBS Number 1.01.01.02.01.02.0002

Title: COMPLETE 98-2 CAMPAIGN

Revision/CIN: 0
Due Date: 9/15/98
ADS No: 1100-0
Schedule ID: A138D19
Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify)
Process Memo

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Complete 242-A Evaporator Outage and Campaign 98-2, including administration, RCRA and process control sampling and laboratory analysis, Health Physics, and process and systems engineering.

Description of what Constitutes Completion of the Commitment:
Campaign 98-2 completion will be documented by the issue of an Engineering Process Control Memo provide direction to Operations to secure and flush the facility.

Acceptance Criteria:
Completion of Campaign 98-2 as indicated by issuance of Engineering Process Control Memo directing that the facility be secured and flushed.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-98-454
WBS Number 1.01.01.02.01.02.0003

Title: TRANSFER OF AP TF TANKS TO PRIVATEER COMPLETE

Revision/CIN: 0
Due Date: 9/30/98
ADS No: 1100-0
Schedule ID: A148A13
Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[x] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Transfer of AP Tank Farm to privateer.

Description of what Constitutes Completion of the Commitment:

Acceptance Criteria:

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-98-455
WBS Number 1.01.01.02.01.02.0009

Title: COMPLETE FOUR (4) UT WALL AND BOTTOM EXAMINATION SERVICES

Revision/CIN: 0
Due Date: 9/30/98
ADS No: 1100-0
Schedule ID: A228B13
Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
The vendor will perform an altrasonic examination of 4 DST's to detect wall thinnning, pits, and cracks. Tank wall cleaning will be performed if needed to obtain the required altrasonic data.

Description of what Constitutes Completion of the Commitment:
A supporting document will be issued that contains the vendor inspection report and an evaluation of the significance of the findings.

Acceptance Criteria:
Report will be reviewed by the Tank Structural Integrity Panel or an equivalent group of experts before issuance.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-98-456
WBS Number 1.01.01.02.01.02.0009

Title: COMPLETE INTERNAL VISUAL EXAMINATION OF TWO DSTs

Revision/CIN: 0
Due Date: 9/30/98
ADS No: 1100-0
Schedule ID: A228C13
Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Two double shell tanks will be examinaed on the interior surface for evidence of tank wall degration. A remote camera with sufficient lighting and mgnification to reveal gross pitting and other localized degradtion will be deployed.

Description of what Constitutes Completion of the Commitment:
A supporting document of the inspection results

Acceptance Criteria:
An inspection report written in sufficien6t detail to describe the inspection findings and support any recommendations.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-98-457
WBS Number 1.01.01.02.01.02.0009

Title: ISSUE WASTE TRANSFER FACILITY INTEGRITY ASSESSMENT

Revision/CIN: 0
Due Date: 9/30/98
ADS No: 1100-0
Schedule ID: A228B19
Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
An integrity assessment of the waste transfer facilitiy will be conducted.

Description of what Constitutes Completion of the Commitment:
A supporting document will be issued describing findings and recommendations

Acceptance Criteria:
Report will be reviewed by the Tank Structural Integrity Panel or equivalent group of experts before release.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Rev. 0

Milestone Control No T21-99-451
WBS Number 1.01.01.02.01.02.0002

Title: COMPLETE CAMPAIGN 99-1

Revision/CIN: 0
Due Date: 3/16/99
ADS No: 1100-0
Schedule ID: A139B17
Scheduler: DE Hall

Milestone Level:

[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables

[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify)
Process Memo

Addressed To:

[ ] DOE-HQ
[ ] DOE-RL
[x] Other (Specify)
Tank Farms
Operations

Description of this Commitment:
Complete 242-A Evaporator Outage and Campaign 99-1, including administration, RCRA and process control sampling and laboratory analysis, Health Physics, and process and systems engineering.

Description of what Constitutes Completion of the Commitment:
Campaign 97-1 completion will be documented by the issue of an Engineering Process Control Memo provide direction to Operations to secure and flush the facility.

Acceptance Criteria:
Completion of Campaign 99-1 as indicated by issuance of Engineering Process Control Memo directing that the facility be secured and flushed.

MDS APPROVAL	COMPLETION APPROVAL
	Date Milestone Was Completed
WHC Responsible Manager/Date	WHC Responsible Manager/Date
DOE Manager/Date	DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-99-452
WBS Number 1.01.01.02.01.02.0002

Title: COMPLETE CAMPAIGN 99-2

Revision/CIN: 0
Due Date: 9/15/99
ADS No: 1100-0
Schedule ID: A139D23
Scheduler: DE Hall

Milestone Level:

[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables

[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify)
Process Memo

Addressed To:

[ ] DOE-HQ
[ ] DOE-RL
[x] Other (Specify)
Operations

Description of this Commitment:

Complete 242-A Evaporator Outage and Campaign 99-2 including administration, RCRA and process control sampling and laboratory analysis, Health Physics, and process and systems engineering.

Description of what Constitutes Completion of the Commitment:

Campaign 99-2 completion will be documented by the issue of an Engineering Process Control Memo provide direction to Operations to secure and flush the facility.

Acceptance Criteria:

Completion of Campaign 99-2 as indicated by issuance of Engineering Process Control Memo directing that the facility be secured and flushed.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Rev. 0

Milestone Control No T21-99-456
WBS Number 1.01.01.02.01.02.0009

Revision/CIN: 0
Due Date: 9/30/99
ADS No: 1100-0
Schedule ID: A229A15
Scheduler: DE Hall

Title: COMPLETE EVALUATION OF DESIGN OF WASTE TRANSFER FACILITIY

Milestone Level:

[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables

[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:

[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Evaluation of the design for the waste transfer facility

Description of what Constitutes Completion of the Commitment:
Report issued with findings and recommendations for the design of the waste transfer facility

Acceptance Criteria:
Evaluation will determine acceptability of design.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-99-457
WBS Number 1.01.01.02.01.02.0009

Revision/CIN: 0
Due Date: 9/30/99
ADS No: 1100-0

Title: COMPLETE EXAMINATION OF WASTE TRANSFER FACILITIES

Schedule ID: A229B13

Scheduler: DE Hall

Milestone Level:	**Deliverables**	**Addressed To:**
[ ] TPA	[x] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
An examination will be conducted of the waste transfer facilities

Description of what Constitutes Completion of the Commitment:
Issuance of report with findings from the examination

Acceptance Criteria:
Report written in sufficient detail to describe examination findings and to support recommendations

MDS APPROVAL	COMPLETION APPROVAL
	Date Milestone Was Completed
WHC Responsible Manager/Date	WHC Responsible Manager/Date
DOE Manager/Date	DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-99-458
WBS Number 1.01.01.02.01.02.0009

Title: PERFORM INTERNAL VISUAL EXAMINATION OF TWO DSTs

Revision/CIN: 0
Due Date: 9/30/99
ADS No: 1100-0
Schedule ID: A229B17

Scheduler: DE Hall

Milestone Level:

[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables

[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:

[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Two double-shell tanks will be exmained on the interior surface for evidence of tank wall degradation by remote camera.

Description of what Constitutes Completion of the Commitment:
A supporting document of the inspection results

Acceptance Criteria:
An isnpection report wirtten in sufficient detail to describe the inspection findings and support any recommendations.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T21-99-459
WBS Number 1.01.01.02.01.02.0009

Revision/CIN: 0
Due Date: 9/30/99
ADS No: 1100-0
Schedule ID: A229C13

Title: COMPLETE WASTE TRANSFER FACILITY INTEGRITY ASSESSMENT REPORT

Scheduler: DE HaLL

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] *Contractor*

Deliverables
[x] *Report*
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
integrity assessment report will be written for the waste transfer facility

Description of what Constitutes Completion of the Commitment:
issuance of supporting document with findings and recommendations

Acceptance Criteria:
A report written in sufficient detail to describe the assesesments findings and recommendations.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2A-95-113
WBS Number 1.01.01.02.01.02.0009

Revision/CIN: 1 TWR-97-001
Due Date: 9/30/97
ADS No: 1100

Title: COMPLETE 2ND TANK WALL AND 1ST BOTTOM UT EXAMINATION

Schedule ID: A227B25

Scheduler: DE Hall

Milestone Level:	**Deliverables**	**Addressed To:**
[ ] TPA	[x] Report	[ ] DOE-HQ
[ ] DOE-HQ	[ ] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[x] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
A vendor will perform an ultrasonic examination of a DST wall and tank bottom to detect wall thinning, pits, and cracks. Access to the tank will be provided through one 24-inch riser. The extent of the examination shall be a 20-inch wide by 35-foot long strip of the primary tank wall. The tank bottom shall be examined at eight air slots. Tank wall and bottom cleaning will be performed if needed to obtain the required ultrasonic data. This milestone completed the second tank wall examination and the first tank bottom examination.

Description of what Constitutes Completion of the Commitment:
A report will be issued to describe the findings and any recommended actions.

Acceptance Criteria:
A supporting document will be issued that contains the vendor inspections report and An evaluation of the significance of the findings. The report will recommend the next tank to be examined. The report will be reviewed by the Tank Structural Integrity Panel or an equivalent group of experts before it is issued.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2A-97-002
WBS Number 1.01.01.02.01.02.0002

Title: COMPLETE CAMPAIGN 97-1

Revision/CIN: 1 TWR-97-001
Due Date: 3/14/97
ADS No: 1100-0-NA
Schedule ID: A137B17
Scheduler: DE Hall

Milestone Level:
[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify) Process Control Memo

Addressed To:
[ ] DOE-HQ
[ ] DOE-RL
[x] Other (Specify) M&I Contractor

Description of this Commitment:
Complete 242-A Evaporator Campaign 97-1, including administration, RCRA and process control sampling and laboratory analysis, Health Physics, and process and systems engineering.

Description of what Constitutes Completion of the Commitment:
Campaign 97-1 completion will be documented by the issue of an Engineering Process Control Memo provide direction to Operations to secure and flush the facility. The campaign is complete when slurry has been drained from the processing vessel.

Acceptance Criteria:
Completion of campaign 97-1 as indicated by Engineering Process Control Memo directing that the facility be secured and flushed. Completion of the campaign will be when waste processing is complete and the vessel is drained of slurry.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2A-97-106
WBS Number 1.01.01.02.01.02.0003

Title: DOUBLE-SHELL TANK SPACE EVALUATION (M-46-00D) (TWR4.1.3)

Revision/CIN: 0
Due Date: 9/30/97
ADS No: 1100
Schedule ID: A147c13
Scheduler: DE Hall

Milestone Level:

[x] TPA M-46-00D
[ ] DOE-HQ
[ ] DOE-FO
[ ] DOE-RL
[ ] Contractor

Deliverables

[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:

[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:

Prepare Operational Waste Volume Projection (OWVP), as required by TPA Milestone M-46-00D, for fiscal year 1997.

Description of what Constitutes Completion of the Commitment:

Project identifies future tank volume additions and reductions and evaluates the impact relative to tank capacity. Release of OWVP Supporting Document Rev. 23 meeting DST Operations approval.

Acceptance Criteria:

The report must be formally submitted by the performing contractor and received by the appropriate RL TWRS project manager by August 31, 1997. Prior to formal submittal of the report, all appropriate contractor reviews shall have occurred and comments incorporated. Format and scope of the report shall be similar to past OWVP reports and shall include a summary recommendation regarding the construction of any new double-shell storage tanks and any appropriate measures to take in the efficient management of DST waste volumes.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Rev. 1

Milestone Control No T2A-98-002
WBS Number 1.01.01.02.01.02.0002

Title: COMPLETE 98-1 CAMPAIGN

Revision/CIN: 1 TWR-97-001
Due Date: 3/13/98
ADS No: 1100-0-NA
Schedule ID: A138B17
Scheduler: DE Hall

Milestone Level:

[ ] TPA
[ ] DOE-HQ
[ ] DOE-FO
[x] DOE-RL
[ ] Contractor

Deliverables

[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify)
Status
Integrated

Addressed To:

[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:

Complete 242-A Evaporator Outage and Campaign 98-1, including administration, RCRA and process control sampling and laboratory analysis, Health Physics, and process and systems engineering.

Description of what Constitutes Completion of the Commitment:

Campaign 98-1 completion will be documented by the issue of an Engineering Process Control Memo provide direction to Operations to secure and flush the facility.
Campaign complete when waste processing is finished per the final process memo and the vessel is drained of slurry.

Acceptance Criteria:

Waste processing is finished per the final process memo and the vessel is drained of slurry.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2A-98-108
WBS Number 1.01.01.02.01.02.0003

Title: DOUBLE-SHELL TANK SPACE EVALUATION (M-46-00E)

Revision/CIN: 0
Due Date: 9/30/98
ADS No: 1100
Schedule ID: A148c12
Scheduler: DE Hall

Milestone Level:
[x] TPA M-46-00E
[ ] DOE-HQ
[ ] DOE-FO
[ ] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify) Response to TPA Milestone

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
This activity prepares the operational waste volume projection, required per TPA milesone M-46-00E, for fiscal year 1998.

Description of what Constitutes Completion of the Commitment:
This project identifies tank space needs and projected additions.

Acceptance Criteria:
The operation waste volume projection will be approved in accordance with policies and procedures.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2A-98-109
WBS Number 1.01.01.02.01.02.0001

Title: CONCURRENCE OF ADDITIONAL TANK ACQUISITION (M-46-01D)

Revision/CIN: 0
Due Date: 11/30/97
ADS No: 1100
Schedule ID: A128A15
Scheduler: DE Hall

Milestone Level:	**Deliverables**	**Addressed To:**
[x] TPA M-46-01D	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[x] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[ ] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
Issue a letter which includes plans of additional tank acquisition, to support TPA Milestone M-46- 01. The contents of the letter will be based on the waste tank volume projections.

Description of what Constitutes Completion of the Commitment:
Issuance of a letter to DOE-RL including a basis for the conclusion of tank acquisition.

Acceptance Criteria:
Approved letter to DOE with subsequent transmittal to Dept. of Ecology.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2A-99-105
WBS Number 1.01.01.02.01.02.0003

Title: DOUBLE-SHELL TANK SPACE EVALUATION (M-46-00F)

Revision/CIN: 0
Due Date: 9/30/99
ADS No: 1100
Schedule ID: A149C13
Scheduler: DE Hall

Milestone Level:
[x] TPA M-46-00F
[ ] DOE-HQ
[ ] DOE-FO
[ ] DOE-RL
[ ] Contractor

Deliverables
[x] Report
[ ] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Prepare Operational Waste Volume Projection (OWVP), as required by TPA Milestone M-46-00F, for fiscal year 1999.

Description of what Constitutes Completion of the Commitment:
Project identifies future tank volume additions and reductions and evalutes the impact relative to tank capacity.

Acceptance Criteria:
Release of OWVP Supporting Document Rev. 23.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T2A-99-106
WBS Number 1.01.01.02.01.02.0001

Title: CONCURRENCE OF ADDITIONAL TANK ACQUISITION (M-46-01E)

Revision/CIN: 0
Due Date: 11/30/98
ADS No: 1100
Schedule ID: A128A15
Scheduler: DE Hall

Milestone Level:

[x] TPA M-46-01E
[ ] DOE-HQ
[ ] DOE-FO
[ ] DOE-RL
[ ] Contractor

Deliverables

[ ] Report
[x] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:

[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Issue a letter which includes plans of additional tank acquisition, to support TPA Milestone M-46-01. The contents of the letter will be based on the waste tank volume projections.

Description of what Constitutes Completion of the Commitment:
Issuance of a letter to DOE-RL including a basis for the conclusion of tank acquisition.

Acceptance Criteria:
Approved letter to DOE with subsequent transmittal to Dept. of Ecology.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Rev.

Milestone Control No T2C-97-714
WBS Number 1.01.01.02.01.02.0001

Title: CONCURRENCE OF ADDITIONAL TANK ACQUISITION (M-46-01C)

Revision/CIN:
Due Date: 11/30/96
ADS No: 1100
Schedule ID: A127A15
Scheduler: DE Hall

Milestone Level:
[x] TPA M-46-01C
[ ] DOE-HQ
[ ] DOE-FO
[ ] DOE-RL
[ ] Contractor

Deliverables
[ ] Report
[x] Letter
[ ] Drawing
[ ] Other (Specify)

Addressed To:
[ ] DOE-HQ
[x] DOE-RL
[ ] Other (Specify)

Description of this Commitment:
Issue letter which includes plans of additional tank acuqisition to support TPA milestone 46-01. The contents of the letter will be based on the waste tank volume projections.

Description of what Constitutes Completion of the Commitment:
Issuance of a letter to DOE-RL including basis for the conclusion of tank acquisition.

Acceptance Criteria:
Approved letter to DOE with subsequent transmittal to Dept. of Ecology.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

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ATTACHMENT 7.4-1

COST BASELINE BY YEAR

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(DOLLARS IN THOUSANDS)

TANK WASTE REMEDIATION SYSTEM

TWRSRA\A_MYP_PRJ2.W 09/20/96

BUDGET AUTHORITY / COST BASELINE BY YEAR BY PROJECT *

WBS / TWRS PROJECT	ADS	FUND	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	SUBTOTAL 1997–2006	FY 1993– FY 1996 *	OUTYEARS	FY 1997 – FY 2064 *
1.1.1.2.1.2																
Wst Vol Mgt/Rec/Xfer/Evap.																
	1100	EXP	14,757	13,304	13,768	12,394	12,842	13,290	13,751	14,227	14,716	0	123,049	0	0	123,049
		C/E	417	113	111	104	91	91	91	91	91	0	1,200	0	0	1,200
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		GPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**15,174**	**13,417**	**13,879**	**12,498**	**12,933**	**13,381**	**13,842**	**14,318**	**14,807**	**0**	**124,249**	**0**	**0**	**124,249**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**15,174**	**13,417**	**13,879**	**12,498**	**12,933**	**13,381**	**13,842**	**14,318**	**14,807**	**0**	**124,249**	**0**	**0**	**124,249**

*** Includes FY 1993 – FY 1996 Costs at TWRS Summary Levels Only, NOT at Project Level, as data is not Available for all projects.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE–RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

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ATTACHMENT 7.5-1

PERFORMANCE OBJECTIVES, MEASURES, AND FY 1997 EXPECTATIONS

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WASTE VOLUME MANAGEMENT, RECEIPT, TRANSFER, & EVAPORATION - 1.1.1.2.1.2

OBJECTIVE	MEASURE	EXPECTATION (RL GUIDANCE)	MYWP PLANNING
TWR4 Operate tank farms in such a manner as to ensure all activities comply with requirements.	TWR4.1 Manage tank waste volume within the existing double-shell tank capacity.	TWR4.1.2 Update Final Safety Analysis Report for 242-A evaporator by March 31, 1997.	The milestone for this activity is T2A-97-009. This milestone, expectation and workscope are being negotiated by RUST with another DOE-RL group.
		TWR4.1.3 Prepare and issue an Annual Operational Waste Volume Report by August 31, 1997.	TPA-46-00D, milestone number T2A-97-106, is in the MYWP with a date of 9/30/97 and does not support the expectation date.
		TWR4.1.7 Replace the 242-A Steam-driven fan with an electric driven unit by January 15, 1997.	The milestone for this activity is T21-97-452. The milestone date is 1/31/97. This milestone, expectation and workscope are being negotiated by RUST with another DOE-RL group.

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ATTACHMENT 7.5-2

FY 1997 PERFORMANCE BASELINE SCHEDULE

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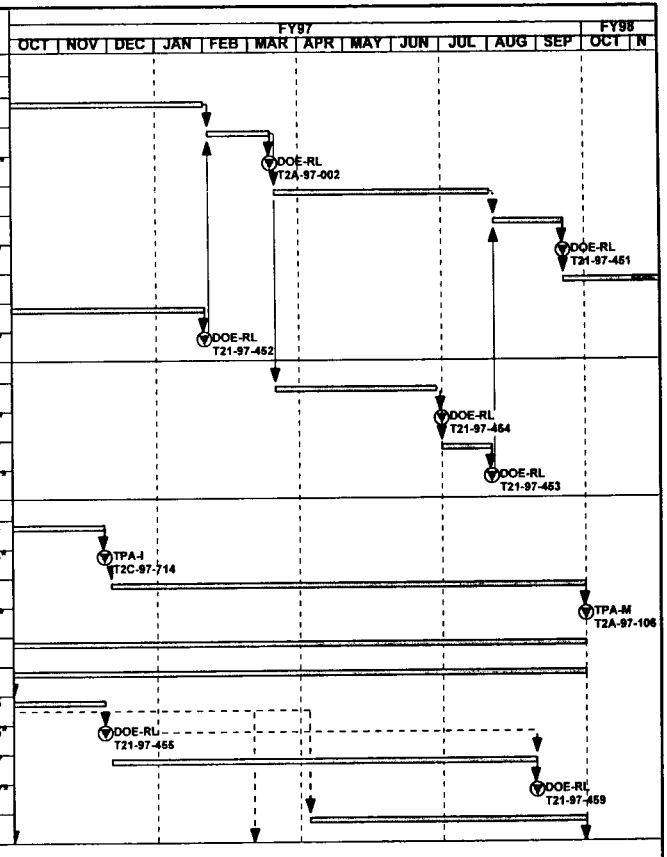
Activity ID	Activity Description	Early Start	Early Finish
1.1.1.2.01.02 - Waste Vol. Mgmt/Evap Project			
Double Shell Tank Space Recovery			
T1115	CAMPAIGN 97-1 OUTAGE	01OCT96*	31JAN97
T1125	CAMPAIGN 97-1	03FEB97*	14MAR97
T1130	COMPLETE CAMPAIGN 97-1		14MAR97*
T1135	CAMPAIGN 97-2 OUTAGE	17MAR97*	31JUL97
T1145	CAMPAIGN 97-2	04AUG97*	16SEP97
T1150	COMPLETE CAMPAIGN 97-2		16SEP97*
T1155	CAMPAIGN 98-1 OUTAGE	17SEP97*	02FEB98
T1230	REPLACE STEAM TURBINE W/ELECT BACK	01OCT96*	31JAN97
T1235	COMPLETE STEAM TURBINE/ELEC		31JAN97*
242-A & AP/AW Tank Farm Operations			
T1240	INSTALL VALVE MANIFOLD SYSTEM IN	17MAR97*	27JUN97
T1245	COMPLETE INSTL VLV MANIFOLD SYSTEM,		30JUN97*
T1250	INSTALL VALVE MANIFOLD SYSTEM IN	01JUL97*	01AUG97
T1255	COMPLETE INSTL VLV MANIFOLD SYSTEM,		01AUG97*
Waste Volume Management			
T1265	WASTE VOLUME MANAGEMENT/OCT TO	01OCT96*	27NOV96
T1270	M-46-01C CONCURRENCE OF ADDITL		27NOV96*
T1275	WASTE VOLUME MANAGEMENT/DEC TO	02DEC96*	30SEP97
T1280	M-46-00D DOUBLE -SHELL TANK SPACE		30SEP97*
T1350	ASSESSMENT PLANS & CAP DST	01OCT96*	30SEP97
T1352	ENGINEERING SERVICES, DST INTEGRITY	01OCT96*	30SEP97
T1354	DST UT WALL EXAMINATION TRIAL	01OCT96*	27NOV96
T1355	COMPL DST, UT WALL EXAMINATION		27NOV96*
T1360	1st TANK WALL UT EXAMINATION	02DEC96*	29AUG97
T1365	COMPLETE FIRST TANK WALL UT		29AUG97*
T1370	2nd TANK WALL & 1st BOTTOM UT	07APR97*	30SEP97



Project Start 01JAN74
Project Finish 30SEP04
Data Date 01OCT96
Plot Date 18SEP96
© Primavera Systems, Inc.

Early Bar
Progress Bar

-- TWRS --
1.1.1.2.01.02 WASTE VOLUME MGMT
PROJECT MASTER SCHEDULE

Sheet 1 of 2

Date	Revision	Checked	Approved
9/23/96			

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Activity ID	Activity Description	Early Start	Early Finish
T1375	COMPLETE SECOND TANK WALL & FIRST		30SEP97*
T1380	TANK WALL CLEANING SERVICES, DST	03MAR97*	30SEP97
T1385	EXAMINATION & MOCKUP MOVEMENT	01OCT96*	30SEP97
T1390	DOUBLE SHELL TANK VISUAL	01OCT96*	31JUL97
T1395	COMPLETE 1st DST CAMERA		31JUL97*
T1396	COMPLETE 2nd DST CAMERA		31JUL97*

FY97: OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP

FY98: OCT | N

DOE-RL T2A-85-113

DOE-RL T21-97-458

DOE-RL T21-97-461

Sheet 1 of 2

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ATTACHMENT 7.5-3

COST BASELINE FOR EXECUTION YEAR BY FUND TYPE BY MONTH

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(DOLLARS IN THOUSANDS)

TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PRJ2.W 09/20/96

FY 1997 MYWP COST PROFILE BY MONTH *

WBS / TWRS PROJECT	ADS	FUND	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1.1.1.2.1.2															
Wst Vol Mgt/Rec/Xfer/Evap.															
	1100	EXP	1,277	1,046	1,059	1,169	1,220	1,258	1,258	1,213	1,212	1,243	1,419	1,383	14,757
		C/E	32	35	35	35	35	35	35	35	35	35	35	35	417
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0
		GPP	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**1,309**	**1,081**	**1,094**	**1,204**	**1,255**	**1,293**	**1,293**	**1,248**	**1,247**	**1,278**	**1,454**	**1,418**	**15,174**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**1,309**	**1,081**	**1,094**	**1,204**	**1,255**	**1,293**	**1,293**	**1,248**	**1,247**	**1,278**	**1,454**	**1,418**	**15,174**

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE–RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

Attachment 7.5-3 Cost Baseline for Execution Year by Fund Type by Month (Page 1)

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TANK WASTE REMEDIATION SYSTEM

COST BASELINE FOR EXECUTION YEAR (FY 1997)

BY PROGRAM BY COST ELEMENT BY MONTH (ALL FUND TYPES)*

(DOLLARS IN THOUSANDS)

35,328 TWRSRBA: MYP_PRCE.WK3

WBS/ADS TWRS PROJECT	C/E	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1.1.1.2.1.2	0 Salaries	913	754	790	869	817	865	862	823	821	834	889	942	10,179
Wst Vol Mgt/Rec/	1 Material	68	56	59	65	54	60	63	60	60	60	55	56	716
Xfer/Evap.	2 Purch Svcs	109	90	57	63	54	83	147	153	153	153	151	140	1,353
1100	3 Chgs/Ot Contr	1	1	1	1	1	1	1	1	1	1	1	1	12
	4 Int'l Svcs	180	149	155	170	147	168	184	176	177	195	167	169	2,037
	5 Int'l Chgs	34	28	29	32	179	112	32	31	31	31	187	106	832
	6 BCS Rich	4	3	3	4	3	4	4	4	4	4	4	4	45
	7 OH & Adders													0
	8 Revenue													0
TOTAL–Wst Vol Mgt/Rec/Xfer/Evap.		1,309	1,081	1,094	1,204	1,255	1,293	1,293	1,248	1,247	1,278	1,454	1,418	15,174

Splitout of adders for C/E 7 is not available in P3. All adders are incorporated in the other C/E's.
*Based upon P3 calendar month profile, NOT realized hours calendar.

8. Retrieval of SSTs will be initiated by December 2003. Failure to initiate retrieval on schedule would compromise the schedule for turning them over to EM-40 for decontamination and decommissioning (D&D). Delays in the schedule would increase the cost of operating the tank farms.

9. Liquids from SST retrieval and new liquid waste will go to DSTs. The SSTs are beyond design life, and the risk of leaking is unacceptable. All pumpable liquid is to be removed from the SSTs by September 2000, and all new liquid waste is to be added to the DSTs. Evaporation will be used to achieve the waste volume reduction needed to ensure adequate DST space for projected new waste and retrieval volumes.

   Mixing and boil-down studies will not identify increased costs for waste management (e.g., if pretreatment is necessary to separate TRU wastes before vitrification or if it is not possible to run the waste streams through the Evaporator).

10. Safety issues will be resolved to allow SST pumping in accordance with the Tri-Party Agreement interim milestones. Flammable gas monitoring equipment will be installed on flammable gas Watch List SSTs before interim stabilization work is scheduled to start on these tanks. Liquid grab samples will be taken and laboratory analysis completed prior to the scheduled start of pumping. It will be determined safe to pump the liquid out of the organic tanks without unacceptable risks of fire.

    There will be no delays in pumping flammable gas tanks either for resolving technical issues or the availability of equipment. All remaining tanks are to be treated as flammable gas tanks and subject to unreviewed safety question (USQ) screening to ensure that they fall within the safety basis specified in the LANL Safety Assessment for 241-A-101. Additional equipment (exhausters) is required for these tanks and may not be procured in time to support early Fall pumping.

11. The liquid observation will (LOW) installations will be completed in FY 1998. The LOW material is mild steel and installation is performed with current lancing procedures. There will be no major changes in safety or environmental requirements or approvals.

12. Core sampling will be completed on schedule to support LOW installation.

13. The Transition 200 West to Controlled, Clean, and Stable project will be consolidated into the Transition 200 East to Controlled, Clean, and Stable project in FY 2001.

14. No Hanford facility will suffer noncompliance with storage regulations or cleanup program delays caused by the inability of tank farms to receive liquid waste.

15. The fifth shift (training shift) will be required to maintain the identified qualifications of the operators while minimizing the overtime required and maximizing training effectiveness. Failure to maintain staffing for the fifth shift will result in missed training and increased overtime costs.

8.0 TRANSITION 200 EAST TO CONTROLLED, CLEAN, AND STABLE PROJECT [WBS 1.1.1.2.1.3]

This project consists of performing all the support functions required for routine surveillance, operation, and maintenance of the 200 East Area to safely monitor status and control of the underground storage of waste. These functions include the following:

- Performing preventive maintenance
- Performing corrective maintenance (routine and non-routine)
- Concentrating facility operations including waste transfers to feed tanks
- Performing routine surveillance monitoring
- Conducting health physics activities (radiological)
- Conducting industrial hygiene and safety functions
- Performing engineering and analysis (campaign run plans, trade studies, and analysis capability upgrades)
- Managing and controlling upgrades to facilities and infrastructure
- Enhancing the safety of facility operations and preparing the facilities for the eventual turnover to the Retrieval Project.

8.1.4 Major Accomplishments

- Achieved Controlled, Clean, and Stable in BX Farm.
- Completed Project W-280, SY & C Farm Lighting.
- Completed construction of Project W-030, AY/AZ Farm Ventilation Upgrades.
- Developed a program plan for Inactive Miscellaneous Underground Storage Tanks (IMUST).
- Completed upgrades to seven alarm panels and 10 compressors
- Completed KD-0, KD-1, and CDR on Project W-314, MSA Tank Farm Infrastructure Upgrades.
- Installed liquid level gauges (ENRAFS) in 24 tanks.
- Connected 43 tanks to the Tank Monitoring and Control System (TMACS).
- Reduced surface contamination of approximately 2,000,000 Sq. Ft.
- Completed construction of Project W-430 Cathodic Protection.

8.0 TRANSITION 200 EAST TO CONTROLLED, CLEAN AND STABLE [WBS 1.1.1.2.1.3]

8.1 PROJECT SUMMARY

8.1.1 Project Mission/Overview

The project mission is "store and manage Hanford's highly radioactive liquid waste* in a safe, environmentally sound, and cost-effective manner such that its ultimate retrieval and stabilization occurs as planned."

*Current and future tank waste and the Sr/Cs capsules.

8.1.2 Planning Assumptions

The Transition 200 East to Controlled, Clean, and Stable Project baseline was based on the following assumptions:

1. Controlled, clean, and stable is achievable for SST farms in FY 2001. Establishing an acceptable end state on a farm-by-farm basis will significantly lower near-term operational costs with savings being realized from the first year.

2. A systems engineering approach will be applied to all Tank Farm Operations project activities.

3. Tank Farm Operations project facilities and utility and transfer systems shall be upgraded to current codes and standards to the extent practicable.

4. Upgrades to selected facilities and systems will be performed to meet mission requirements and achieve a cost-effective, negotiated level of compliance.

5. Equipment and facilities will be restored to satisfy interim safe operations requirements.

6. Emergency pumping will be required as there will be one new "assumed leaking" single-shell tank (SST) annually until interim stabilization has been completed.

7. Interim stabilization of SSTs will be complete by September 2000. Failure to interim stabilize the SSTs on an aggressive schedule would increase the risk of additional leaking tanks and environmental insult. Space will be available in double-shell tanks (DSTs) for SST liquids. Compatibility issues will be resolved, and cross-site transfers will be made.

   All wastes can be co-mingled during pumping. This requires compatibility studies to ensure that there are no adverse chemical reactions and for DOE to accept the potential costs of contaminating non-complexed wastes with organics/complexed wastes.

1.1.1.3.01	Waste Retrieval Program
1.1.1.2.02	Safety Issue Resolution

8.1.6.2 Outside TWRS

The Transition 200 East to Controlled, Clean, and Stable project will be receiving waste from N Reactor, K Basins, PUREX, B-Plant and other facilities in support of Site clean-up.

8.2 WORK BREAKDOWN STRUCTURE

The following attachments are located in Section 8.6:

Attachment 8.2-1 WBS Hierarchy/RAM
Attachment 8.2-2 WBS Dictionary Sheet

8.3 SCHEDULE BASELINE

The following attachments are located in Section 8.6:

Attachment 8.3-1 Project Master Schedule
Attachment 8.3-2 Milestone Control Log
Attachment 8.3-3 Milestone Description Sheets

The milestones on the milestone control log are sorted by date and the page number of the corresponding milestone description sheet is provided.

8.4 COST BASELINE BY YEAR

The following attachment is located in Section 8.6:

Attachment 8.4-1 Cost Baseline by Year

8.5 EXECUTION YEAR

The following attachments are located in Section 8.6:

Attachment 8.5-1 Performance Objectives, Measures, and FY 1997 Expectations
Attachment 8.5-2 FY 1997 Performance Baseline Schedule
Attachment 8.5-3 Cost Baseline for Execution Year by Fund Type by Month

8.6 ATTACHMENTS

This section contains the Work Breakdown, Schedule Baseline, Cost Baseline, and Execution Year exhibits for the Transition 200 East to Controlled, Clean, and Stable Project.

16. Evaporator operations will be used to manage/optimize DST liquid volume and assumes two evaporator campaigns are required per year. The evaporator is required to achieve the Waste Volume Reduction required to avoid the need for additional DST storage tanks at a greatly increased cost and to provide DST space to support interim stabilization.

17. The Cross-Site Transfer System (W-058) will be completed in 1998 to provide a reliable transfer line. The integrity of the existing two transfer lines can be maintained until the completion of W-058.

18. No DST problems will occur that limit their use. There will be no adverse impacts identified from the DST Integrity Assessment of 241-AW-101.

19. The Waste Retrieval Program assumes the SST Minimum Safe Operations activity from the Tank Farm Operations Program in the year 2001.

20. The Waste Retrieval Program assumes the DST Transition Operations activity, infrastructure, and personnel from the Tank Farm Operations Program in the year 2005 and/or when the W-314 major systems acquisition (MSA) is complete.

21. Reengineering will be applied to the project and implementation will culminate in FY 1997. There will be no adverse impacts to budget or schedule as a result of the implementation of this effort.

22. The TWRS Final Safety Analysis Report (FSAR) will be completed and implemented in FY 1997.

23. Evaporator run plans will be integrated with both the Transition 200 East to Controlled, Clean, and Stable Project and the Transition 200 West to Controlled, Clean, and Stable Project.

24. No GPP funding is provided in FY 1997 for support of the outyear requirements for retrieval and disposal.

25. The cement issue in tank BY-105 will be resolved.

26. The internal, external and 204-AR transfers will not exceed the FY 1996 waste volume projections.

27. The Drawing/Labeling program will operate under current program requirements. Any changes to the requirements will have potential impact on Safety Initiative 4C, "Complete Accelerated Walk Downs and Field Verify Essential Drawings by September 1997."

8.1.3 Technical Objectives

The primary objective for this project is to conduct all activities pertaining to the operation of a permitted treatment, storage, and disposal (TSD) facility within the boundary of the current Interim Safety Basis and in a manner that ensures compliance with all applicable federal, state, and local environmental regulations to ensure a safe work environment for all employees and support groups.

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- Completed DST Labeling and H14 Drawing Upgrades.

8.1.5 Major Deliverables

8.1.5.1 FY 1997-1998

- Completion of Project W-030, AY/AZ Farm Ventilation Upgrade
- Completion of SST Labeling and H14 Drawing Upgrades
- Achieve Control, Clean and Stable in 241-C Farm
- Provide results of W-314 Needs Study to the Washington State Department of Ecology
- Start Definitive Design for Project W-314
- Provide Ecology with Project W-314 Construction Schedule
- Complete BIO Transition
- Complete FSAR Transition

8.1.5.2 FY 1999-2005

- Complete M-41-00, Single-Shell Tank Interim Stabilization.
- Complete M-43-00, MSA Tank Farm Infrastructure Upgrades, (5) Farms.
- Achieve Controlled, Clean, & Stable in 241-A and 241-AX Farms.
- Release of waste tanks for Retrieval in the year 2005 and eventual turnover to EM-40.
- Turnover of all facilities to EM-40 for closure.

8.1.6 Key Interfaces

8.1.6.1 Within TWRS

1.1.1.2.01.02	Waste Volume Measurement, Receipt, Transfer, and Evaporation Project
1.1.1.2.01.04	Transition 200 West to Controlled, Clean, and Stable Project
1.1.1.2.04	Waste Characterization Project

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ATTACHMENT 8.2-1

WBS HIERARCHY/RAM

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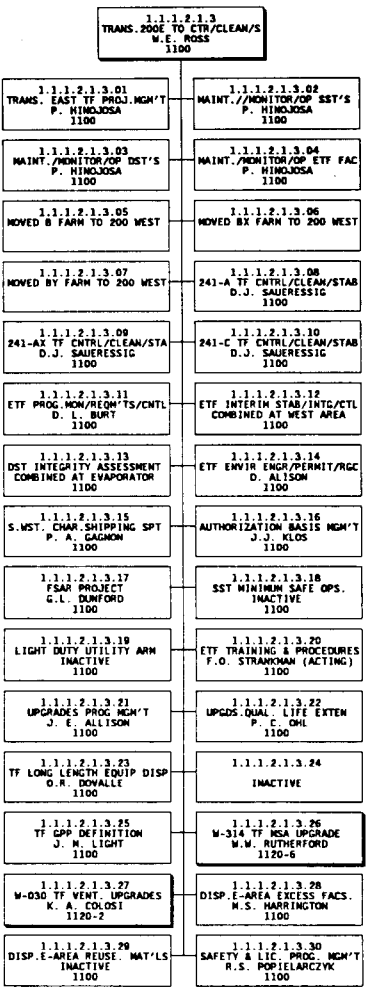
TWRS FY 1997 WORK BREAKDOWN STRUCTURE
TRANSITION 200 EAST TO CONTROLLED, CLEAN AND STABLE



Attachment 8.2-1 WBS Hierarchy/RAM

The Transition 200 East to Controlled, Clean, and Stable project consists of performing the following major activities in support of the project mission:

- Technical Management and Administration
  - Project and Baseline Management
  - Providing Utilities and Services
  - Training and Certification Program
  - Nuclear Safety Oversight
  - Configuration Management and Support
  - Providing Quality Assurance/Control Support
  - Tank Farm Security Operations and Upgrades
  - Review/Revising Tank Farm Operations and Administrative Procedures
  - Tank Farm Surveillance Database Maintenance and Management
- Tank Farm Compliance and Corrective Activities
  - Permitting and Regulatory Compliance
  - Radioactive/Hazardous Solid Waste Management
  - Environmental Compliance, Engineering, Analysis, and Assessments
  - Safety Envelope Definition and Implementation
  - Double-Shell Tank Emergency Pumping Planning/Preparations
  - Special Disposal of Unusable/Abandoned Field and In-tank Equipment
  - Compliance Management and ALARA Support to Field Activities
  - OSR Implementation Including Necessary Upgrades
  - Criticality Engineering Upgrades and Safety Reviews
  - Surface Contamination Zone Reduction
- Tank Farm Single-Shell Tank Interim Stabilization
  - Complete Interim Stabilization and Intrusion Prevention for Single-Shell Tanks with Pumpable Liquid
  - Prepare for Emergency Pumping of Leaking Single-Shell Tanks and Pump Leaking Single-Shell Tanks If Required.
- Install Liquid Observation Wells in all Single-Shell Tanks with sufficient material to function
- Tank Farm Retired Facilities
  - Transition Planning for Each Facility/System
  - Facility Preparation for Transfer to EM-40
  - Surveillance and Maintenance of Retired Facilities Until Transfer to EM-40 Is Accomplished
  - Safe Shutdown and Transfer to EM-40

ATTACHMENT 8.2-2

WBS DICTIONARY SHEET

Financial Control

- Manage ETFTP Cost Accounts. Provide monthly status to Program Office/DOE-RL.
- Issue/draft FY98 budget and outyear plan by May 31, 1997 to East Tank Farm Transition Project Management, Program Office and DOE-RL.
- Issue final FY98 multi-year plan by September 15, 1997 to East Tank Farm Transition Project Management, Program Office and DOE-RL.
- Provide Five-Year Plan and review with Transition Project Management, Program Office and DOE-RL.
- Respond to Internal and/or External audits and requests for information for the East Tank Farm Transition Project.
- Track Performance Based Fee Criteria (PBFCs).

Re-Engineering

- Coordinate re-engineering of East Tank Farm Transition Project.

Operational Readiness Review (ORR)

- Perform Operational Readiness Reviews as required.

Training Coordination

- Track and update TMX system
- Schedule personnel training
- Issue quarterly proficiency report.
- Issue non-compliant training report for the Dangerous Waste Training Plan.

Pit Decontamination Implementation

- Implement Pit Decontamination Process Plan

Facility Evaluation Board

- Provide funding for Facility Evaluation Board assessment of ETFTP

Conduct of Operations

- Perform three (3) formal assessments and report findings on three (3) chapters of DOE Order 5480.19 as scheduled.

Safety/QA Program Support

- Perform QA assessment per FY97 Assessment Schedule

TANK WASTE REMEDIATION SYSTEM
WORK BREAKDOWN STRUCTURE DICTIONARY

PROGRAM/TITLE/PARTICIPANT		
1.1.1 TWRS 1.1.1.2 Waste Storage 1.1.1.2.01 Tank Farm Operations		
WBS ELEMENT CODE/LEVEL	WBS ELEMENT TITLE	
1.1.1.2.01.03 Level 5	Transition 200 East to Controlled, Clean, and Stable	
CURRENT REV. NO.	EFFECTIVE REV DATE	APPROVED CHANGES
1	October 1, 1996	

ELEMENT DESCRIPTION

1. TECHNICAL BASIS

a. Goals and Objectives

The functional product of the Transition 200 East to Controlled, Clean, and Stable Project is to coordinate, monitor, and control Facility Operations support to the material condition, receipt, storage, and transfer operations of 200 East Tank Farm Storage Facilities in support of Westinghouse Hanford Company and the Department of Energy's environmental management goals at Hanford.

Conduct all activities pertaining to operation of a permitted treatment, storage, and disposal facility within the boundary of current Interim Safety Basis and in a manner that ensures compliance with all applicable federal, state, and local environmental regulations to ensure a safe work environment for all employees and support groups.

This project consists of performing all of the support functions required for providing the routine surveillance, operations, and maintenance of 200 East Area to safely monitor status and control the underground storage of waste. These functions are:

- Preventive maintenance,
- Corrective maintenance (routine and non-routine),
- Routine surveillance monitoring,
- Health physics activities (radiological),
- Industrial hygiene and safety functions,
- Engineering and analysis,
- Manage and control upgrades to facilities and infrastructure, and
- Enhance the safety of facility operations as well as prepare the facilities for the eventual turnover to Waste Disposal program.

1.1.1.2.1.3.02 (1N1F62) MAINTAIN/MONITOR/OPERATE SSTs

MAINTAIN TANK FARMS

Manage/Administration

This task will support all deliverables within this work package.

Hazardous\Material Control

- Complete implementation of the HAZCOM Program by September 30, 1997.

JCS/OMP Support

No deliverables associated with this task

Preventative Maintenance

Plan/Schedule/Perform Work

- Plan and perform work for preventative maintenance (PM) work packages to maintain approximately 85% of essential equipment availability.

Technical Support

- Issue weekly productivity reports for Zones 1, 2, and 3.
- Issue PM/CM performance indicator monthly report.

Non-Destructive Examinations (NDE)

- Issue non-destructive examination (NDE) inspection reports as required for inspection of components, underground pipes, vessels, roof structures, and rotating equipment as requested
- Conduct routine non-destructive examinations on both new and in-service components in accordance with approved procedures
- Perform underground surveys as required prior to all excavations

Predictive Maintenance

- Implementation of conditioning monitoring techniques for all SSTs as identified per optimization plan by September 30, 1997.

Vent & Balance

- Perform required SST Vent and Balance work packages per schedule

b. Major End-Item Deliverables

- Five-year plan input and review with RL.
- Monthly baseline reviews with RL.
- Completing M-41-00, Single-Shell Tank Interim Stabilization.
- Completing M-43-00, Tank Farm Upgrades.
- Release of waste tanks for Retrieval and eventual turnover to EM-40.
- Turnover of all facilities to EM-40 for closure.

Level 6 Deliverables:

1.1.1.2.1.3.01 (1N1F61) TRANSITION EAST TANK FARM PROJECT MANAGEMENT

Project/Program/Administration Management

Project Management

This activity is responsible for the deliverables of all accounts under East Transition Project enterprise.

General Administration

- Respond to Corrective action management issues, and issue reports as required for closure.
- Internal assessment of compliance with SRIDS Phase I
- Monthly baseline reviews with DOE-RL
- Provide Quarterly Status Report to DOE-RL
- Required Reading Program management

Document Control

- Issue Monthly Conduct of Operations graphs
- Disposition Monthly QA Documents to Records Holding Area as required
- Complete and Issue Records Inventory Disposition Schedule (yearly)

Phase I/II S/RIDs

- Perform compliance (Phase I) and performance (Phase II) Management Assessments
- Review all changes to the S/RID, correct non compliance and report of status, as needed, to DOE-RL
- Provide for requirements integration activities

Hanford Action Tracking System (HATS)

- Track, monitor and initiate closure documentation for Corrective Action Management (CAM) items as identified in HATS
- Track, monitor and initiate closure documentation for Non-CAMs items as identified in HATS

Environmental Compliance

- Perform assessments as required, to ensure East Tank Farms is in compliance with all Washington Administrative Code (WAC) requirements and permitting and Westinghouse policies and procedures.

Process Engineering

Manage/Administration

This task will support all deliverables within this work package.

Procedure Review

- Perform procedure reviews as required.

Disposition of NCRs

- Disposition Non-Conformance Reports as required.

Technical Requests

- Provide guidance/direction as required.

OSR/OSD Review

- Internal memo to East Tank Farm Operations documenting completion of the review and modification to the OSR/OSD calibration and functional test data sheets. The internal memo will also document the changes submitted to the PM/S system.

Criticality Safety

- Provide status reports as requested.
- Issue quarterly Tank Farm Criticality Inspections.

FIELD OPERATIONS

Clean/Maintain Tank Farms

No deliverables associated with this task.

LOW Installation

- Install seven (7) Liquid Observation Wells (LOWs) in East Tank Farms.

Design Authority

- Technical document review/approval
- Maintain technical baseline
- Consultation services

Training

Management Personnel Training

- Comply with mandatory training requirements

Operations Engineering Qualification

- Support operation personnel requirement for certified personnel
- Comply with regulatory drivers

Utilities/Site Services

200 East Utilities

- Maintain utility services. These assessments (utilities) are for basic Tank Farm Operations needs, and as such, support many of the deliverables that are identified throughout the Fiscal year Work Plan. As such, there are no specific deliverables for this account.

Herbicide/Pesticide Spraying

- Complete and status schedule of herbicide spraying per the FY 1997 Herbicide Spray Schedule
- Complete Pesticide Control as required
- Issue FY 1998 Herbicide Schedule by September 30, 1997

External Support

No deliverables associated with this task

Security Access Control

No deliverables associated with this task

Facilities Custodial Support

No deliverables associated with this task

Industrial Hygiene (IH) Field Monitoring

No deliverables associated with this task.

Industrial Hygiene (IH) Data Assessments

- Review vapor sampling data and recommend monitoring program changes.
- Review IH equipment and evaluate against anticipated needs.
- Review current IH monitoring records and compare with record keeping requirements.

Operating Parameters

- Issue weekly liquid level instrumentation status.

Shift Operations

The following shift deliverables are accomplished by rotating shifts seven days a week.

- Complete and document Required Readings as directed.
- Complete and document corrective actions as required.
- Status and maintain Equipment Deficiency Log (EDL).

Maintain CASS, TMACS, SACS

No deliverables associated with this task.

SAFETY SUPPORT

Radiological Health & Safety

Management/Administration

- Performance indicators for skin and personal effects contamination; and RPRs issued, closed and open, will be reported monthly.

- Other indicators such as overtime, number of facility qualified personnel will be provided for program performance evaluation by Radiological Control Management.

RWP/Containment Required Analysis

- Provide quarterly report of ALARA Goals.

ACES

- Radiological survey documentation of the work area and personnel as required by this work package.

Corrective Maintenance

Plan/Schedule/Perform Work

- Reduce emergency (personnel safety related) backlog CM work packages by 10% based on the comparison from October 1, 1995 until September 30, 1996.

Central Shop/Craft Support

- Completion of all work orders issued to the fabrication shops/craft support within funding and on schedule.

Labeling

- Perform and complete all SST (excluding 241-BX) and drawing upgrades/labeling, in compliance with Safety Initiative 4C requirements
- Field verification and issue all SST farm H-14/H-2 drawings for A, AX and C Farms by September 30, 1997. Additionally, ECNs issued against SST essential drawings which are 30 days old (30 days elapsed time from ECN being signed to work complete) are incorporated in essential drawings.
- Provide management support to the Labeling/Configuration Management effort

ENGINEERING SUPPORT

Operations Technical Support

Technical Support

No deliverables associated with this task.

Operations Engineering

No deliverables associated with this task.

Operations Environmental Requirements

- Support development and Implementation of OER Procedures.
- Develop and Implement OER Administrative Controls.

Occurrence Reporting

- Issue Event Notification
- Issue 10-Day Report
- Issue 10-Day Update Report
- Compile and issue final report

Hazardous\Material Control

- Complete implementation of the HAZCOM Program by September 30, 1997.

JCS/OMP Support

No deliverables associated with this task.

Preventative Maintenance

Plan/Schedule/Perform Work

- Plan and perform work for preventative maintenance (PM) work packages to maintain approximately 85% of essential equipment availability.

Technical Support

- Issue weekly productivity reports for Zones 1, 2, and 3.
- Issue PM/CM performance indicator monthly report.

Non-Destructive Examinations (NDE)

- Issue non-destructive examination (NDE) inspection reports as required for inspection of components, underground pipes, vessels, roof structures, and rotating equipment as requested

- Conduct routine non-destructive examinations on both new and in-service components in accordance with approved procedures

- Perform underground surveys as required prior to all excavations

Predictive Maintenance

- Implementation of conditioning monitoring techniques for all SSTs as identified per optimization plan by September 30, 1997.

Vent & Balance

- Perform required SST Vent and Balance work packages per schedule

Corrective Maintenance

Plan/Schedule/Perform Work

- Reduce emergency (personnel safety related) backlog CM work packages by 10% based on the comparison from October 1, 1995 until September 30, 1996.

Material Procurement/Inventory

No deliverables associated with this task.

SURVEILLANCE

Surveillance Monitoring

Data Acquisition

- Obtain daily, weekly, and quarterly liquid level readings of SST and catch tanks in accordance to OSD-T-151-00031.
- Monitor and acquire daily surveillance data on 200E SST ventilation systems in support of Waste Tank Storage Tank (in accordance with OSD-T-151-00007, OSD-T-151-00011, and OSD-T-151-00013). Ventilation Exhauster = daily and weekly rounds. (Includes Tank Pressures).
- Obtain weekly breather filter data (in accordance with OSD-T-151-00013).
- Perform investigations related to tank temperature/level/pressure/etc., anomalies, and intrusions as requested.
- Obtain daily, weekly, and quarterly leak detection data.

LOW/Drywells Monitoring

- Obtain LOWs and drywells levels within specified frequencies to assure detection of tank leaks and unsafe or non-compliant conditions of waste.

Video Inspections

- Perform inspection videos as required to support operations.

Data Analysis (Technical Support)

- Issue Surveillance Discrepancy Reports as necessary when anomalies occur per WHC-IP-0842.
- Issue Surveillance Alert List monthly per WHC-IP-0842

Radiological Area Surveillance

- Required radiological surveys will be provided according to established frequencies as stated in current task descriptions.

Procedure Review

- Perform procedure reviews as required.

Disposition of NCRs

- Engineering disposition of Non-Conformance Reports.

Technical Requests

- Provide guidance/direction as required.

OSD/OSR Review

- Internal memo to East Tank Farm Operations documenting completion of the review and modification to the OSD/OSR calibration and functional test data sheets. The internal memo will also document the changes submitted to the PM/S system.

Criticality Safety

- Provide status reports as requested.
- Complete and issue quarterly Tank Farm Criticality Inspections

107-AN Caustic

- Develop Plan To Resolve 107-AN Caustic

FIELD OPERATIONS

Clean/Maintain Tank Farms

- Decon and remove abandoned equipment from 244A lift station.

Material Procurement/Inventory

No deliverables associated with this task.

SURVEILLANCE

Surveillance Monitoring

Data Acquisition

- Obtain daily, weekly, and quarterly liquid level readings of DSTS and catch tanks in accordance to OSD-T-151-00031.

Technical Support

- Compliance assessment documents demonstrating assessment of all radiological safety requirements every 3 years will be maintained.

Industrial Hygiene and Safety

Management/Administration

No deliverables associated with this task.

Technical Support

- Industrial Safety Field Surveys documented for 241-A, AX and C Tank Farms.

Nuclear Safety

- Deliverables under this cost account are indicated within each major activity area and in order of perceived priority. Any work scope or priority changes will involve review and approval by the manager of East and West Tank Farm Transition and Evaporator Projects to assure agreement on scheduled activities and prioritization of those activities.

Quality Assurance/Quality Control

QA/QC Support

No deliverables associated with this task.

TRAINING

Personnel Training

- Comply with mandatory training requirements.

1.1.1.2.1.3.03 (1N1F63) MAINTAIN/MONITOR/OPERATE DSTs

MAINTAIN TANK FARMS

Manage/Administration

This task will support all deliverables within this work package.

Maintain CASS, TMACS, SACS

No deliverables associated with this task.

SAFETY SUPPORT

Radiological Health and Safety

Management/Administration

- Performance indicators for skin and personal effects contamination; and RPRs issued, closed and open, will be reported monthly.

- Other indicators such as overtime, number of facility qualified personnel will be provided for program performance evaluation by Radiological Control Management.

RWP/Containment Required Analysis

- Provide quarterly ALARA Goal Report.

ACES

- Radiological survey documentation of the work area and personnel as required by this work package.

Technical Support

- Compliance assessment documents demonstrating assessment of all radiological safety requirements every 3 years will be maintained.

Industrial Hygiene and Safety

Management/Administration

No deliverables associated with this task.

Technical Support

- Industrial Safety Field Surveys documented for AN, AY and AZ.

Nuclear Safety

- Deliverables under this cost account are indicated within each major activity area and in order of perceived priority. Any work scope or priority changes will involve review and approval by the manager of East and West Tank Farm Transition and Evaporator Projects to assure agreement on scheduled activities and prioritization of those activities.

Central Shop/Craft Support

- Completion of all work orders issued to the fabrication shops/craft support within funding and on schedule.

Labeling

Configuration Management

- Provide management support to the Labeling/Configuration Management effort.

ENGINEERING SUPPORT

Operations Technical Support

Technical Support

No deliverables associated with this task.

Operations Engineering

No deliverables associated with this task.

Operations Environmental Requirements

- Support development and Implementation of OER Procedures
- Develop and Implement OER Administrative Controls

Occurrence Reporting

- Issue Event Notification
- Issue 10-Day Report
- Issue 10-Day Update Report
- Compile and issue final report

Environmental Compliance

- Perform assessments as required, to ensure East Tank Farms is in compliance with all Washington Administrative Code (WAC) requirements and permitting and Westinghouse policies and procedures.

Process Engineering

Manage/Administration

This task will support all deliverables within this work package.

Technical Support

- Issue weekly productivity reports for Zones 1, 2, and 3.
- Issue PM/CM performance indicator monthly report.

Non-Destructive Examinations (NDE)

- Issue non-destructive examination inspection (NDE) reports as required for inspection of components, underground pipes, vessels, roof structures, and rotating equipment as requested.

- Conduct routine non-destructive examinations on both new and in-service components in accordance with approved procedures.

- Perform underground surveys as required prior to all excavations.

Predictive Maintenance

- Implementation of conditioning monitoring techniques for all facilities as identified per optimization plan by September 30, 1997.

Vent & Balance

- Perform required facility Vent and Balance work packages per schedule.

Corrective Maintenance

Plan/Schedule/Perform Work

- Reduce emergency backlog CM work packages by 10% based on the comparison from October 1, 1995 until September 30, 1996.

Central Shop/Craft Support

- Completion of all work orders issued to the fabrication shops/craft support within funding and on schedule.

Labeling

Configuration Management

- Provide management support to the Labeling/Configuration Management effort.

- Monitor and acquire daily surveillance data on 200E DSTs ventilation systems in support of Waste Tank Storage Tank (in accordance with OSD-T-151-00007, OSD-T-151-00011, and OSD-T-151-00013). Ventilation Exhauster = daily and weekly rounds. (Includes Tank Pressures).

- Perform investigations related to tank temperature/level/pressure/etc., anomalies, and intrusions as requested.

- Obtain daily, weekly, and quarterly leak detection data.

Video Inspections

- Perform inspection videos as required to support operations.

Data Analysis (Technical Support)

- Issue Surveillance Discrepancy Reports as necessary when anomalies occur per WHC-IP-0842.

- Issue Surveillance Alert List monthly per WHC-IP-0842.

Radiological Area Surveillance

- Required radiological surveys will be provided according to established frequencies as stated in current task descriptions.

Industrial Hygiene (IH) Field Monitoring

No deliverables associated with this task.

Industrial Hygiene (IH) Data Assessments

- Review vapor sampling data and recommend monitoring program changes.
- Review IH equipment and evaluate against anticipated needs.
- Review current IH monitoring records and compare with record keeping requirements.

Operating Parameters

- Issue weekly liquid level instrumentation status.

Shift Operations

The following shift deliverables are accomplished by rotating shifts seven days a week.

- Complete and document Required Readings as directed.
- Complete and document corrective actions as required.
- Status and maintain Equipment Deficiency Log (EDL).

- Complete and issue quarterly Tank Farm Criticality Inspections

FIELD OPERATIONS

Clean/Maintain Facilities

No deliverables associated with this task.

Material Procurement/Inventory

No deliverables associated with this task.

SURVEILLANCE

Surveillance Monitoring

Data Acquisition

- Monitor and acquire daily surveillance data on 200E Facility ventilation systems in support of Waste Tank Storage tanks (in accordance with OSD-T-151-00007, ODS-T-15100011 AND OSD-T-151-00013). Ventilation Exhauster = daily and weekly rounds. (Includes Tank Pressures).

Data Analysis (Technical Support)

- Issue Surveillance Discrepancy Reports as necessary when anomalies occur per WHC-IP-0842.

- Issue Surveillance Alert List monthly per WHC-IP-0842.

Radiological Area Surveillance

- Required radiological surveys will be provided according to established frequencies as stated in current task descriptions.

Operating Parameters

- Issue weekly liquid level instrumentation status.

Shift Operations

The following shift deliverables are accomplished by rotating shifts seven days a week.

- Complete and document Required Readings as directed.
- Complete and document corrective actions as required.
- Status and maintain Equipment Deficiency Log (EDL).

Quality Assurance/Quality Control

QA/QC Support

No deliverables associated with this task.

TRAINING

Personnel Training

- Comply with mandatory training requirements.

TRANSFERS

Establish/Perform Internal Transfers

- Conduct FY97 internal waste transfers allowing sufficient tank space to accommodate contents of largest pumpable liquid inventory of any SST in East Area.

Establish/Perform External Transfers

- Complete FY97 external HLW/LLW waste shipments.

1.1.1.2.1.3.04 (1N1F64) MAINTAIN/MONITOR/OPERATE ETF FACILITIES

MAINTAIN FACILITIES

Manage/Administration

This task will support all deliverables within this work package.

Hazardous\Material Control

- Complete implementation of the HAZCOM Program by September 30, 1997.

JCS/OMP Support

No deliverables associated with this task

Preventative Maintenance

Plan/Schedule/Perform Work

- Plan and perform work for Preventative Maintenance (PM) work packages to maintain approximately 85% of essential equipment availability.

Quality Assurance/Quality Control

QA/QC Support

No deliverables associated with this task.

TRAINING

Personnel Training

- Comply with mandatory training requirements.

TRANSFERS

Receive/Unload/Transfer Waste

- Perform FY97 railcar/tank trailer transfers, as provided by onsite waste generators and provide closeout of appropriate work packages associated with those transfers.

Monitor 204AR Facility

No deliverables associated with this task.

1.1.1.2.1.3.05 B TANK FARM CONTROLLED, CLEAN, AND STABLE

MOVED TO 200 WEST

1.1.1.2.1.3.06 BX TANK FARM CONTROLLED, CLEAN, AND STABLE

MOVED TO 200 WEST

1.1.1.2.1.3.07 BY TANK FARM CONTROLLED, CLEAN, AND STABLE

MOVED TO 200 WEST

1.1.1.2.1.3.08 (1N1F68) 241-A TANK FARM CONTROLLED, CLEAN & STABLE

STABILIZATION

Pumping

- Begin pumping A-101 by November 1, 1996, to be completed January 31, 2000 per M-41-21, "Start 1 SST by 3/31/97".

ENGINEERING SUPPORT

Operations Technical Support

Technical Support

No deliverables associated with this task.

Occurrence Reporting

- Issue Event Notification
- Issue 10-Day Report
- Issue 10-Day Update Report
- Compile and issue final report

Environmental Compliance

- Perform assessments as required, to ensure East Tank Farms is in compliance with all Washington Administrative Code (WAC) requirements and permitting and Westinghouse policies and procedures.

Process Engineering

Manage/Administration

This task will support all deliverables within this work package.

Procedure Review

- Perform procedure reviews as required.

Disposition of NCRs

- Disposition Non-Conformance Reports as required.

Technical Requests

- Provide guidance/direction as required.

OSD/OSR Review

- Internal memo to East Tank Farm Operations documenting completion of the review and modification to the OSD/OSR calibration and functional test data sheets. The internal memo will also document the changes submitted to the PM/S system.

Criticality Safety

- Provide status reports as requested.

1.1.1.2.1.3.14 (1N1F32) ETF ENVIRONMENTAL ENGINEERING, PERMITTING, & REGULATORY COMPLIANCE

Inactive Miscellaneous Underground Storage Tanks (IMUSTs) Program Management

- Issue revised Inactive Miscellaneous Underground Storage Tanks (IMUSTs) Program Plan and schedule to reflect overall program direction
- Issue quarterly progress report regarding IMUSTs in the ECSS Quarterly report

Emission & Effluent Engineering & Permitting Functions

- Implement recommendations from Basis for Particulate Radionuclide Continuous Air Monitor (CAM) Alarm Set Points for East Tank Farm Transition Project Stacks.
- Conduct semi-annual review and update of Tank Farm Facility Effluent Monitoring Plan (WHC-EP-0479) per DOE Order.
- Review and revise the Tank Farm Appendix to the Quality Assurance Program Plan for Radionuclide Airborne Emissions Monitor (WHC-EP-0536).
- Quarterly update of the Hanford Site Air Permit Application
- Issue quarterly progress report regarding emission and effluent engineering and permitting in the ECSS Quarterly Report.

Environmental Compliance Self-Assessment and S/RIDs Assessment

- Issue quarterly report of ECSS Self-Assessments
- Conduct self-assessments on Tank Farm facilities, activities or projects. Issue report.
- Submit recommended change of S/RIDS to requirement management group

Environmental Center of Excellence

- Issue quarterly progress report regarding environmental compliance in the ECSS Quarterly Report

RCRA Inspection Plan, Schedules & Logs

- Issue semi-annual revision of the "200 Area Component Inspection Schedules (Tank Farm Facilities)" document
- Issue annual revision of the "200 Area Component Inspection (Tank Farm Facilities)" document

Maintain CASS/TMACs/SAC

No deliverables associated with this task.

SAFETY SUPPORT

Radiological Health and Safety

Management/Administration

- Performance indicators for skin and personal effects contamination; and RPRs issued, closed and open, will be reported monthly.

- Other indicators such as overtime, number of facility qualified personnel will be provided for program performance evaluation by Radiological Control Management.

RWP/Containment Required Analysis

- Provide quarterly ALARA Goal Report.

ACES

- Radiological survey documentation of the work area and personnel as required by this work package.

Technical Support

- Compliance assessment documents demonstrating assessment of all radiological safety requirements every 3 years will be maintained.

Industrial Hygiene and Safety

Management/Administration

No deliverables associated with this task.

Technical Support

- Industrial Safety Field Surveys documented for Tank Farm Facilities.

Nuclear Safety

Deliverables under this cost account are indicated within each major activity area and in order of perceived priority. Any work scope or priority changes will involve review and approval by the manager of East and West Tank Farm Transition and Evaporator Projects to assure agreement on scheduled activities and prioritization of those activities.

1.1.1.2.1.3.15 (1N1F34) SOLID WASTE CHARACTERIZATION & SHIPPING SUPPORT

- Review and revise as required, document WHC-SD-WM-PLN-115, rev. 0, Waste Shipment Engineering Radionuclide Characterization Program Plan.
  Report Date: February 28, 1997

- Prepare annual 30 Year Waste Forecast per WHC-EP-0063-4.
  Report Date: July 31, 1997

- Review and revise, as required, the LLW Characterization document (WHC-SD-WM-ER-435).
  Report Date: August 29, 1997

- Review and revise as required, document WHC-SD-WM-PLN-119, rev. 0, Tank Farms Containerized Solid, Hazardous Chemical Characterization/Sampling and Analysis Plan Program.
  Report Date: March 31, 1997

- Complete four Pollution Prevention Opportunity Assessments on Tank Farm Waste Stream/Work Processes

- Prepare quarterly Waste Minimization/Pollution Prevention Report

1.1.1.2.1.3.16 (1N1F38) AUTHORIZATION BASIS MANAGEMENT

- Letter to DOE RL stating completion of Compliance Implementation Plan Phase 5
- Letter to DOE RL stating WHC has revised OSDs
- Annual Report to DOE regarding USQ/PRC status
- Provide Annual update to AB
- Provide support for emerging USQ items.
- Provide PRC minutes to permanent storage as part of S/RID program.
- Complete Basis for Interim Operation (BIO) transition
- Complete Final Safety Analysis Report (FSAR) transition
- Implement DNFSB Recommendation 95-2 for TWRS Integrated Safety Management

1.1.1.2.1.3.17 (1N1F39) FSAR PROJECT

- Update FSAR/TSR to incorporate Tier II and III comment
- Submit Tank Farms Technical Safety Requirements (TSR) to RL for approval
- Submit Tank Farms Final Safety Analysis Report (FSAR) to RL for review

1.1.1.2.1.3.18 SST MINIMUM SAFE OPERATIONS

INACTIVE

1.1.1.2.1.3.09 (1N1F69) 241-AX TANK FARM CONTROLLED, CLEAN & STABLE

STABILIZATION

Pumping Preparation

- Complete pumping preparation of AX-101 by July 31, 1997. Pumping of AX-101 to begin August 1, 1997 per M-41-22, "Start Interim Stabilization of 6 SST's by 9/30/97".

1.1.1.2.1.3.10 (1N1F6A) 241-C TANK FARM CONTROLLED, CLEAN & STABLE

PROJECT UPGRADES

ENRAF Installation/Tie-in to TMACS

- Achieve remote liquid-level monitoring capabilities by installing thirteen (13) ENRAF's which includes tie-in to Tank Monitoring and Control System for the following SST's by September 30, 1997:

- C-101	- C-109	- C-201
- C-102	- C-110	- C-202
- C-104	- C-111	- C-203
- C-105	- C-112	- C-204
- C-108		

1.1.1.2.1.3.11 (1N1F41) ETF PROGRAM MONITOR REQUIREMENTS

COMMUNICATION CONTROL

- Five year plan input and review
- Monthly baseline reviews with RL
- Release of waste tanks to Retrieval and eventual turnover to EM-40
- Turnover of facilities to EM-40 for closure
- High Level Storage Tank Farms/242-A Evaporator Standards/Requirements Identification Document (S/RIDS)
- Provide WDOE & WDOH results of SST Ventilation Upgrades Needs Analysis

1.1.1.2.1.3.12 INTERIM STABILIZATION/INTEGRATION/CONTROL

COMBINED AT WEST AREA

1.1.1.2.1.3.13 DST INTEGRITY ASSESSMENT

COMBINED AT EVAPORATOR

- Completion of the Cold Test Facility preparation for total system testing (QTP) (WHC Key, FY 1997)
- Release of the final Design for Component Removal Equipment (DOE-RL, FY 1995)
- Fabricate and receive transport/storage containers (FY 1997)
- Perform qualification test procedure (FY 1997)
- Complete generic operating procedures for LLCE total retrieval system (FY 1997)
- Award contract for design and fabrication of receiver trailer and transport trailer (WHC Other, FY 1996)
- Complete final design of receiver trailer and transport trailer (WHC Other, FY 1996)
- Receive and inspect receiver trailer and transport trailer (FY 1997)
- Develop Safety Analysis Report for Packaging (SARP) (WHC Other, FY 1997)
- Replace the AW-104 Transfer Pump (FY 1997)

1.1.1.2.1.3.24 TF MWTF PATH FORWARD

INACTIVE

1.1.1.2.1.3.25 (1N1F87) TANK FARM GPP DEFINITION

- Initiate Tank Monitoring and Control System (TMACS) installation in 241-AW (W-457)

1.1.1.2.1.3.26 (1N1F8B) PROJECT W-314 TF MSA UPGRADES

Milestones

- Complete Pre-Title I Studies for Project W-314
- Approve Key Decision 1 (KD1) for Project W-314
- M-43-10 Start Definitive Design for Project W-314

Waste Analysis Plans, Data Quality Objectives, & Waste Acceptance

- Revise the DST WAP
- Revise the Compatibility DQO

TPA M-32 Interim Status Negotiations and Actions

- Issue a M-32 DST Interim Status progress report for the ECSS Quarterly report

Provide support to Vadose Zone Monitoring Contractor

- Issue a quarterly report on Vadose Zone progress for the EXCESS Quarterly report

DST Environmental Compliance/Permitting

- Issue revisions of chapters 6, 11, and 14 of the DST Part B Permit application
- Issue revisions of Chapters 2, 4, and 15 of the DST Part B Permit Application
- Issue revision of Chapter 3 of the DST Part B Permit Application
- Final Assembly of DST Part B Revision
- Issue quarterly progress report regard the status of DST compliance activities in the ECSS Quarterly report

SST Environmental Compliance/Permitting

- Research and assess the applicability of the existing RCRA waste codes on the Part A permit application. Issue technical paper documenting each code and initiate any necessary changes.
- Issue a quarterly progress report regarding the status of SST compliance activities in the ECSS Quarterly Report

Regulatory Reporting

- Issue Annual Dangerous Waste Report
- Issue EPCRA 312 Report
- Issue EPCRA 313 Report
- Issue Generator Annual Dangerous Waste Report
- Issue TSD Annual Dangerous Waste Report

Surface Decontamination

- Reduce surface soil contamination by 150K square feet

- Replacement of three existing transfer lines
- Construction of several new transfer routes within the "A Farm Complex" located in the 200 East Area. All new pipelines will include secondary containment of waste, leak detection capabilities, and cathodic protection to ensure regulatory compliance.
- Application of special protective coatings within pits used for waste transfer operations associated with the DST farms.

Electrical

- Upgrade existing electrical power for primary ventilation systems in Tank Farms 241-AN, -AP, and -AW to provide for backup power capabilities.
- Upgrade/replace existing electrical equipment to support the primary/annulus ventilation systems for the DSTs, as well as for the 244-A/244-S DCRTs.
- Upgrade/replace existing electrical equipment to support SSTs' clean/controlled/stable operation.
- Safety analyses and other documentation required to demonstrate the project's compliance with the Tank Farm safety basis, including updates to existing facility-specific safety analysis reports.
- National Environmental Policy Act (NEPA) documentation to support the W-314 upgrades, i.e., Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Project W-314 instrumentation, ventilation, and electrical upgrades (note: W-314 waste transfer upgrades addressed in the TWRS Environmental Impact Statement).
- Approved regulatory permits (Clean Air Act, Dangerous Waste Act, etc.) to support construction/operation the modified tank farm systems.
- Completed quality records as required by the project's Quality Assurance program.
- Completed plant as-built drawings documenting the Project W-314 modifications to existing facilities and systems.

1.1.1.2.1.3.27 (1N1F8C) PROJECT W-030 TF VENTILATION UPGRADES

- Complete Construction for W-030, Tank Farm Ventilation Upgrades (M-43-01B)
- Project W-030, Tank Farm Ventilation Upgrade, Complete FSAR
- Project W-030, Complete Final Tie-In
- Project W-030, Complete Testing
- Project W-030, Complete Tank Farm Ventilation Upgrades (M-43-01)
- Project W-030, Begin Operation, Tank Farm Ventilation Upgrades (M-43-01C)
- Project W-030, Completion of Punchlist Closeout

1.1.1.2.1.3.19 LIGHT DUTY UTILITY ARM

INACTIVE

1.1.1.2.1.3.20 (1N1F21) ETF TRAINING & PROCEDURES

- Administrative procedures upgrades to support organization changes.
- Procedure changes to support Operational Safety Requirements implementation.
- Existing procedures will be managed to ensure that all procedures are reviewed at least bi-annually.
- Existing procedures will be revised or modified before the number of changes exceeds five to any revision.
- Existing procedures will be revised or modified before changes to any revision are greater than six months old.
- Approximately half of the existing procedure base will be issued every 12 months.
- Emergency procedure changes to support re-engineering.
- Provide Initial, Continuing, Regulatory required training support for:

  - Normal progression of personnel in the operating organization.
  - Training needed as a result of position changes due to re-engineering.
  - Training needed as a result of position changes due to downsizing.

1.1.1.2.1.3.21 UPGRADES PROGRAM MANAGEMENT

INACTIVE

1.1.1.2.1.3.22 (1N1F82) UPGRADES QUALIFICATION LIFE EXTENSION

- DST Corrosion Monitoring Trade Study
- DST Corrosion Control Procedures
- DST Corrosion Control, 1st Tank
- Hanford Soil Corrosion Coupons, 4 yr

1.1.1.2.1.3.23 (1N1F83) LONG LENGTH EQUIPMENT/TRANSFER PUMP

- Waste Generator Characterization Plan (WHC Other, FY 1995)
- Release of a process path document for the removal, transport, and storage of long-length contaminated equipment (WHC Other, FY 1997)

- Provide operations support and technical support to maintain base safe operations for the project.
- Provide engineering support for oversight, evaluation and analysis capability.
- Provide for emergency pumping of leaking Single-Shell Tanks and pump as required.
- Provide for the coordination of the Reengineering of East Tank Farm Transition Project.
- Provide funding for Facilities Evaluation Board scheduled to analyze East Tank Farm Transition Project.
- Provide for Design Authority engineers who perform technical reviews, and approvals, Authorization/Safety Basis reviews and approvals, and develop and maintain technical baseline.
- Develop plan to resolve 107-AN Caustic issue.
- Install ENRAFs to achieve liquid level monitoring capabilities of 241-C Single Shell Tank Farm.
- Provide program monitoring, requirements, communications, and control for Tank Waste Remediation System (TWRS) in support of controlled, clean, and stable mission.
- Pumping preparations and pumping of A-101 and AX-101.
- Provide continued Training Program in accordance with DOE Order 5480.20A.
- Review all procedures in accordance with Waste Tank Administration Manual (WHC-IP-0842, Section 7.6).
- Provide for compliance with all Environmental Engineering, Permitting and Regulatory Compliance issues.
- Provide program management for Inactive Miscellaneous Underground Storage Tanks (IMUSTs).
- Conduct emission and effluent engineering and permitting functions.
- Handle solid waste generated from Waste Tank operations and maintenance activities in a safe, compliant and cost effective manner.
- Maintenance and development of the Interim Operational Safety Requirements for the Tank Farms.

The major end-item deliverables associated with this WBS element (project end of life planned for June 2005) will include the following:

- Completed tank farm system upgrades that support the TWRS mission. Specifically, these upgrades will include:

Instrumentation

- Upgrade selected instrumentation and monitoring systems associated with the DSTs and associated waste transfer systems, including installation of new devices for measuring primary tank liquid level, temperature, and vapor pressure.

- Waste transfer systems upgraded to allow for route verification and waste transfer verification.

- Leak detection upgrades for the DSTs' annuli, leak detection pits, process/support pits, cleanout boxes, and selected transfer lines.

- Modernization of the master pump shutdown system and associated alarms associated with DST operations.

- Installation of a data acquisition network that will gather specified tank farm data, display/alarm the data locally and at selected remote locations, and interface the existing Tank Monitoring and Control System (TMACS) to support safe and efficient operation of the tank farm facilities.

Tank Ventilation

- Replacement of primary tank ventilation systems for Tank Farms 241-AN, -AP, and -AW, including installation of new exhaust air clean-up trains, exhaust stack, stack monitors, and control systems.

- Installation of new seal pots and associated piping to collect condensate from the new ventilation systems and return it to the DST system.

- Replace the annulus ventilation system for the 241-SY Tank Farm

- Replace the ventilation systems for the 244-A and 244-S double contained receiver tanks (DCRTs).

- Removal/disposal of existing exhaust ventilation system components which are replaced by the project, with the exception of underground duct work.

Waste Transfer

- Installation of new valve manifold assemblies in selected pits to support DST waste transfer operations.

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- Project W-030, Completion of Official Acceptance of Construction (OAC) by 1/31/97
- Project W-030, Completion of the four C's (Construction, Completion and Cost closing statement) within 120 days of OAC III

1.1.1.2.1.3.28 PERFORMANCE MEASUREMENT

INACTIVE

1.1.1.2.1.3.29 DISPOSITION EAST AREA REUSABLE MATERIALS

INACTIVE

1.1.1.2.1.3.30 (1N1F8D) SAFETY AND LICENSING PROGRAM MANAGEMENT

- Complete Contract Transition
- Issue Tank Farm Basis for Interim Operation (BIO) for RL approval

1.1.1.2.1.3.31 (1N1F8E) DISPOSITION EXCESS FACILITIES

- Issue Facility and Hazard Assessment Report for 244AR Facility
- Issue Facility and Hazard Assessment Report for 209E Facility

2. STATEMENT OF WORK

- Perform scheduled component-based recall system, preventive maintenance, high-efficiency particulate air (filter) testing, and third party inspections.

- Corrective maintenance includes identifying deficiencies, fixing and replacing failed equipment.

- Waste tank transfers, performing jumper changes and pump removals as required, rail car and tanker truck transfers.

- Radiological control performing personnel and work place surveys, monitor source checks, and PCM1B checks.

- Obtaining panel board/management control system surveillance data, condensate basin readings, vessel ventilation system readings, ion-exchange column readings, and canyon area ventilation surveillance data.

- Develop operating strategies/plans, process improvements, trending and review of operating data, monitoring process limits, ensuring technical accuracy, and process problem resolution.

- Provide for the continued development and submittal of 5480.22 and 5480.23 compliant FSAR and TSR documents for the Manage Tank Waste Function (excluding concentrate waste). Also provides for the review and oversight of the FSAR/TSR preparation. Preparations to transition to the Final Safety Analysis Report (FSAR) and to implement the Technical Safety Requirements (TSR) will be completed.

- Inspect, test and analyze DST corrosion through Corrosion Monitoring program.

- Develop standard protocol and hardware for the disposal of Long Length contaminated equipment.

- Provide the engineering, management, liaison, contractor/sub-contractor interface and project management support to install Tank Monitoring and Control System (TMACS) in 241-AW.

- Project W-314, Tank Farm W-314 MSA Upgrade.

- Project W-030, AY/AZ Farm Ventilation Upgrades.

- Finalize and issue Tank Farm Basis for Interim Operation (BIO).

- Disposition excess facilities 209-E and 244-AR.

- The following approved FY 1996 carryover work scope:

  - 1N1F38-Issue BIO for RL approval
  - 1N1F38-Issue Interim OSRs for RL approval
  - 1N1F38-Issue TSR-IP for RL approval
  - 1N1F82-Prototype Corrosion Probe Report Complete
  - 1N1F82-DST Corrosion Monitoring-1st Tank Complete
  - 1N1F8C-Project W-030 TF Vent Upgrade-Readiness Review

- Systems Engineering Functions and Requirements:

  - 4.2.1.1 Store Managed Tank Waste
  - 4.2.1.3 Transfer Managed Tank Waste
  - 4.2.1.4 Concentrate Waste

Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Rev.0

Milestone Control No T21-99-606 **Revision/CIN:** 0
WBS Number 1.01.01.02.01.04.0012 **Due Date:** 9/30/99
ADS No: 1100

Title: Complete Saltwell Pumping of 8 SST's (P-41-27-T04) **Schedule ID:** N1G7C0906

Scheduler: Jorgensen

Milestone Level:	**Deliverables**	**Addressed To:**
[x] TPA P-41-27-T04	[ ] Report	[ ] DOE-HQ
[ ] DOE-HQ	[x] Letter	[x] DOE-RL
[ ] DOE-FO	[ ] Drawing	[ ] Other (Specify)
[ ] DOE-RL	[ ] Other (Specify)	
[ ] Contractor		

Description of this Commitment:
Conduct saltwell pumping activities on a schedule to complet pumping of eight single-shell tanks.

Description of what Constitutes Completion of the Commitment:
Reduction by pumping of remaining liquid in each tank to or below the specified stabilization criteria.

Acceptance Criteria:
Stabilization certification for each of eight tanks.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date

HIGH HEAT - 1.1.1.2.02.04

OBJECTIVE	MEASURE	EXPECTATION (RL GUIDANCE)	MYWP PLANNING
TWR1 Resolve known tank safety issues.	TWR1.4 Resolve high heat tank safety issue.	TWR1.4.1 Remove sufficient high-heat sludge from Tank 106-C to reduce the heat load to less than 40,000 BTU/hour by April 1997.	Milestone not identified.

(DOLLARS IN THOUSANDS)

TANK WASTE REMEDIATION SYSTEM

TWRSR&A: MYP_PRJ2.W 09/20/96

FY 1997 MYWP COST PROFILE BY MONTH *

WBS	ADS	FUND	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
TWRS PROJECT															
1.1.1.3.1.1.4															
H.T.I.															
	RL06WT51	EXP	697	537	501	616	753	756	759	732	571	396	355	327	7,000
		C/E	0	0	0	0	0	0	0	0	0	0	0	0	0
		LI	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL – BCWS / PMB (1)			**697**	**537**	**501**	**616**	**753**	**756**	**759**	**732**	**571**	**396**	**355**	**327**	**7,000**
Mgmt. Reserve (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Line Item Contingency (2)			0	0	0	0	0	0	0	0	0	0	0	0	0
Expected Carryover (3)			0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			**697**	**537**	**501**	**616**	**753**	**756**	**759**	**732**	**571**	**396**	**355**	**327**	**7,000**

*** Monthly Profile Based Upon P3 Calendar Month Profile, NOT Realized Hours Calendar.**

(1) Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measeurement Baseline (PMB).
(2) Management Reserve; And Line Item Contingency Held By DOE–RL
(3) Includes Expected Carryover Requested By M.Y.W.P. Submittal (Monthly Spread Incorporates Carryover by Fund Type)

Attachment 15.5-3 Cost Baseline for Execution Year by Fund Type by Month (Page 5)

Westinghouse Hanford Company
Tank Waste Remediation System
Milestone Description Sheet

Milestone Control No T33-97-607
WBS Number 1.01.01.03.03.01.0002

Revision/CIN: 0
Due Date: 9/30/97
ADS No: 1240
Schedule ID: H12675A

Title: SUBMIT A REPORT SUMMARIZING THE TESTING OF ENHANCED SLUDGE WASHING AND RELATED TANK WASTE SLUDGE PRETREATMENT METHODS FOR SAMPLES OF TANK WASTE SLUDGE (M-50-03-T2C)

Scheduler:

Milestone Level:

[x] TPA M-50-03-T2C
[ ] DOE-HQ
[ ] DOE-FO
[ ] DOE-RL
[ ] Contractor

Deliverables

[ ] Report
[ ] Letter
[ ] Drawing
[x] Other (Specify) Report and Letter

Addressed To:

[ ] DOE-HQ
[ ] DOE-RL
[x] Other (Specify) WDOE & EPA by DOE-RL

Description of this Commitment:

Perform testing of enhanced sludge washing and related tank waste sludge pretreatment methods using actual tank waste samples. Document and issue results of testing completed to that time. This annual report will also document preliminary candidate tank waste pretreatment sequence and tank blending strategies. Goals for both early progress on waste immobilization and minimation of the production of high-level waste glass will be addressed in these strategies.

The preliminary strategies will be utilized to predict the production of high-level waste glass associated with candidate enhanced sludge washing and related tank waste sludge pretreatment methods. The prediction of the HLW glass volume production will be updated.

Description of what Constitutes Completion of the Commitment:

A report that has been approved by the PHMC contractor and DOE-RL and cleared for public release is transmitted to the WDOE by DOE-RL.

Acceptance Criteria:

The report will include the latest laboratory data available on sludge washing and enhanced sludge washing tests performed through the second quarter of FY 1997 and the expected impacts on HLW glass volume will be provided. The report is transmitted to WDOE by DOE-RL.

MDS APPROVAL

WHC Responsible Manager/Date

DOE Manager/Date

COMPLETION APPROVAL

Date Milestone Was Completed

WHC Responsible Manager/Date

DOE Manager/Date