Energy Systems Environmental Restoration Program
ORNL Environmental Restoration Program

**Project Management Plan for Inactive
Tanks 3001-B, 3004-B, 3013, and T-30
at Oak Ridge National Laboratory,
Oak Ridge, Tennessee**

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Oak Ridge National Laboratory

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Project Management Plan for Inactive Tanks 3001-B, 3004-B, 3013,
and T-30 at Oak Ridge National Laboratory,
Oak Ridge, Tennessee

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ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DOE	U.S. Department of Energy
DOE-ORO	DOE Oak Ridge Operations Office
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
ES&H	environmental, safety, and health
FFA	Federal Facility Agreement
HP	Health Physics
IH	Industrial Hygiene
LLLW	liquid low-level radioactive waste
NEPA	National Environmental Policy Act
ORNL	Oak Ridge National Laboratory
QA	quality assurance
TDEC	Tennessee Department of Environment and Conservation
WBS	work breakdown structure

PREFACE

This project management plan was prepared to describe the organizational responsibilities, schedules, and management controls needed to remove and dispose of three inactive liquid low-level radioactive waste (LLLW) tanks and to fill one inactive LLLW tank with grout at ORNL. The *Program Management Plan for the Martin Marietta Energy Systems, Inc., Oak Ridge National Laboratory Site Environmental Restoration Program*, ORNL/ER-167, provided the guidance for preparation of this plan. This document was prepared under Work Breakdown Structure 6.1.01.21 (Activity Data Sheet 3301, "Inactive Tanks").

EXECUTIVE SUMMARY

This document identifies the roles and responsibilities of the project team members and identifies the project scope, schedule, and cost reporting activities for a maintenance activity to remove and dispose of three inactive liquid low-level radioactive waste (LLLW) system tanks and to isolate and fill one LLLW tank with grout.

Tanks 3001-B, 3004-B, and T-30 are located in concrete vaults and tank 3013 is buried directly in the soil. The maintenance project consists of cutting the existing pipes attached to the tanks; capping the piping to be left in place; removing the tanks and filling the vaults with grout for tanks 3001-B, 3004-B, and T-30; and filling tank 3013 with grout. Because the LLLW line serving tank 3001-B will be needed for discharging the 3001 canal demineralizer back flush and regeneration waste to tank WC-19, tank 3001-B will be replaced with a section of piping.

1. INTRODUCTION

1.1 PURPOSE

This project management plan identifies the major activities involved in the maintenance action to remove and dispose of inactive liquid low-level radioactive waste (LLW) tanks 3001-B, 3004-B, and T-30 and to grout tank 3013 in place at the Oak Ridge National Laboratory (ORNL). The plan also identifies the organizations that will perform the required management functions.

1.2 SCOPE

The scope of this project is to remove and dispose of three inactive LLW tanks and grout one inactive LLW tank in place, isolate any remaining pipes and equipment, fill the remaining vaults with suitable grout, and back fill any excavations with suitable back fill.

1.3 JUSTIFICATION

Removing and disposing of inactive LLW tanks or filling them with grout will eliminate any future liability for surveillance and maintenance of the tanks and will allow them to be removed from the list of inactive tanks in the Federal Facility Agreement (FFA).

2. OBJECTIVES

2.1 MISSION AND GOALS

The mission of the U.S. Department of Energy (DOE) Environmental Restoration (ER) Program is to either eliminate or reduce to prescribed safe levels the risks to the environment or to human health and safety posed by inactive or surplus DOE-managed sites and facilities that have been contaminated by radioactive, hazardous, or mixed wastes. This mission is to be accomplished in conformance with all federal, state, and local environmental statutes and regulations.

The specific objective of this project is to provide for closure of four inactive LLW tanks and thus remove them from the list of inactive (Category D) tanks in the FFA.

2.2 TECHNICAL OBJECTIVES

The technical objectives of the inactive tank remediation program are to remove the inactive tanks from their present locations, treat them as required and dispose of them as solid

low-level radioactive waste or to secure them in place by filling them with grout. The project will include the following activities:

- removing tank 3001-B from its vault, restoring the waste discharge line from the 3001 canal demineralizer to tank WC-19, and filling the vault with grout;
- removing tank 3004-B from its vault, cutting and capping all piping connected to the tank, and filling the tank vault and adjacent valve pit with grout;
- cutting and capping all piping connected to tank 3013 and filling the tank with suitable grout; and
- removing tank T-30 from its vault, cutting and capping all piping connected to the tank, and filling the vault with grout.

Tanks and any piping and equipment that is removed either will be transported to Scientific Ecology Group for smelting or will be stored at the appropriate ORNL waste storage facility as solid low-level radioactive waste (see Sect. 3.4.2).

2.3 SCHEDULE OBJECTIVES

The primary schedule objectives for the tank maintenance project are to receive approval of the comprehensive work plan by the end of June 1995, start field activities in July 1995, and complete tank maintenance activities and site restoration activities by mid-September 1995. To ensure adherence to the overall project schedule, more detailed activities and milestones have been established and are listed in Chap 6.

2.4 COST OBJECTIVES

The cost objective for this project is to accomplish removal and disposal or grouting of the tanks at minimum cost while meeting all regulatory requirements.

3. MANAGEMENT ORGANIZATION AND RESPONSIBILITIES

The ORNL ER Program organization and the roles and responsibilities of the key management positions are described in Chap. 3 of the *Energy Systems Program Management Plan* (Energy Systems 1994).

The responsibilities and duties of participants in this specific project are described in Sects. 3.1 through 3.5 of this document and in Chap. 4 of the *Energy Systems Program Management Plan* (Energy Systems 1994). The organizational structure for implementation of the maintenance project is shown in Fig. 1.

523A-H&R

Fig. 1. Inactive tank maintenance action project organization.

3.1 DEPARTMENT OF ENERGY OAK RIDGE OPERATIONS OFFICE

The DOE Oak Ridge Operations Office (DOE-ORO) is ultimately responsible for all activities on the Oak Ridge Reservation. DOE-ORO will provide overall project management, including oversight of all Title I, Title II, and Title III documents and activities and administration of all prime contracts. All participants will be under contract to the DOE-ORO or its contractors. Any coordination with the U.S. Environmental Protection Agency (EPA) and the Tennessee Department of Environment and Conservation (TDEC) will be DOE's responsibility.

3.2 LOCKHEED MARTIN ENERGY SYSTEMS, INC.

Lockheed Martin Energy Systems (Energy Systems) is the Facilities Manager at ORNL under an existing cost-plus-award-fee prime contract. Energy Systems will perform or oversee all Title I and Title II engineering design work and will have overall responsibility for Title III activities; provide environmental, safety, and health (ES&H) support services throughout field work (e.g., contaminated waste disposal); and provide project and subcontractor management services. Energy Systems will act as the Integrating Contractor with the responsibility for assisting DOE-ORO in the coordination of contractor activities and the compilation of planning, performance, and reporting information generated by contractor participants.

3.3 FIXED-PRICE SERVICE SUBCONTRACTOR

The fixed-price service subcontractor will provide all personnel, facilities, labor, materials, tools, equipment, and services needed to perform the scope of work described in the statement of work (Energy Systems 1995a) and the service contract specification, and any addenda if applicable, for Inactive Tanks 3001-B, 3004-B, 3013, and T-30 (Energy Systems 1995b).

3.4 MANAGEMENT PLANS

3.4.1 Configuration Management Plan

No safety class items or safety systems are involved in this project. Upon completion of the field work, the system configuration will be documented on as-built drawings in accordance with Martin Marietta Energy Systems Engineering Procedure EP-C-35 and the tanks will be removed from the FFA Appendix F listing of Category D tanks. A separate project-specific configuration management plan will not be prepared.

Configuration management activities will be consistent with Annex C of the *Management Plan for the Oak Ridge Operations Environmental Restoration Program* (Energy Systems 1991).

3.4.2 Waste Management Plan

A waste management plan, ORNL/ER-304, has been prepared by Energy Systems to address the management of wastes produced during the implementation of the tank maintenance activities. The waste management plan is consistent with ORNL/ER-288/R1.

3.4.3 Records Management Plan

Project Records Plan for Inactive Tanks Remediation Program, X1995-0010, has been prepared by Energy Systems and will be followed by each participant.

4. WORK PLAN AND PERFORMANCE CRITERIA

The service contractor will remove or grout the tanks in accordance with the statement of work for Inactive Tanks Program Tanks 3001-B, 3004-B, 3013, T-30 (Energy Systems 1995a).

Performance criteria are contained in the service contract specification for Inactive Tanks 3001-B, 3004-B, 3013, and T-30 (Energy Systems 1995b).

5. PROJECT SUMMARY WORK BREAKDOWN STRUCTURE

The project summary work breakdown structure (WBS) is shown in Fig. 2.

All project participants will manage and schedule work, collect costs, and report at the project summary WBS level 6 or lower.

6. SCHEDULE

The project schedule is shown in Fig. 3.

534A-H&R

Fig. 2. Project work breakdown structure.

Fig. 3. Project schedule.

7. COST ESTIMATES

The baseline cost estimate will be regularly reviewed and updated, as required, by all participants to ensure that the estimate reflects the latest authorized scope, technical requirements, schedule, and other cost elements in accordance with DOE-ORO change control policy. All changes in the estimated cost will be documented to provide continuity between estimates, and the reasons for all changes since the previous approved estimate will be given.

8. COST AND SCHEDULE CHANGE PROCEDURES

Cost and schedule change procedures will be consistent with ER Program requirements and the project change order process.

9. PROJECT MANAGEMENT, MEASUREMENT, AND PLANNING AND CONTROL SYSTEMS

Integrated DOE and Energy Systems cost accounting and engineering manpower systems will be used to manage the cost, manpower, scheduling, and technical performance of this project.

10. INFORMATION AND REPORTING

Typical data to be received by the Energy Systems engineering project engineer from other contractors and integrated into the actual cost and schedule performance data include the following:

- cost performance report;
- status reports containing funding information to track budget authorizations and budget outlays, commitments, and accrued costs; and
- progress, accomplishments, problems, impacts, and corrective actions.

The Energy Systems engineering project manager will prepare the project monthly report and issue it for consolidation with ER Program reports. Commitments made throughout this document are summarized in Table 1.

Early warning of events that might cause significant impact on project scope, budget, or schedule must be reported as required in Secretary of Energy Notice 27.

**Table 1. Inactive Tanks Program—Tanks 3001-B, 3004-B, 3013, and T-30
project management plan commitments**

Commitment	Responsibility
Monthly cost and status reports	All participants
Monthly status reports to DOE	Energy Systems
Project performance measurements	All participants
Quality Assurance Evaluation	Energy Systems
Risk Assessment	Energy Systems
Project waste management plan	Energy Systems
Project records plan	Energy Systems
Preliminary estimate	Energy Systems
Detailed estimate	Energy Systems
Baseline cost estimate review	All participants

The service contractor will prepare and submit a monthly report as described in Chap. 7 of the statement of work (Energy Systems 1995a).

11. QUALITY, RISK, SAFETY, AND NEPA DOCUMENTATION

11.1 Quality Assurance (QA)

Quality Assurance Evaluation No. QAE-X-95-ENGR-251 designates this project as Q-CATEGORY III. Standard Engineering procedures, guidelines, and practices will be sufficient to control the engineering and construction-quality-related activities of the project. The Subcontractor Industrial Hygiene (IH) personnel will monitor the construction activities and will advise the Construction Engineer if any additional personnel/environmental protection practices are required. Energy Systems Health and Safety personnel will provide oversight and technical assistance. The IH, HP, and QA requirements for the service contractor are defined in the service contract specification (Energy Systems 1995b).

11.2 Risk

The risk assessment on the four tanks shows that the risks to human health and the environment are below the EPA target range and do not exceed a 10^{-6} risk level.

11.3 Safety

The safety assessment (Energy System 1995c) categorizes the four tanks as Industrial Facilities in accordance with appropriate guidelines.

11.4 NEPA

Categorical exclusion CX-X10-442 (3042X), *Removal from Service and/or Permanent Closure of Liquid Low-Level Radioactive Waste Tank Systems at ORNL*, provides the required NEPA documentation for this project.

12. REFERENCES

Energy Systems. 1995a. *Statement of Work—Inactive Tanks Program Tanks 3001-B, 3004-B, 3013, and T-30 for the ORNL Environmental Restoration Program*, Oak Ridge National Laboratory, April 21, 1995.

Energy Systems. 1995b. Service Contract Specification for Inactive Tanks 3001-B, 3004-B, 3013, and T-30 - X-10 Plant—ESO: PX483G-01, April 19, 1995.

Energy Systems. 1995c. *Project Safety Assessment Inactive Tanks Remediation Program*, ORNL/ENG/SA-2390, Oak Ridge National Laboratory, April 11, 1995.

Energy Systems. 1994. *Program Management Plan for the Martin Marietta Energy Systems, Inc., Oak Ridge National Laboratory Site Environmental Restoration Program*, ORNL/ER-167, Oak Ridge National Laboratory, 1994.

Energy Systems. 1991. *Management Plan for the Oak Ridge Operations Environmental Restoration Program*, DOE/ORO 931, rev. 0, U.S. DOE-ORO, Oak Ridge, Tennessee, March 1991.

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