Y-12

Y/ER-247

**OAK RIDGE
Y-12
PLANT**

MARTIN MARIETTA

Environmental Compliance Plan for the Y-12 Central Mercury Treatment System Project

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DEPARTMENT OF ENERGY

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ENVIRONMENTAL COMPLIANCE PLAN
FOR THE
Y-12 CENTRAL MERCURY TREATMENT SYSTEM PROJECT

September 1995

Prepared by:

9/10/95
S.T. McComb, Environmental Compliance Manager ATI Date

Concurred with:

9/18/95
A.C. Williamson, Technical Manager Date

Concurred with:

9/19/95
J.A. Baker, Design Manager Date

Concurred with:

9/20/95
L.A. Wessel, Construction Manager Date

Approved by:

9/20/95
J.H. Vanderlah, Project Manager Date

Energy Systems Environmental Restoration Program

**Environmental Compliance Plan
for the Y-12 Central Mercury
Treatment System
Project**

September 1995

Prepared for the
U.S. Department of Energy
Office of Environmental Management
under budget and reporting code EW 20

Environmental Management Activities at the
OAK RIDGE Y-12 PLANT
Oak Ridge, Tennessee 37831-8169
managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

PREFACE

This Environmental Compliance Plan is specific to the construction phase of the installation of the Central Mercury Treatment System (CMTS) at the Oak Ridge Y-12 Plant. This document was prepared under Work Breakdown Structure 1.4.12.1.1.03.44 (Activity Data Sheet ER 2303, "Central Mercury Treatment System"). It was prepared to support the Lockheed Martin Energy Systems, Inc. (Energy Systems), Reduction of Mercury in Plant Effluent (RMPE) program. The purpose of this project Environmental Compliance Plan is to elaborate upon the compliance requirements outlined by the project plan; define the roles, responsibilities, and relationships needed to effectively implement requirements; define environmental compliance oversight activities; and establish environmental compliance record keeping and reporting requirements.

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EXECUTIVE SUMMARY

The objective of the Central Mercury Treatment System (CMTS) project is to install a system in Building 9623 to treat mercury-contaminated groundwater from sumps located in the basements of Buildings 9201-4, 9201-5, and 9204-4 so that discharges from the new outfall (Outfall 551) are within the National Pollutant Discharge Elimination System limits for mercury (Hg) and pH. This Environmental Compliance Plan elaborates upon the compliance requirements outlined by the project plan by defining roles, responsibilities, and relationships needed to effectively implement requirements; defining environmental oversight activities; and establishing environmental compliance record keeping and reporting requirements. This plan presents the environmental management regulatory requirements and the project's plan for compliance.

This project will be performed pursuant to a National Environmental Policy Act Categorical Exclusion (CX-Y12-338). An air permit exemption letter has been prepared (Y/TS-1394) to document the rationale for not requiring a Tennessee Air Pollution Control Board Permit.

ACRONYMS

CMTS	Central Mercury Treatment System
CX	categorical exclusion
D&D	decontamination and demolition
DOE	U.S. Department of Energy
EMD	Environmental Management Division
Energy Systems	Lockheed Martin Energy Systems, Inc.
FPSC	fixed price subcontractor
ID	identification
LDR	land disposal restriction
MK-F	MK-Ferguson
MSDS	Material Safety Data Sheet
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RMPE	Reduction of Mercury in Plant Effluent
SPCC	Spill Prevention Control and Countermeasures
TDEC	Tennessee Department of Environment and Conservation

1. INTRODUCTION

1.1 ENVIRONMENTAL COMPLIANCE PLAN OBJECTIVE

The purpose of this Environmental Compliance Plan is to elaborate upon the compliance requirements outlined by the project plan; define roles, responsibilities, and relationships needed to effectively implement requirements; define environmental compliance oversight activities; and establish environmental compliance record keeping and reporting requirements.

This project Environmental Compliance Plan promotes compliance with all applicable Y-12 Plant, state, and federal requirements and shall not be modified without written concurrence of the project team and written approval of the project manager. Major changes in the scope of work or site conditions will result in an addendum to this project Environmental Compliance Plan. The addendum will be approved by the project manager and submitted to the U.S. Department of Energy (DOE) for information.

1.2 TECHNICAL OBJECTIVE

The technical objective is to install a system in Building 9623 to treat mercury-contaminated groundwater from sumps located in the basements of Buildings 9201-4, 9201-5, and 9204-4 so that discharges from the new outfall (Outfall 551) are within the National Pollutant Discharge Elimination System (NPDES) limits for mercury (Hg) and pH.

Studies conducted by the Reduction of Mercury in Plant Effluent (RMPE) team have resulted in the selection of filtration and carbon absorption as the most economical method for removing mercury from the groundwater collected in Building 9201-4, 9201-5, and 9204-4 sumps. This method will be used to meet the proposed limits of 2 parts per billion (ppb) mercury for the monthly average, 4 ppb mercury for the daily maximum, and a pH between 6 and 9.

2. REQUIREMENTS

2.1 REGULATORY REQUIREMENTS

The team has identified, ensured the adequacy of, and will comply with the requirements of applicable laws and regulations and applicable requirements of DOE orders. Table 2.1 shows the environmental management regulatory requirements and the project's plans for compliance.

Table 2.1. Environmental management regulatory requirements

Activity/Material	Requirements	Project compliance/assumption
<ul style="list-style-type: none"> Construction/demolition wastes, other than special wastes, resulting from construction, remodeling, repair, and demolition of structures and from road building 	<p>TDEC 1200-1-7-02(1)(b)(2)(xiii). The use of solely natural rock and dirt, pavement, and/or concrete or brick rubble as fill material is not required to have a permit.</p>	<p>MK-Ferguson (MK-F) will be responsible for installing clean fill material.</p>
<ul style="list-style-type: none"> Solid waste: garbage, refuse, and other non-RCRA (Resource Conservation and Recovery Act) hazardous discarded solid materials 	<p>40 CFR and TCA 68-31-104. Establishes solid waste management and disposal requirements.</p>	<p>FPSC and MK-F will be responsible for collection, storage, and proper disposal of solid waste generated per the Waste Management Plan.</p>
<ul style="list-style-type: none"> RCRA hazardous wastes <ul style="list-style-type: none"> — Hazardous waste storage 	<p>40 CFR 262.34, TDEC 1200-1-11-03(4)(e). RCRA hazardous waste must be accumulated and stored in accordance with requirements.</p>	<p>Energy Systems will be responsible for collection, storage, and proper disposal of hazardous waste.</p>
<ul style="list-style-type: none"> Hazardous waste storage restricted from land disposal (LDR) 	<p>40 CFR 268.50. Comply with labeling and record keeping requirements.</p>	<p>Any LDR waste will be properly labeled and appropriate records kept by Energy Systems.</p>
<ul style="list-style-type: none"> RCRA-listed or characteristic hazardous waste 	<p>40 CFR 268, TDEC 1200-1-11-.10. All RCRA waste generated must be treated to meet LDR treatment standards before land disposal in a Subtitle C permitted facility. RCRA waste not restricted from land disposal must be disposed of in a Subtitle C facility.</p>	<p>Any RCRA waste generated will be disposed of in a Subtitle C facility by Energy Systems Waste Management organization.</p>
<ul style="list-style-type: none"> Hazardous waste transportation 	<p>40 CFR 262, Subpart B; TDEC 1200-1-11-.03(3). Hazardous waste shipped off-site must be manifested.</p> <p>49 CFR 171-180.</p>	<p>Energy Systems will manifest all RCRA hazardous wastes resulting from materials the subcontractor brings to the construction site. Energy Systems will ensure that any transport of RCRA wastes off-site has an EPA identification number and is manifested appropriately.</p>

Table 2.1 (continued)

Activity/Material	Requirements	Project compliance/assumption
<ul style="list-style-type: none"> Hazardous waste transportation (continued) 	<p>40 CFR 263, TDEC 1200-1-11-.04. Transporters of hazardous waste must have transportation identification (ID) and a hazardous waste transport permit. Spill response, record keeping, and meets Department of Transportation (DOT) requirements.</p>	<p>Energy Systems Waste Management will ensure that all hazardous waste shipped will have a transport ID, spill response, record keeping, and meets DOT requirements.</p>
	<p>40 CFR 268.7(a), TDEC 12-1-11-.10(1)(a)5. Off-site shipment of hazardous waste must be accompanied by appropriate LDR notifications/ certifications.</p>	<p>Energy Systems Waste Management will ensure that all hazardous waste shipped off-site will be accompanied by all appropriate LDR notification/certifications.</p>
<ul style="list-style-type: none"> Polychlorinated biphenyls (PCBs) 	<p>40 CFR 761.</p>	<p>If any PCB-contaminated waste is encountered, project will require a Baseline Change Proposal.</p>
<ul style="list-style-type: none"> Rad Waste 	<p>10 CFR 61, 10 CFR 71.</p>	<p>Energy Systems Waste Management will manage the disposal of any radioactive waste generated by this project.</p>
<ul style="list-style-type: none"> Air Quality <ul style="list-style-type: none"> — Fugitive emissions 	<p>TDEC 1200-3-8-.01. Must take reasonable precaution to control fugitive dust. Fugitive dust must not be emitted as visible emissions beyond property boundary lines for more than 5 min/h or 20 min/d.</p>	<p>Dust suppression will be implemented by the FPSC and MK-F on an as-needed basis.</p>
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — Permitting 	<p>TDEC 1200-3-9. Establishes permitting requirements for air pollution sources.</p>	<p>Existing Y-12 Fugitive Air Emissions Permit will cover construction activities.</p>
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — Air toxics 	<p>TDEC Policy (8-1-91) on emissions of air toxics.</p>	<p>Decontamination and demolition (D&D) activities and FPSC construction activities are not expected to exceed acceptable ambient air concentrations.</p>
<ul style="list-style-type: none"> <ul style="list-style-type: none"> — Truck, equipment, tool cleaning and rinse water 	<p>40 CFR 122, TDEC 1200-4-10-.03. Discharges to waters of the state must be covered by an NPDES Permit.</p>	<p>Project will ensure that any wastewater discharged will be covered by the NPDES permit.</p>

Table 2.1 (continued)

Activity/Material	Requirements	Project compliance/assumption
— Sanitary wastewater	40 CFR 122, TDEC 1200-4-10.03. Discharges to waters of the state must be covered by an NPDES Permit.	Sanitary wastewater will be collected, treated, and discharged per established plant methods.
— Storage of oils or other hazardous substances	40 CFR 110 and 112. Establishes spill prevention control and countermeasures (SPCC) requirements.	FPSC and MK-F will prepare and implement an SPCC plan, if needed.
• Hazardous chemical inventory reporting [includes all materials requiring a Material Safety Data Sheet (MSDS)]	40 CFR 370. Facility owners or operators to submit reports by March 1 of each year.	FPSC and MK-F to submit inventory report to Environmental Management Division (EMD) by January 31 to allow preparation and submission to regulatory agencies by March 1.
• Toxic release inventory reporting (includes all toxic chemical waste data for past calendar year)	40 CFR 372. Facility owners or operators to submit reports by July 1 of each year.	FPSC and MK-F to submit inventory report to EMD by January 31 to allow preparation and submission to regulatory agencies by July 1.
• Release reporting	40 CFR 302. Establishes hazardous substance release reporting requirements.	The FPSC or MK-F shall immediately report <u>any</u> releases of hazardous substances or oils to the Plant Shift Superintendent and the project team.
NEPA	National Environmental Policy Act, 40 CFR 1500-1508, 10 CFR 1021, 10 CFR 1022. DOE guidelines for compliance with floodplain/wetland environmental review requirements. Executive Order 11988, floodplain management requirements.	CMTS construction is covered by categorical exclusion (CX-Y12-338).

2.1.1 NEPA Requirement

The Central Mercury Treatment System (CMTS) project is being conducted pursuant to CX-Y12-338 "Categorical Exclusion (CS) for Maintenance Support Activities," approved December 1993, and "Programmatic Agreement Among the Department of Energy Oak Ridge Operations Office, the Tennessee State Historic Preservation Office, and the Advisory Council on Historic Preservation Concerning Management of Historical and Cultural Properties at the Oak Ridge Reservation," approved May 6, 1994. Proposed changes to the project were reviewed in November 1994 and deemed to not represent a significant change of scope, and the approved categorical exclusion (CX) was judged valid. Activities involved in constructing the CMTS will be governed primarily by environmental protection statutes addressing water quality and solid waste management.

2.1.2 Air Monitoring Requirements

There will be no emission point sources requiring air permits. Construction activities such as grinding will require dust suppression to comply with fugitive air emission requirements. Fugitive dust emissions will be covered under the existing Y-12 Plant Fugitive Air Permits.

2.1.3 NPDES Monitoring Requirements

A Spill Prevention Control and Countermeasures (SPCC) Plan is now in place for the Y-12 Plant (Y/SUB/92-21704/1, August 1992). This plan can be supplemented, as necessary, to address any additional concerns related to the CMTS project. The fixed price subcontractor (FPSC) must develop and implement supplements to the SPCC Plan for any petroleum products or hazardous substances brought into the Y-12 Plant. An inventory record, including amounts, of all hazardous substances will be maintained by the subcontractor and submitted to the construction manager at the end of each calendar year and at project closeout. The subcontractor will report any release of petroleum products or hazardous substances immediately to the Plant Shift Superintendent, the construction manager, and the facility manager.

2.1.4 Central Mercury Treatment System Regulatory Requirements

Environmental requirements for the proposed Oak Ridge Y-12 CMTS project are outlined in Table 2.1. These requirements reflect a current understanding of the project and primarily address compliance with waste management, air pollution, and water pollution statutes.

2.1.5 Waste Disposal Requirements

A waste management plan has been prepared. No changes to the plan will be made without approval of the Configuration Control Board. The plan identifies all waste streams and their proper disposition.

3. ORGANIZATIONAL ROLES AND RESPONSIBILITIES

3.1 ENERGY SYSTEMS ENVIRONMENTAL MANAGEMENT DIVISION

Energy Systems Environmental Management Division via the environmental manager will maintain environmental oversight responsibility for the duration of the project. The environmental manager will be responsible for overseeing the environmental compliance of the project. The environmental manager's specific responsibilities include

- obtaining contractor signatures on environmental compliance documents as needed;
- developing and implementing environmental compliance plan and environmental oversight;
- coordinating with the DOE site office manager, DOE-ORO project manager, and environmental regulatory agencies to obtain approvals and concurrences;
- serving as the primary team contact for the environmental regulatory agencies;

- coordinating preparation of all environmental compliance documentation;
- serving as the primary interface with other plants and programs on environmental compliance issues; and
- ensuring that the team is knowledgeable of regulatory response times and technical/procedural requirements.

3.2 ENERGY SYSTEMS WASTE MANAGEMENT DIVISION

Waste generated by the CMTS construction activities will be handled in accordance with the project Waste Management Plan.

3.3 MK-FERGUSON, CONSTRUCTION MANAGER

The construction manager for the project will be responsible for all construction activities, health and safety compliance during construction activities, and proper disposition of nonradioactive and nonhazardous waste and materials.

3.4 REGULATORS

The CMTS process will be located in Building 9623 at Y-12, a location subject to investigation and remediation pursuant to the Oak Ridge Reservation Federal Facility Agreement. Tennessee Department of Environment and Conservation (TDEC) has been advised of the decision to construct the CMTS. Any comments and suggestions offered will be considered and incorporated, as appropriate. The agency will be encouraged to visit and observe the project.

4. REPORTING AND RECORDS MANAGEMENT

Project reporting will include only those reports required to manage the project efficiently.

4.1 HAZARDOUS CHEMICAL INVENTORY

An inventory record, including amounts of all hazardous substances (includes all materials requiring an MSDS) will be maintained by the subcontractor and MK-F and submitted to the construction manager at the end of each calendar year and at project closeout. The EMD will incorporate the inventory record into the Y-12 Plant report for submission to regulatory agencies by March 1 of the following year.

4.2 TOXIC RELEASE INVENTORY

An inventory record, including amounts, of all toxic chemical usage data will be maintained by the subcontractor and MK-F and submitted to the construction manager by May 10 of each calendar year and at project closeout. The EMD will incorporate the inventory record into the Y-12 Plant report for submission to regulatory agencies by July 1 of that calendar year.

4.3 RELEASE REPORTING

Any release of petroleum products or hazardous substances will be reported immediately to the construction manager or designee.

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