

LOCKHEED MARTIN



Y/ER-270

**ENVIRONMENTAL
RESTORATION
PROGRAM**

**Quality Assurance Project Plan
for the Chestnut Ridge Fly Ash Pond
Stabilization Project at the Oak Ridge
Y-12 Plant, Oak Ridge, Tennessee**

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Energy Systems Environmental Restoration Program

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for the Chestnut Ridge Fly Ash Pond
Stabilization Project at the Oak Ridge
Y-12 Plant, Oak Ridge, Tennessee**

Date Issued—July 1996

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Environmental Management Activities at the
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Oak Ridge, Tennessee 37831-8169
managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the
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QUALITY ASSURANCE PROJECT PLAN
FOR THE CHESTNUT RIDGE FLY ASH POND
STABILIZATION PROJECT

JULY 1996

APPROVAL SHEET

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PREFACE

This *Quality Assurance Project Plan for Chestnut Ridge Fly Ash Pond Stabilization Project at the Oak Ridge Y-12 Plant, Oak Ridge, Tennessee, Y/ER-270*, was prepared in accordance with requirements under the Comprehensive Environmental Response, Compensation and Liability Act for reporting project quality assurance requirements. This work was performed under Work Breakdown Structure 1.4.12.1.1.01.42.01 (Activity Data Sheet 2301). This document provides the Environmental Restoration Program with quality assurance requirements for the project.

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ABBREVIATIONS

CRFAPS	Chestnut Ridge Fly Ash Pond Stabilization
DOE	U.S. Department of Energy
Energy Systems	Lockheed Martin Energy Systems, Inc.
FWENC	Foster Wheeler Environmental Corporation
MK-F	MK-Ferguson of Oak Ridge Company
QA	quality assurance
QAPP	quality assurance project plan

1. INTRODUCTION

The Chestnut Ridge Fly Ash Pond Stabilization (CRFAPS) Project will stabilize a 19-m-high (62-ft-high) earthen embankment across Upper McCoy Branch situated along the southern slope of Chestnut Ridge. This task will be accomplished by raising the crest of the embankment, reinforcing the face of the embankment, removing trees from the face and top of the embankment, and repairing the emergency spillway.

The primary responsibilities of the team members are listed below.

- Lockheed Martin Energy Systems, Inc., (Energy Systems) will be responsible for project integration, technical support, Title III field support, environmental oversight, and quality assurance (QA) oversight of the project.
- Foster Wheeler Environmental Corporation (FWENC) will be responsible for design and home office Title III support.
- MK-Ferguson of Oak Ridge Company (MK-F) will be responsible for health and safety, construction, and procurement of construction materials.

Each of the team members has a QA program approved by the U.S. Department of Energy (DOE) Oak Ridge Operations. This project-specific QA project plan (QAPP), which is applicable to all project activities, identifies and integrates the specific QA requirements from the participants' QA programs that are necessary for this project.

This QAPP has been prepared by Energy Systems and is approved for use by the project manager after concurrence by the construction manager and the design manager.

The elements of this QAPP, based upon the criteria of DOE Order 5700.6C, are described below. Inasmuch as the existing, approved programs of the participants adequately address the requirements of DOE Order 5700.6C, the description of the elements in the QAPP is designed to identify the responsibilities of the participants relative to the implementation of the requirements.

Implementing procedures for each of the elements, which are applicable to this project, are identified in Appendix A.

2. PROGRAM

This program will be managed and staffed by an integrated team comprised of Energy Systems, FWENC, and MK-F personnel. Although individual organizations have been assigned specific responsibilities, the activities performed under the auspices of these organizations may be performed by employees of any of the organizations. The technical, administrative, and QA policies and procedures governing the activities within the responsible organization will be applicable to all personnel performing such activities.

The project activities, which are fully defined in the CRFAPS project plan, are summarized as follows.

- **Project Management**—Energy Systems will perform overall project management and provide project integration services. The project manager will have overall responsibility for ensuring that this project accomplishes its mission and objectives. The project manager reports to the Environmental Restoration Program remedial manager and to the Executive Oversight Group, consisting of the FWENC Environmental Restoration Waste Management program director, the president and general manager of MK-F, and the Energy Systems vice president for Environmental Restoration Waste Management programs.
- **Project Integration**—Cost, schedule, and progress reporting; project documentation; and maintenance of the construction cost estimates will be the responsibility of the business manager.
- **Technical Support**—Energy Systems will integrate the various contractors' technical efforts in support of project execution, including technical interface with all project team members of site preparation activities. This activity will be the responsibility of the technical manager.
- **Environmental Support**—Energy Systems will be responsible for overseeing environmental compliance of the project, including preparing environmental compliance documentation, developing and implementing an environmental compliance strategy and a compliance oversight plan, and serving as primary team contact for the regulators. This activity will be the responsibility of the environmental manager.
- **Design**—FWENC is primarily responsible for the remedial design packages to adequately describe the construction activities of the remediation subcontractor and will provide Title III home office engineering support. This activity will be the responsibility of the design manager.
- **Construction**—MK-F will procure services of a subcontractor to perform construction activities and will be responsible for all construction activities, which include procuring construction subcontracts, administering construction subcontracts, and conducting oversight of construction field activities to ensure compliance with project requirements. This activity will be the responsibility of the construction manager.

The project organization chart is depicted in Fig. 1.

3. PERSONNEL TRAINING AND QUALIFICATION

Since personnel may be matrixed between organizations, interorganizational training will be conducted for those personnel. Personnel performing activities on this project will complete appropriate indoctrination, orientation, and/or training and qualification related to the activities to be performed in accordance with the requirements of the organization responsible for the activity.

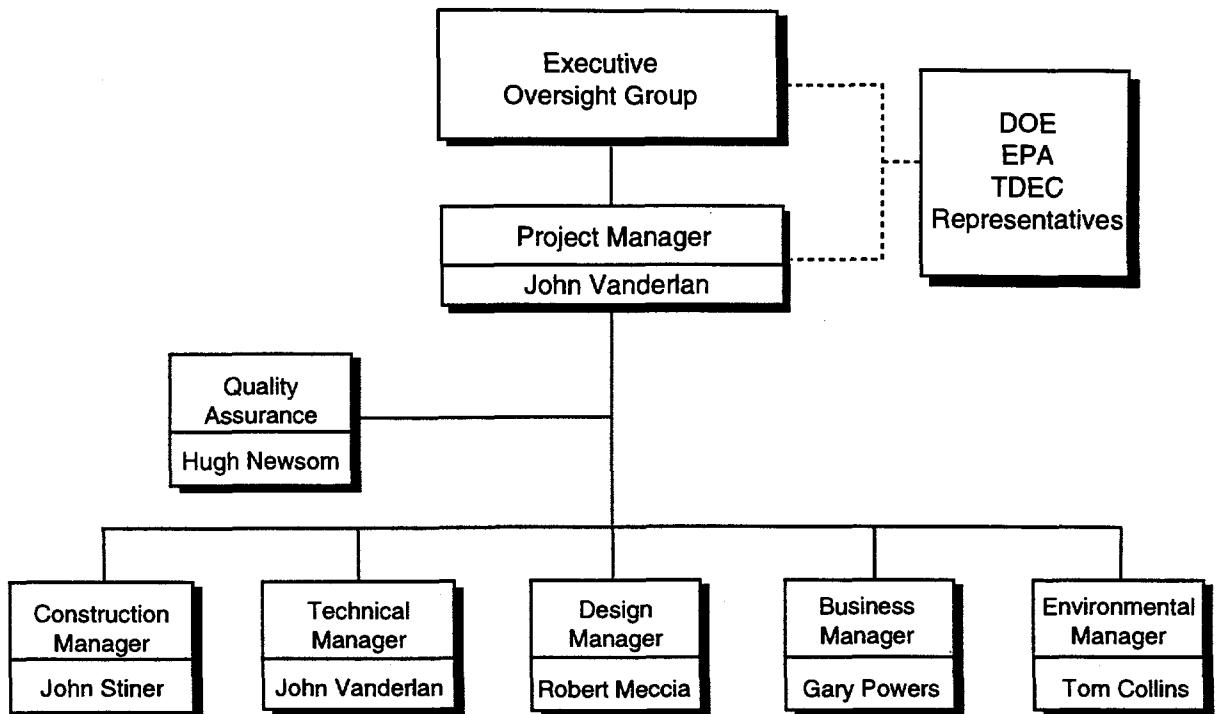


Fig. 1. Project organization chart.

4. QUALITY IMPROVEMENT

Identification, control, and correction of items and processes that do not meet established requirements will be performed in accordance with the policies and procedures of the organization responsible for the affected activities. Energy Systems will have control over all nonconforming items. All nonconformances will be reviewed by the Environmental Restoration Program, regardless of whether the nonconformances are generated by Environmental Restoration Program personnel, other prime contractors, or subcontractor personnel.

5. DOCUMENTS AND RECORDS

Documents and records specific to a particular activity will be generated, processed, and controlled by the respective participants under their own programs until such documents and records are required to be included in the official project file. At that time they will be submitted to the Environmental Restoration records management and Document Control Center manager located at the Oak Ridge K-25 Site in accordance with the records management plan for the Oak Ridge Y-12 Plant CRFAPS Project.

Energy Systems will be responsible for overall project records management.

6. WORK PROCESSES

Work processes will be controlled by each participant under its own program. Specific processes to be controlled are dependent upon activities performed.

All construction-related activities will be performed in accordance with MK-F program requirements and procedures.

Title III field activities will be performed by Energy Systems, with FWENC performing home office Title III support.

7. DESIGN

Design-related activities for this project will be the responsibility of FWENC. Therefore, all design activities will be performed in accordance with FWENC program requirements and procedures.

FWENC is responsible during Titles I and II design for identifying and listing critical design components whose failure would result in an impact to health, safety, environment, production cost overruns, or schedules.

8. PROCUREMENT

Procurement of all construction materials and services will be performed in accordance with MK-F program requirements and procedures.

Procurement of services by FWENC or Energy Systems for performance of activities under their responsibility will be performed in accordance with their respective program requirements and procedures.

Procurement of system components designated as critical components in the design phase will be purchased from manufacturers or vendors experienced in the production of such components.

9. INSPECTION AND ACCEPTANCE TESTING

Inspection and acceptance of construction features and services will be performed in accordance with technical requirements contained in the project specifications.

In its technical support and Title III role, Energy Systems will be responsible for inspection and acceptance of site preparation activities. The Energy Systems program requirements and procedures will govern activities for which it is the responsible organization.

Acceptance of services procured by MK-F or Energy Systems will be performed in accordance with their respective policies and procedures.

The owner of the measuring and test equipment used for inspection and acceptance testing will be responsible for its calibration and maintenance. Users of specific measuring and test equipment items will be responsible for compliance with calibration and maintenance requirements.

10. MANAGEMENT ASSESSMENT

Each participant will be responsible for assessing the adequacy and effectiveness of QA program implementation within the areas of their responsibility in accordance with the requirements of their respective programs.

The project manager will conduct management assessments as necessary to evaluate the overall adequacy of the quality programs and to identify any management barriers that would preclude successful completion of the project.

11. INDEPENDENT ASSESSMENT

Based upon the review of project activities, the project manager, QA manager, or Executive Oversight Group may initiate an independent assessment of specific project activities. The results of any such assessment will be provided to the project manager and Executive Oversight Group for appropriate action.

Appendix

MATRIX OF IMPLEMENTING PROCEDURES

The table below lists the implementing documents of each of the participant organizations that may be applicable to the respective elements of this QA plan. A procedure index follows the table.

Element	Energy Systems	FWENC	MK-F
1 Program	ES-QA-1.0 SPP-5402 ER/C-P1610		
2 Personnel Training and Qualifications	ESS-QA-10.0	E-87-OR	2A-2.2
3 Quality Improvement	QA-15.1 ESS-QA-15.0 QA-15.1 ESP-QA-16.3 OP-301 QA-312	E-69-OR E-72-OR	2A-15.1 2A-16.1 7A-3.3 1A-9.0
4 Documents and Records	ER/C-P1104/R1 ER/C-P1113/R1 ER/C-P1110	E-11-OR E-103-OR	1A-1.2 1A-1.3 1A-6.0
5 Work Processes	ESS-QA-12.0		1A-1.2 2A-12.1
6 Design		OR-2 E-11-OR E-21-OR E-30-OR E-68-OR E-69-OR E-103-OR OR-169	
7 Procurement	PC-164 PC-165	E-104-OR	2A-4.1 5A-1.0
8 Inspection & Acceptance Testing	ESS-QA-10.0 ESS-QA-12.0		
9 Management Assessment	ER/Y-II704 ER/Y-II600	QAI-010 QAI-011	2A-18.1
10 Independent Assessment	ER/Y-II600		

PROCEDURE INDEX

Energy Systems

ER/Y-I1704	<i>Management Assessments for Conduct of Operations</i>
ER/C-P1104/R1	<i>Technical Review of ER Program Documents</i>
ER/C-P1610	<i>Conducting Project Readiness Review</i>
ER/C-P1110	<i>Receiving, Processing, and Maintaining Environmental Restoration Program Records</i>
ER/C-P1113/R1	<i>ER Controlled Document Management</i>
ER/Y-I-1600	<i>Conducting Project or Activity Assessments</i>
ES-QA-1.0	<i>Quality Policy</i>
QA-312	<i>Issues Management Program</i>
ESP-QA-16.3	<i>Lessons Learned and Alerts Program</i>
ESS-QA-10.0	<i>Inspections</i>
ESS-QA-12.0	<i>Control of Measuring and Test Equipment</i>
ESS-QA-15.0	<i>Control of Nonconforming Items (and Services)</i>
QA-15.1	<i>Preparation of a Nonconformance Report (NCR)</i>
PC-164	<i>Service Subcontract Safety and Health</i>
PC-165	<i>Division Technical Review of Procurement Documents</i>
OP-301	<i>Occurrence Notification and Reporting</i>
SPP-5402	<i>Stop Work Authority</i>

FWENC

E-11-OR	<i>As-Built Drawings</i>
E-21-OR	<i>Preparation, Review, and Approval of Equipment Specifications and Data Sheets</i>
E-30-OR	<i>Preparation, Review, and Approval of Calculations</i>
E-68-OR	<i>Division of Responsibilities Among Disciplines</i>
E-69-OR	<i>Construction Interface Documents (CIDs), Design Change Notifications (DCNs) and Project Document Control Lists (PDCLs)</i>
E-72-OR	<i>Nonconformance Reports (NCRs)</i>
E-87-OR	<i>Training in Engineering and Related Procedures</i>
E-103-OR	<i>Preparation, Review, and Approval of Design Drawings and Specifications</i>
E-104-OR	<i>Review of Vendor Documents</i>

OR-2	<i>Assignment of Design Classifications</i>
OR-169	<i>Title III Engineering Services</i>
QAI-010	<i>General Surveillance Instruction</i>
QAI-011	<i>Preparing, Conducting, Documenting, and Logging of Audits</i>

MK-F

1A-1.2/2	<i>Construction Management Services Manual Document Management</i>
1A-1.3/0	<i>Document Control Program</i>
1A-6.0/1	<i>Records Management Program</i>
1A-9.0/2	<i>Occurrence Reporting</i>
2A-2.2/2	<i>Personnel Qualification and Training</i>
2A-4.1/3	<i>Procurement Document Control</i>
2A-12.1/1	<i>Control of Measuring and Test Equipment</i>
2A-15.1/2	<i>Control of Nonconformances</i>
2A-16.1/1	<i>Corrective Actions</i>
2A-18.1/2	<i>Construction Oversight Assessment</i>
5A-1.0/0	<i>Control of Procurement Process</i>
7A-3.3/5	<i>Construction Interface Document</i>

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