

JAN 27 1997

ORNL/ER-328



**ENVIRONMENTAL  
RESTORATION  
PROGRAM**

**Maintenance Action Readiness  
Assessment Plan for White Oak  
Creek and Melton Branch Weir  
Stilling Pool Cleanout  
at Oak Ridge National Laboratory**

RECEIVED  
FEB 06 1997  
OSTI

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

ph

**MASTER**

MANAGED BY  
LOCKHEED MARTIN ENERGY SYSTEMS, INC.  
FOR THE UNITED STATES  
DEPARTMENT OF ENERGY

UCN-17560 (6 8-95)

ENERGY SYSTEMS



Energy Systems Environmental Restoration Program  
ORNL Environmental Restoration Program

**Maintenance Action Readiness  
Assessment Plan for White Oak  
Creek and Melton Branch Weir  
Stilling Pool Cleanout  
at Oak Ridge National Laboratory**

Date Issued—August 1995

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

OAK RIDGE NATIONAL LABORATORY  
Oak Ridge, Tennessee 37831-6285  
managed by  
LOCKHEED MARTIN ENERGY SYSTEMS, INC.  
for the  
U.S. DEPARTMENT OF ENERGY  
under contract DE-AC05-84OR21400

**DISCLAIMER**

**Portions of this document may be illegible  
in electronic image products. Images are  
produced from the best available original  
document.**

## DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

ASSESSMENT PLAN FOR WHITE OAK CREEK AND MELTON  
BRANCH WEIR STILLING POOL CLEANOUT  
AT OAK RIDGE NATIONAL LABORATORY

Approvals

  
\_\_\_\_\_  
L. S. Hawk, ORNL ER Readiness Assessment Chairman

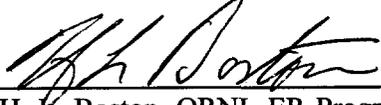
17 Aug 95  
Date

  
\_\_\_\_\_  
D. R. Watkins, ORNL ER Project Manager

8/17/95  
Date

  
\_\_\_\_\_  
L. S. Hawk, ORNL ER Facility Manager

17 Aug 95  
Date

  
\_\_\_\_\_  
H. E. Boston, ORNL ER Program Manager

8/17/95  
Date

## CONTENTS

1. INTRODUCTION .....	1
1.1 PLAN OVERVIEW .....	1
1.2 SCOPE .....	1
2. PROJECT SUPPORT .....	2
3. SITE BACKGROUND AND LOGISTICS OF THE MAINTENANCE ACTION .....	2
3.1 GENERAL SITE INFORMATION .....	2
3.2 WORK DESCRIPTION .....	2
3.3 PROCEDURES FOR MANAGING THE WASTES .....	3
3.3.1 Waste Generation and Segregation .....	3
3.3.2 Packaging .....	3
4. PROGRAM MANAGEMENT .....	3
4.1 ER SITE READINESS ASSESSMENT TEAM CHARTER .....	4
4.2 READINESS ASSESSMENT TEAM MEMBERS .....	4
5. REVIEW METHODOLOGY .....	5

## ABBREVIATIONS

DOE	U. S. Department of Energy
ER	Environmental Restoration
HWOG	Hazardous Waste Operations Group
LLLW	Liquid Low-Level Waste
Energy Systems	Lockheed Martin Energy Systems, Inc.
ORNL	Oak Ridge National Laboratory
PPE	Personal Protective Equipment
UCN	Union Carbide Nuclear
WC	Waste Certifier
WAG	Waste Area Grouping
WMO	Waste Management Operations

## PREFACE

This Readiness Assessment Plan was prepared to describe the readiness criteria and the organizational responsibilities necessary to ensure that the maintenance action consisting of removing the accumulated radiologically contaminated sediment from the stilling pools upstream of the two weirs in Waste Area Group (WAG) 2 at Oak Ridge National Laboratory is ready to proceed in accordance with Lockheed Martin Energy Systems, Inc., Procedure ES-OP-551, "Operational Readiness Review and Assessment Process." This procedure and Environmental Restoration Program Procedure ER/C-P1610, Rev. 1, "Conducting Project Readiness Reviews," provided guidance for the preparation of this plan.

## EXECUTIVE SUMMARY

This Readiness Assessment Plan has been prepared to document operational readiness for the following maintenance action: (1) removal of sediment from the White Oak Creek and Melton Branch Weir Stilling Pools and (2) disposal of the radiologically contaminated sediment in another location upstream of the weirs in an area previously contaminated by stream overflow from Melton Branch in Waste Area Grouping 2 (WAG) at Oak Ridge National Laboratory.

This project is being performed as a maintenance action rather than an action under the Comprehensive Environmental Response, Compensation, and Liability Act because the risk to human health and environment is well below the U.S. Environmental Protection Agency's level of concern. The decision to proceed as a maintenance action was documented by an interim action proposed plan, which is included in the administrative record. The administrative record is available for review at the U. S. Department of Energy Information Resource Center, 105 Broadway Avenue, Oak Ridge, Tennessee 37830.

A Readiness Assessment Team has been assembled to review the criteria deemed necessary to conduct the remediation tasks. These criteria include approval of all plans, acquisition of needed equipment, completion of personnel training, and coordination with plant health and safety personnel. The task will begin once the criteria have been met and documented. The readiness assessment is expected to be completed by late July 1995, and the task will begin thereafter.

# 1. INTRODUCTION

## 1.1 PLAN OVERVIEW

Lockheed Martin Energy Systems, Inc. (Energy Systems), Procedure ES-OP-551, Rev. 1, "Operational Readiness Review and Assessment Process," requires that activities follow a formal, focused, and comprehensive process to determine the activity's readiness to proceed to the next increment of work when management determines that it is necessary. This procedure is aimed at reducing the risks that threaten mission success and requires that a management-approved "readiness plan" be issued that (1) describes the activity under review, (2) defines the scope of the process, (3) identifies the team members, (4) establishes organizational responsibilities, (5) defines the methodology and criteria to be used for determining readiness, and (6) defines the events that must take place to complete the process. The remediation of the trapped radiologically contaminated sediment in the weir stilling pools in Waste Area Grouping (WAG) 2 at Oak Ridge National Laboratory (ORNL) is a maintenance action that does not require the formal, focused, and comprehensive readiness assessment process, but that will comply with the intent of ES-OP-551, Rev. 1, and of Environmental Restoration (ER) Program Procedure ER/C-P1610, Rev. 1, "Conducting Project Readiness Reviews."

This plan was prepared by the ORNL WAG 2 Site Project Readiness Assessment Team, which was established by the WAG 2 facility manager to provide the ORNL ER Program with information on the project team's plan for ensuring that construction activities associated with the project (as defined by the scope of this plan) will be ready to begin when the readiness assessment process is complete. This plan, along with progress reports to be prepared by the review team on the project's readiness, will enable the ER Program to conduct its independent assessment of the project's readiness to proceed successfully and safely in accordance with the project's objectives.

This plan provides an overview of the project and the major milestones that must be met for readiness, the methodology used to develop the criteria, and the events that must take place as part of the review process to determine readiness for each phase of the project. The readiness assessment schedule will be kept by the Project Manager D. R. Watkins and is available for review at the ORNL ER project offices.

## 1.2 SCOPE

Before the project can be initiated, documented evidence must exist showing that the U. S. Department of Energy (DOE) has approved the Conduct of Operations Matrix and the Site Safety and Health Plan; that applicable permits and documentation have been issued and procedures specifically addressing the conduct of the project are in place; that Environmental Management, Health Physics, Engineering, Quality Assurance, and Waste Management personnel have reviewed and their comments have been incorporated into the project specifications and plans; that materials, facilities, and equipment to be used to perform the remediation have been identified; that a records system is in place; and that all project documentation has been completed. This plan has been prepared to ensure the safe and successful conduct of the project after these requirements have been satisfied.

## **2. PROJECT SUPPORT**

Energy Systems support for this effort will consist of organizations from ORNL, including Health Physics, Environmental Compliance, the Safety and Health Evaluation Support team, the ER Program, Waste Management, Plant and Equipment, and other appropriate organizations.

## **3. SITE BACKGROUND AND LOGISTICS OF THE MAINTENANCE ACTION**

### **3.1 GENERAL SITE INFORMATION**

ORNL has placed sampling devices in various streams to provide background information for measuring the level of contamination of stream water before and after it receives permitted waste water from research and operation activities. Weir X-13 is the primary flow device for measuring flow on Melton Branch, and Weir X-14 is the primary flow device for measuring the flow on White Oak Creek. Removal of accumulated sand, gravel, silt and sediment from the channel behind the weirs is needed to ensure accurate measurement of the flow rate of the stream water. In addition, water samples at these sites are analyzed and the data are incorporated in written reports as required by the Radiological Monitoring Plan. The buildup of accumulated sand, gravel, silt and sediment is due to heaving spring rains, but some buildup occurs naturally.

### **3.2 WORK DESCRIPTION**

This project will involve a maintenance action consisting of the removal of accumulated sand, gravel, silt, and sediment behind the X-13 (Melton Branch) and the X-14 (White Oak Creek) Weirs. The project will be performed during continuous stream flows in Melton Branch and White Oak Creek. To minimize silt and sediment being transported downstream, both weir cleanouts will be conducted with no flow across the weirs. This will be accomplished by scheduling the work during low flow periods and by pumping the flow in both creeks around the weirs utilizing centrifugal pumps and hoses. The build up behind the weirs will be removed by using a crane and clamshell. The contents will be transported to and distributed in a man-made sediment drainage basin which will be constructed above the 100 year flood plain at WAG 2 (Attachment 2) and upstream of the weirs. The sediment drainage basins will be placed on erosion control engineering fabric. Filter fabric will be placed on the interior slopes of the sediment storage basin berms. The sediment drainage will be seeded and covered with matting over the seeded area such that the sediment will remain in place.

Field work has been deemed operation and maintenance by the DOE Davis-Bacon Committee and will be performed by the Energy Systems Plant and Equipment (P&E) Division.

Various hoisting and lifting activities will be involved in conducting the sediment removal. The technical details of these activities (including lifting equipment, weight, key dimensions and center of gravity, and rigging specifics) are included in the "Hoisting and Rigging Program:

Ordinary Lift Plan." Based on an evaluation of the activities to be performed, none of the hoisting or rigging tasks were determined to be critical lifts.

### **3.3 PROCEDURES FOR MANAGING THE WASTES**

#### **3.3.1 Waste Generation and Segregation**

Waste will be generated as a result of the following activities:

- Clearing of trees and brush.
- Removal of sand, gravel, silt, and sediment.
- Use of plastic sheeting for staging areas.
- Decontamination of equipment.
- Disposal of Personal Protective Equipment (PPE).

Wastes generated by this project are characterized in the waste management plan. Additional waste characterization will be performed as required. Appropriate tests/analysis will be conducted as necessary. The Waste Certifier (WC) will be responsible for determining whether additional testing is required by Energy Systems. The Waste Certifier will be appointed by the Energy Systems Environmental Restoration Program before the start of the project. Any deviations from the waste management plan must be approved by the project manager, Waste Management Operations (WMO), and the Waste Certification Group.

#### **3.3.2 Packaging**

Once the wastes are segregated, they will be packaged and disposed of in a manner identified in the waste management plan. Uncontaminated waste material that will be sent to a disposal site will be accompanied by Form UCN-2109, which will be signed by a representative of Energy Systems.

Hazardous waste is not expected to be generated during this project. Hazardous waste will be characterized on Form UCN-2109. Hazardous and mixed waste shall be packaged separately as identified by the Hazardous Waste Operations Group (HWOG) and care will be taken not to mix with any other type of waste. The appropriate packaging and disposal method will be determined by the HWOG supervisor.

## **4. PROGRAM MANAGEMENT**

The ORNL ER program manager (H. L. Boston), ORNL ER Program Quality Assurance engineer (P. A. Schrandt), and the WAG 2 facility manager (L. S. Hawk) have identified a need for a minimal readiness assessment for this project as required in ER/C-P1610, Rev. 1, "Conducting Project Readiness Reviews." The Readiness Assessment team will be appointed and is directly responsible for monitoring the project's readiness for operation. L. S. Hawk is responsible for evaluating the readiness assessment plan, coordinating the approval of the plan, and requesting that the ER Program verify the project's readiness to proceed to the required remedial action work.

#### 4.1 ER SITE READINESS ASSESSMENT TEAM CHARTER

The Readiness Assessment team is a management-appointed multidisciplinary group that has been established (1) to evaluate the state of readiness (to proceed to construction) to remediate the sediment buildup in the stilling pools of the weirs in WAG 2; (2) to identify and validate supportive, objective evidence of readiness; and (3) to assist the WAG 2 facility manager in presenting the evidence of readiness to the ER Program.

The Readiness Assessment team's specific responsibilities include the following:

- preparing the readiness assessment plan,
- using appropriate techniques to ensure full coverage of all activities,
- preparing the readiness criteria,
- identifying and verifying the visible objective evidence, and
- monitoring and determining the state of readiness and reporting this information to the ORNL ER Program site manager.

The Readiness Assessment team's activities will include reviewing the readiness of facilities and equipment, materials, personnel and training, plans, permits and procedures, and support services.

#### 4.2 READINESS ASSESSMENT TEAM MEMBERS

The following are the Readiness Assessment team members:

- L. S. Hawk, Chairman (ORNL, Engineering Technology)
- D. R. Watkins (ORNL, Project Manager)
- M. K. Bunner (ORNL, Engineering)
- R. H. Coe (ORNL, Waste Management)
- V. L. Holt (Hazardous Waste Operations and Emergency Response/Safety and Health Evaluation Support Team)
- R. H. Coe (ORNL, Engineering)
- J. E. Francis (ORNL, Health Physics)
- R. C. Farr (DOE)
- T. M. Bonine (ORNL, Compliance)
- M. D. Bryant (ORNL, Quality Assurance), and
- L. S. Hawk (ORNL, ER WAG 2 facility manager)

The team will be responsible for reviewing the data, evaluating the risks associated with operations, and making recommendations to the ORNL ER Program regarding readiness for initiation of the project.

## 5. REVIEW METHODOLOGY

The readiness assessment process is a management tool that establishes and verifies the state of readiness for initiation of an activity. The process begins with the preparation of the readiness assessment plan and the identification of the readiness criteria (specified in the checklist shown in the Appendix). At a meeting of the Readiness Assessment team (to be convened in mid-August), these criteria will be evaluated for completeness. The readiness assessment process concludes with documentation from the Readiness Assessment team to the ORNL ER Program manager that all criteria have been met and that the project is ready to proceed to the field. The ORNL ER Program manager will review the documentation and, upon concurrence with the Readiness Assessment team's conclusion, will approve the project.

## **Appendix**

### **CRITERIA FOR READINESS ASSESSMENT FOR MAINTENANCE ACTION TO REMEDIATE SEDIMENT TRAPPED IN WEIR STILLING POOLS AT WASTE AREA GROUPING 2**

The readiness review criteria are the standards by which the maintenance action to remediate sediment currently plugging the stilling pools of the weirs in Waste Area Group 2 will be judged ready to begin. The readiness review criteria are being defined according to their specific applicability to the activity, and the generic criteria have been defined for events that must be accomplished to achieve readiness.

#### 1. Documentation complete

- Interim Action Plan
- National Environmental Policy Act, Categorical Exclusion
- Site-specific Health and Safety Plan
- Project Management Plan
- BMap Plan
- Waste Management Plan
- Risk Evaluation
- Hoisting and Rigging Plan
- Records Management Plan
- Maintenance Action Work Plan
- Conduct of Operations Matrix
- Readiness Assessment Plan
- Quality Assurance Plan
- Sampling Plan

#### 2. Permits

- Safety Work Permit
- Penetration/Excavation Permit
- Radiation Work Permit
- Air Permit
- Excavation

#### 3. Personnel

- All personnel available
- All personnel trained
- Health and safety personnel scheduled

#### 4. Equipment

- Modified dump truck
- Crane (or other hoisting equipment)
- High lift
- Health and safety monitoring equipment
- Pumps
- B25 boxes
- Plastic sheeting
- Piping

- Portable toilet
- Hand tools
- Signs, placards, and controls

5. Other

- All activities scheduled/sequenced with team and plant personnel

**DISTRIBUTION**

1. P. Allen
2. H. L. Boston
3. W. D. Brickeen
4. C. C. Clark
5. S. B. Garland
6. D. R. Watkins
7. L. S. Hawk
8. R. G. Ross
9. A. W. Saulsbury
10. A. J. Kuhaida
- 11-12. P. T. Owen
13. P. A. Schrandt
16. P. S. Wood
17. ORNL Patent Section
18. Central Research Library
- 19-21. ER Document Management Center
- 22-24. ORNL ER Document Management Center
25. ORNL Laboratory Records
26. Office of Assistant Manager for Energy Research and Development, DOE Oak Ridge Operations Office, P.O. Box 2001, Oak Ridge, Tennessee 378318600
27. Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, Tennessee 37831