OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

QUALITY ASSURANCE AUDIT PLAN

FOR AUDIT YMP-ARC-95-07

OF

LAWRENCE LIVERMORE NATIONAL LABORATORY

LIVERMORE, CALIFORNIA

MARCH 6 THROUGH 10, 1995

Prepared by: S. R. Maslar Date: 1/19/95
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Yucca Mountain Quality Assurance Division

Approved by: Catherine Hampton for Date: 1/26/95
Donald G. Horton
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1.0 SCOPE

This full scope audit, to be performed by a team of auditors from the Yucca Mountain Quality Assurance Division (YMQAD) will evaluate the Lawrence Livermore National Laboratory (LLNL) Quality Assurance (QA) Program to determine whether it meets the requirements and commitments imposed by the Office of Civilian Radioactive Waste Management (OCRWM). This will be done by verifying implementation and effectiveness of the system in place, as well as verifying compliance with requirements.

In addition to the follow-up on open Corrective Action Requests (CARs), a representative sample of deficiencies identified during previous QA audits and surveillances of LLNL will be included in the scope of this audit to determine the effectiveness of LLNL corrective actions.

The programmatic and technical elements to be audited, as well as those programmatic elements not included in the audit are identified in Section 4.0 of this audit plan.

2.0 AUDIT SCHEDULE

Pre-audit Team/Observer Meeting	8:15 a.m., March 6, 1995 Livermore, California
Pre-audit Conference	9:00 a.m., March 6, 1995 Livermore, California
Audit Activities	10:00 a.m. to 4:00 p.m. March 6, 1995 Livermore, California
	8:00 a.m. to 4:00 p.m. March 7-9, 1995
	8:00 a.m. to 10:00 a.m. March 10, 1995
Post-audit Conference	11:00 a.m.., March 10, 1995 Livermore, California

- There will be a daily YMQAD Audit Team/Observer meeting starting at 4:00 p.m. and also a daily Audit Team Leader/Observer/LLNL meeting starting at 8:00 a.m. to discuss potential deficiencies and establish needed liaison.

3.0 REQUIREMENTS TO BE AUDITED AND APPLICABLE REFERENCES

The requirements to be audited will be contained in the programmatic and technical checklists. These checklists will be developed from the latest available revision of the following documents.

- LLNL QA Program implementing procedures addressing the OCRWM Quality Assurance Requirements and Description Document (QARD), DOE/RW-0333P, as indicated in the Requirements Traceability Network matrix.

- Applicable Yucca Mountain Site Characterization Project Office Administrative Procedures - Quality.

The conduct of the audit will be guided by the documents (latest revision) listed below:

- Quality Assurance Procedure (QAP) 18.2, "Audit Program"

- QAP 16.1, "Corrective Action"

4.0 ACTIVITIES TO BE AUDITED

Programmatic Elements

1.0 Organization
2.0 Quality Assurance Program
4.0 Procurement Document Control
5.0 Implementing Documents
6.0 Document Control
7.0 Control of Purchased Items
12.0 Control of Measuring and Test Equipment
13.0 Handling, Storage, and Shipping
15.0 Nonconformances
16.0 Corrective Action
17.0 Quality Assurance Records
18.0 Audits
Supplement I, Software
Supplement II, Sample Control
Supplement III, Scientific Investigations

The following QA program elements were considered during the development of this audit plan and found to be not applicable, since LLNL currently has no activity to which these elements apply:

3.0 Design Control
8.0 Identification and Control of Items

9.0 Control of Special Processes
10.0 Inspection
11.0 Test Control
14.0 Inspection, Test, and Operating Status
Supplement IV, Field Surveying
Appendix A, High Level Radioactive Waste Form Production
Appendix B, Transportation
Appendix C, Mined Geological Disposal System

Technical Elements

Selected quality-related work as follows:

- Work Breakdown Structure (WBS) No. 1.2.2.5.1, Metallic Barriers
- WBS No. 1.2.2.4.1, Spent Fuel Dissolution/Oxidation; Cladding
- WBS No. 1.2.3.10.3.2, Thermodynamic Data Determination
- WBS No. 1.2.2.4.2, Glass Testing
- WBS No. 1.2.3.12.4, Small Block Testing

In addition, the technical specialist will evaluate the above activities to determine adequacy in the following areas:

1. Technical qualifications of technical personnel.

2. Understanding of procedural requirements as they pertain to related work.

3. Adequacy of technical procedures, as applicable.

4. Development of study plans, scientific investigations, work supporting documents and any related work products.

If the audit identifies a need to verify additional programmatic or technical areas, during the audit, these areas will be added to the audit scope and evaluated accordingly.

5.0 AUDIT TEAM MEMBERS

Stephen R. Maslar, YMQAD, Las Vegas, NV, ATL
James E. Clark, YMQAD, Las Vegas, NV, Auditor
Robert E. Harpster, YMQAD, Las Vegas, NV, Lead Technical Specialist
Kristi A. Hodges, YMQAD, Las Vegas, NV, Auditor
Stephen D. Harris, YMQAD, Las Vegas, NV, Auditor
John R. Matras, YMQAD, Las Vegas, NV, Auditor
Mario R. Diaz, YMQAD, Las Vegas, NV, Auditor
Emily Reiter, Headquarters Quality Assurance Division, Washington, DC, Auditor
Stephen T. Nelson, Management and Operating Contractor, Las Vegas, NV, Technical Specialist

6.0 AUDIT CHECKLISTS

YM-ARC-95-07-01, Programmatic Checklist, will be used during the programmatic portions of this audit.

YM-ARC-95-07-02, Technical Checklist, will be used for the examination of technical areas during this audit.