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**OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
QUALITY ASSURANCE AUDIT PLAN**

FOR

AUDIT LLNL/LBNL-ARP-97-16

OF THE

**CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM
MANAGEMENT AND OPERATING CONTRACTOR**

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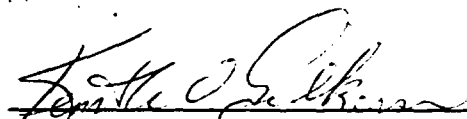
**LAWRENCE LIVERMORE NATIONAL LABORATORIES
LIVERMORE, CALIFORNIA**

and

**LAWRENCE BERKELEY NATIONAL LABORATORIES
BERKELEY, CALIFORNIA**

MAY 12 THROUGH 16, 1997

Prepared by:



Date:

4/9/97

Kenneth O. Gilkerson
Audit Team Leader
Office of Quality Assurance

Approved by:



Date:

4/15/97

Donald G. Horton
Director
Office of Quality Assurance

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Enclosure

1.0 SCOPE

This audit of the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) at Lawrence Livermore National Laboratory (LLNL) and Lawrence Berkeley National Laboratory (LBNL) will be conducted by a team of auditors and a Technical Specialist (TS) from the Office of Quality Assurance (OQA). The audit will be a performance-based audit of selected processes and technical activities as specified below.

The performance-based audit will focus on processes and controls related to LLNL and LBNL activities supporting Work Breakdown Structure (WBS) 1.2.3.14.2 "First ESF Thermal Test (Single Element Heater Test and Drift Scale Tests)," and will be subject to all applicable Quality Assurance (QA) Program Elements.

2.0 AUDIT SCHEDULE

Pre-Audit Team/Observer Meeting (LBNL)	8:30 a.m., May 12, 1997 Berkeley, California
Pre-Audit Conference (LBNL)	9:00 a.m., May 12, 1997
Audit Activities (LBNL)	9:30 a.m. - 4:00 p.m. May 12, 1997
	8:00 a.m. - 4:00 p.m. May 13-14, 1997
Post-Audit Conference (LBNL)	4:00 p.m., May 14, 1997
Pre-Audit Conference (LLNL)	8:00 a.m., May 15, 1997 Livermore, California
Audit Activities (LLNL)	8:30 a.m. - 4:00 p.m. May 15, 1997
	8:00 a.m. - 1:00 p.m. May 16, 1997
Post-Audit Conference (LLNL)	3:00 p.m., May 16, 1997

An Audit Team/Observer meeting will be held at 4:00 p.m. daily to review audit progress. There will be also an Audit Team Leader (ATL)/Observer/LBNL Management Meeting at 8:15 a.m. on May 13 and 14, and an Audit Team Leader (ATL)/Observer/LLNL Management Meeting at 8:15 a.m. on May 16 to communicate audit progress, to discuss findings, potential deficiencies and establish liaison. These meetings will be held at locations provided by LBNL and LLNL, respectively.

3.0 REQUIREMENTS TO BE AUDITED AND APPLICABLE REFERENCES

The processes and activities to be audited will be contained in performance-based checklists. These checklists will be developed based on the management objectives and critical process steps relative to First ESF Thermal Test activities and deliverables presented to LLNL/LBNL management for concurrence. Approved study plans, requirements documents and other technical documents will be reviewed and used as background information in the development of performance-based checklist questions in the assessment of the process.

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

- Quality Assurance Procedure 18.2, "Internal Audit Program"
- Administrative Procedure (AP) 16.1Q, "Performance/Deficiency Reporting"
- AP 16.2Q, "Corrective Action and Stop Work"

4.0 ACTIVITIES TO BE AUDITED

The audit team will conduct a performance-based audit of activities supporting WBS 1.2.3.14.2, "First ESF Thermal Test" (Single Element Heater Test and Drift Scale Design Tests). The planning, scoping and implementation of activities such as procurement, M&TE, development of technical procedures, instrumentation of boreholes, sample collection, etc. will be evaluated as part of this audit. The critical process steps to be examined in relation to accomplishing these activities include:

- Use of a documented, controlled system; e.g., procedures, scientific notebooks
- Qualification of data and intended use
- Data collection equipment and any special equipment; M&TE
- Data analysis/tests/reviews
- Input to database(s)
- Control of software
- Identification of product based on needs identified in SCP and Study Plans
- Identify data needs required to produce product
- Collect data

- Analyze/interpret/test data
- Develop report /(product)
- Review report (technical, QA, peer)
- Respond to review comments and/or incorporate comments
- Submit final report (products) to DOE

The evaluation will attempt to determine that management objectives presented to LLNL and LBNL previous to the audit have been realized. They include objectives such as personnel are qualified, have relevant background experience, and are trained; that adequate management resources have been provided to perform the work, and that they meet the deliverable milestones.

A performance-based audit evaluates products, controls and activities to determine the degree to which they meet program requirements and management commitments and expectations. The evaluation of process effectiveness and product acceptability will be based upon:

- 1) Satisfactory completion of the critical process steps
- 2) Acceptable results and quality of the end products/activities
- 3) Documentation that substantiates product quality
- 4) Performance of trained and qualified personnel
- 5) Implementation of applicable QA Program Elements (As Applicable)

5.0 AUDIT TEAM MEMBERS

Kenneth O. Gilkerson, OQA/QATSS, Las Vegas, Nevada, ATL
John R. Doyle, OQA/QATSS, Las Vegas, Nevada, Auditor
William J. Glasser, OQA/QATSS, Las Vegas, Nevada, Auditor
Jefferson McCleary, CRWMS M&O, Woodward Clyde Consultants, Moab, Utah,
Technical Specialist

6.0 AUDIT CHECKLIST

The following checklists will be used during the audit:

LLNL/LBNL-ARP-97-16-01, Performance Based Checklist(s)