



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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November 5, 1999

MEMORANDUM TO: John T. Greeves, Director
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

FROM: Larry L. Campbell *Larry L. Campbell*
Projects and Engineering Section
High Level Waste and
Performance Assessment Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

SUBJECT: HIGH-LEVEL WASTE QUALITY ASSURANCE
TASK FORCE ACTIVITIES

Attached for your information is the summary of observations made by the U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, High-Level Waste Quality Assurance (HLW QA) Task Force concerning the U.S. Department of Energy's compliance QA audit at Lawrence Livermore National Laboratory (LLNL). The audit of LLNL, observed by the HLW QA Task Force, was performed by the DOE Office of Quality Assurance using a team of qualified, independent, personnel.

The HLW QA Task Force observed the DOE audit performed at LLNL from September 12-18, 1999. The purpose of the Task Force's observation was to evaluate LLNL's progress in developing a nuclear culture and in improving the quality of its scientific notebooks. The same Task Force members participated on the previous evaluation of LLNL in July, 1999 (see the July 30, 1999, Memorandum to Greeves from Hooks, "High-Level Waste Quality Assurance Task Force Activities," dated July 30, 1999).

The DOE audit team conducted the audit using an itemized checklist and discussed the results of the audit with LLNL personnel. The audit was thorough and detailed, made good use of information gained in previous audits, and indicated that LLNL is making progress in correcting and minimizing deficiencies and creating a nuclear culture.

As stated in the attached summary, the HLW QA Task Force members noted that the latest entries in scientific notebooks were in compliance with procedural requirements, that LLNL personnel are more knowledgeable of QA requirements than they were two months earlier, and

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that LLNL management is closely monitoring corrective actions to ensure timely completion. Based on these facts and the lack of significant findings during the audit, the NRC QA Task Force members believe that LLNL personnel are improving significantly in the areas of procedure adherence, paying attention to detail, and ensuring that timely corrective measures are taken more in line with a nuclear culture.

Attachment: HIGH-LEVEL WASTE QUALITY ASSURANCE TASK FORCE
 SUMMARY OF ACTIVITIES SEPTEMBER 13-17, 1999
 U.S. DEPARTMENT OF ENERGY AUDIT AT
 LAWRENCE LIVERMORE NATIONAL LABORATORY

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OFC	SPB/FCSS	E	HLWB-PA	E	HLWB/PA		HLWB	
NAME	JSpraul		LCampbell		KStaden		WReamer	
DATE	10/28/99	H	10/28/99	H	10/5/99		10/5/99	

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OFC	SPB/FCSS	E	HLWB-PA	E	HLWB/PA		HLWB	
NAME	JSpraul		LCampbell <i>Mc</i>		KStablein		WReamer	
DATE	10/13/99 ^{#20}	H	10/25/99	H	10/ /99		10/ /99	

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**HIGH-LEVEL WASTE QUALITY ASSURANCE TASK FORCE
SUMMARY OF ACTIVITIES SEPTEMBER 13-17, 1999
U.S. DEPARTMENT OF ENERGY AUDIT AT
LAWRENCE LIVERMORE NATIONAL LABORATORY**

During the week of September 13-17, 1999, members of the Division of High-Level Waste Management's Quality Assurance (QA) Task Force, John G. Spraul and Thomas C. Trbovich (representing the Center for Nuclear Waste Regulatory Analyses), observed the U.S. Department of Energy (DOE) Office of Civilian Radioactive Waste Management (OCRWM) audit of Yucca Mountain Site Characterization Office (YMSCO) Management and Operating Contractor (M&O). The audit took place at the Lawrence Livermore National Laboratory (LLNL) in Livermore, California. The audit was the annual DOE compliance audit to evaluate the implementation, adequacy, and effectiveness of LLNL's activities supporting YMSCO. In addition, the audit team reviewed the status of previous deficiency documents to determine the effectiveness of completed corrective actions as well as the status of LLNL corrective actions initiated over the past year.

Other observers of the audit were:

Albert C. Williams	OCRWM Office of Quality Assurance (OQA)
Edward P. Opelski	OQA Contractor - Quality Assurance Technical Support Services (QATSS)

The DOE audit team was comprised of the following personnel:

Michael A. Goyda	OQA/QATSS (Audit Team Leader)
Mario R. Diaz	OQA
Kristi A. Hodges	OQA/QATSS
Victor J. Barish	OQA/QATSS
Floyd H. Dove	OQA/QATSS

An audit checklist, covering the QA program elements applicable to LLNL, was developed by the audit team prior to the audit. These QA program elements were Organization, Quality Assurance, Procurement Document Control, Implementing Documents, Document Control, Control of Purchased Items and Services, Control of Measuring and Test Equipment, Nonconformances, Corrective Action, QA Records, Software, Sample Control, Scientific Investigation, Control of the Electronic Management of Data, and Mined Geologic Disposal System. A copy of the checklist was provided to the observers at the opening meeting, and the checklist was used by the audit team members during the audit.

LLNL personnel who were interviewed during the week included, among others:

Barbara Alegre	Records Coordinator
William Bourcier	Principal Investigator (PI)
Barbara Campbell	Technical Area Leader (TAL) - Licensing Support
Bill Clark	TAL - Engineered Barrier System Materials & LLNL Repository Advisory Committee Member
John Estill	Laboratory Supervisor
William Glassley	PI
Martha Kohler	CRWMS LLNL Manager
Wunan Lin	TAL - Integrated Near Field Environment & PI

Royce Monks
Steve Steward
Ray Stout

Engineering Assurance Manager
PI
TAL - Waste Form and Waste Package Internals

Although there were no significant conditions adverse to quality noted during the audit, the audit team rated the implementation of two of the applicable QA program elements as unsatisfactory as shown in the table below:

QA PROGRAM ELEMENT	AUDIT TEAM CONCERNS
Implementing Documents	<ol style="list-style-type: none">1. The electronic version of documents did not always agree with the hard copy2. The revision number noted on the front page of the electronic version of procedures was not "carried through" the entire procedure.3. Surveillances required by LLNL Technical Implementing Procedures did not reflect current organizations and processes.
QA Records	<ol style="list-style-type: none">1. Records were corrected/changed by unidentified personnel.2. Changed records sent to the Records Processing Center in Las Vegas did not reflect the accession number of the record being changed.

The audit team also noted several concerns in other QA program elements. These were either corrected during the audit or will be shown as recommendations in the audit report. The other QA program elements were rated as satisfactory.

The audit team was thorough and persistent in evaluating the QA program elements and pursuing discrepant conditions. The concerns expressed by the audit team generally related to activities that were completed prior to the all-hands QA training and the DOE/M&O emphasis on changing to a nuclear culture that occurred about mid-way through the audited period.

NRC QA Task Force Observations and Conclusions

The NRC QA Task Force observers noted improvements and corrections in the active LLNL scientific notebooks. The same individuals observed the LLNL scientific notebook review activities of the DOE QA team during their previous visit to LLNL. The latest entries were in compliance with procedural requirements. Observation of and interviews with Charlie Warren, OQA's on-site QA representative at LLNL, indicate that his efforts are strengthening LLNL's QA program implementation. Interviews with LLNL personnel showed them to be more knowledgeable of QA requirements than during the LLNL scientific notebook review. LLNL management is closely monitoring corrective actions to ensure timely completion. Based on these facts and the lack of significant findings during the audit, the NRC QA Task Force observers believe that LLNL personnel are improving significantly in the areas of procedure adherence, paying attention to detail, and ensuring timely corrective measures are taken more in line with a nuclear culture.

ABBREVIATIONS

CRWMS	Civilian Radioactive Waste Management Systems
DOE	U.S. Department of Energy
LLNL	Lawrence Livermore National Laboratory
M&O	Management and Operating Contractor
OCRWM	Office of Civilian Radioactive Waste Management
OQA	Office of Quality Assurance, OCRWM
PI	Principal Investigator, LLNL
QA	Quality Assurance
QATSS	Quality Assurance Technical Support Services
TAL	Technical Area Leader, LLNL
YMSCO	Yucca Mountain Site Characterization Office