

July 30, 1999

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

FROM: Kenneth Hooks [Original signed by]
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

SUBJECT: HIGH-LEVEL WASTE QUALITY ASSURANCE TASK FORCE ACTIVITIES
REGARDING SCIENTIFIC NOTEBOOKS

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 upgrading scientific notebooks (SNs) at Lawrence Livermore National Laboratory (LLNL). The reviews of open/active LLNL SNs documenting Yucca Mountain Project scientific investigations, observed by the HLW QA Task Force, were performed for the DOE Office of Quality Assurance by a team of qualified, independent, personnel.

The HLW QA Task Force observed the SN reviews performed at LLNL from July 12 -16, 1999. The DOE team reviewed the SNs and discussed the results of the reviews with LLNL personnel, who then made the corrections/additions to upgrade the SNs. The reviews were thorough and detailed, made good use of information gained in previous reviews, and indicated that LLNL is making progress in correcting deficiencies in its open/active SNs.

As stated in the attached summary, the HLW QA Task Force members believe that DOE efforts to resolve deficiencies in SNs at LLNL are showing progress. However, the number of review and correction cycles required to resolve the deficiencies may indicate a lack of effective LLNL management involvement in the previous reviews, and a lack of understanding by some LLNL management and staff of the requirements of the QA program related to use of SNs.

Attachment: As stated

FILE CENTER COPY

CONTACT: K. Hooks, NMSS/URLL
(301) 415-7777

DISTRIBUTION (w/att): File Center : NMSS r/f : URLL r/f : JSpraul
WBelke TCarter TMatula BMabrito SWastler JFirth
JHolonich LCampbell CPaperiello ACNW

Path & File Name: S:\DWM\URLL\KRH\QALLNLNB.WPD

OFC	URLL	E	HLW-PA				
NAME	KHooks:cc:bdm	WR	WReamer	DN			
DATE	7/30/99	H	7/30/99				

OFFICIAL RECORD COPY

This document should should not be made available to the PUBLIC

[Signature] 7/30/99
(Initials) (Date)

1/1
NL17
102.8
wm-11

9908100017 990730
PDR WASTE
NM-11 PDR



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 30, 1999

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

FROM: Kenneth Hooks *KH Hooks*
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

SUBJECT: HIGH-LEVEL WASTE QUALITY ASSURANCE TASK FORCE
ACTIVITIES REGARDING SCIENTIFIC NOTEBOOKS

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 upgrading scientific notebooks (SNs) at Lawrence Livermore National Laboratory (LLNL). The reviews of open/active LLNL SNs documenting Yucca Mountain Project scientific investigations, observed by the HLW QA Task Force, were performed for the DOE Office of Quality Assurance by a team of qualified, independent personnel.

The HLW QA Task Force observed the SN reviews performed at LLNL from July 12 -16, 1999. The DOE team reviewed the SNs and discussed the results of the reviews with LLNL personnel, who then made the corrections/additions to upgrade the SNs. The reviews were thorough and detailed, made good use of information gained in previous reviews, and indicated that LLNL is making progress in correcting deficiencies in its open/active SNs.

As stated in the attached summary, the HLW QA Task Force members believe that DOE efforts to resolve deficiencies in SNs at LLNL are showing progress. However, the number of review and correction cycles required to resolve the deficiencies may indicate a lack of effective LLNL management involvement in the previous reviews, and a lack of understanding by some LLNL management and staff of the requirements of the QA program related to use of SNs.

Attachment: As stated

CONTACT: K. Hooks, NMSS/URLL
(301) 415-7777

**HIGH-LEVEL WASTE QUALITY ASSURANCE TASK FORCE
SUMMARY OF ACTIVITIES JULY 12 - JULY 16, 1999
REVIEW OF SCIENTIFIC NOTEBOOKS AT
LAWRENCE LIVERMORE NATIONAL LABORATORY**

During the week of July 12 through July 16, 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 Analysis), observed the activities of a U.S. Department of Energy (DOE) team assisting the Lawrence Livermore National Laboratory (LLNL) in the upgrade and review of open/active LLNL scientific notebooks concerning the Yucca Mountain Project.

When required, the notebooks were upgraded to comply with the QARD (DOE Office of Civilian Radioactive Waste Management Quality Assurance Requirements and Description for the Civilian Radioactive Waste Management Program - DOE/RW-0333P) and procedural requirements. This work was done to assist LLNL with the close-out of Deficiency Report LLNL-98-D-007, initially issued on November 14, 1997, concerning the acceptability of LLNL scientific notebooks. The results of this work could also affect the responses to corrective action requests concerning data qualification (LVMO-98-C-002), software (LVMO-98-C-006), and models (LVMO-98-C-010).

The DOE team was comprised of the following personnel:

Richard E. Poe	OQA/QATSS (Team Leader)
John R. Doyle	OQA/QATSS
Steve Harris	OQA/QATSS: QAR for LLNL-98-D-007
Anthony B. Muller	YMSCO/Booze-Allen
Charlie Warren	OQA/QATSS: LLNL Site Representative
Jon Zisloft	CRWMS M&O/NEPO

LLNL personnel who were interviewed during the week included, inter alia:

Martha Kohler	CRWMS LLNL Manager
Royce Monks	Engineering Assurance Manager
Barbara Campbell	Technical Area Leader (TAL) - Licensing Support
Bill Clark	TAL - EBS Materials & LLNL Repository Advisory Committee member
Wunan Lin	TAL - Integrated Near Field Environment & Principal Investigator (PI)
Ray Stout	TAL - Waste Form and WP Internals
William Bourcier	PI
William Glassley	PI
Steve Steward	PI

LLNL had given the team a list of the 197 LLNL open/active Yucca Mountain Project Scientific Notebooks. These notebooks had been classified as either "Q" or "Non-Q" by LLNL. LLNL provided these notebooks to the team along with the results of LLNL's administrative, engineering assurance, and TAL reviews. The notebooks and the LLNL review results were

then reviewed by the team for procedural compliance, scientific technique, and test repeatability.¹ The DOE team noted that the majority of the previous LLNL reviews of the scientific notebooks were not complete.

As time allowed and as LLNL personnel were available, the results of the review were then discussed with LLNL's PI (and, generally, the PI's TAL). In these instances, the PI followed the team's recommendations concerning changes to the notebooks and the changes were verified by the team and the documentation "signed-off" by a team member as showing the acceptability of the notebook. For some notebooks, the team's recommendation was for LLNL to initiate a nonconformance report indicating that the notebook was intended to report "qualified" data but resulted in "scoping" information only. For other notebooks, the team's recommendation was to change the classification from a "scientific notebook" to a "logbook" based on its contents.

Not all of the team's recommendations had been acted upon and verified by the end of the week. Following appropriate LLNL actions on these recommendations, the DOE OQA representative at LLNL will verify acceptability.

In addition to the "one-on-one" training given to PI's and TALs by the team, LLNL personnel received formal scientific notebook training by Royce Monks (the LLNL Engineering Assurance Manager) on January 6, 1999. Further, on July 9, 1999, Richard Poe (the DOE Team Leader) conducted a workshop for LLNL personnel involved with scientific notebooks. The staff believes that LLNL personnel have had sufficient training such that future LLNL scientific Yucca Mountain Project work should be reported acceptably in scientific notebooks and reviewed appropriately by LLNL.

LLNL has developed a computer database to track the deficiencies found in the scientific notebooks. The program will be used by LLNL to develop a final summary report to DOE (through the M&O) as LLNL committed to do in its response to deficiency report LLNL-98-D-007.

The staff believes that the DOE team review was both necessary and beneficial. The team members were well qualified, and they conducted their reviews and discussions with LLNL personnel in a professional manner. The involved LLNL personnel were cooperative in getting required information and responding to the team's recommendations. However, significant LLNL actions are required to respond to additional team recommendations, for LLNL and DOE to verify acceptability of the responses, and for LLNL to provide a summary report as committed to in the LLNL response to deficiency report LLNL-98-D-007. Scheduled date for completion is mid-August 1999. Significant project support and management leadership will be required for LLNL to meet the schedule.

¹Test repeatability reflects the technical reviewer's assessment of whether the scientific notebook entries are sufficiently complete and detailed to allow another qualified scientist to understand and reproduce the work. LLNL's "Guidance for Usage" of scientific notebooks states: "Entries should be sufficiently complete and detailed to allow another qualified scientist to understand and reproduce your work."

ABBREVIATIONS

CRWMS	Civilian Radioactive Waste Management Systems, DOE
DOE	U.S. Department of Energy
EBS	Engineered Barrier System
LLNL	Lawrence Livermore National Laboratory
M&O	Management and Operating Contractor
NEPO	Natural Environment Program Operations, M&O
OCRWM	Office of Civilian Radioactive Waste Management, DOE
OQA	Office of Quality Assurance, OCRWM
PI	Principal Investigator, LLNL
QA	Quality Assurance
QAR	Quality Assurance Representative
QARD	"Quality Assurance Requirements and Description" (DOE/RW-0333P)
QATSS	Quality Assurance Technical Support Services
RW	Radioactive Waste
TAL	Technical Area Leader, LLNL
WP	Waste Package
YMSCO	Yucca Mountain Site Characterization Office, DOE