



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 98608
Las Vegas, NV 89193-8608

OCT 27 1995

L. Dale Foust
Technical Project Officer
for Yucca Mountain
Site Characterization Project
TRW Environmental Safety Systems, Inc.
Bank of America Center, Suite P-110
101 Convention Center Drive
Las Vegas, NV 89109

ISSUANCE OF SURVEILLANCE RECORD YMP-SR-95-044 RESULTING FROM
YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD) SURVEILLANCE
OF THE CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT
AND OPERATING CONTRACTOR (CRWMS M&O)/LAWRENCE LIVERMORE NATIONAL
LABORATORY (LLNL) (SCPB: N/A)

Enclosed is the record of Surveillance YMP-SR-95-044 conducted by
the YMQAD at the CRWMS M&O/LLNL facilities in Livermore,
California, September 26 through October 4, 1995.

The purpose of the surveillance was to review LLNL's revised
quality assurance grading process to determine if LLNL's work is
subject to audit under the current Quality Assurance Requirements
and Description document criteria for performing audits.

This surveillance is considered completed and closed as of the
date of this letter. A response to this surveillance record is
not required.

If you have any questions, please contact either Mario R. Diaz at
794-7974 or Patrick V. Auer at 295-9185.

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:MRD-268

Enclosure:
Surveillance Record
YMP-SR-95-044

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YMP-5

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PDR WASTE PDR
WM-11

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MHD3/1

OCT 27 1995

cc w/encl:

D. A. Dreyfus, HQ (RW-1) FORS
R. W. Clark, HQ (RW-3.1) FORS
T. A. Wood, HQ (RW-14) FORS
C. J. Henkel, NEI, Washington, DC
J. G. Spraul, NRC, Washington, DC
W. L. Belke, NRC, Las Vegas, NV
R. R. Loux, NWPO, Carson City, NV
Cyril Schank, Churchill County Commission, Fallon, NV
D. A. Bechtel, Clark County Comprehensive, Las Vegas, NV
J. D. Hoffman, Esmeralda County, Goldfield, NV
Eureka County Board of Commissioners, Eureka, NV
Lander County Board of Commissioners, Battle Mountain, NV
Jason Pitts, Lincoln County, Pioche, NV
V. E. Poe, Mineral County, Hawthorne, NV
P. A. Niedzielski-Eichner, Nye County, Chantilly, VA
L. W. Bradshaw, Nye County, Tonopah, NV
William Offutt, Nye County, Tonopah, NV
Florindo Mariani, White Pine County, Ely, NV
B. R. Mettam, County of Inyo, Independence, CA
Mifflin and Associates, Las Vegas, NV
S. L. Bolivar, LANL, Los Alamos, NM
R. E. Monks, LLNL, Livermore, CA
J. D. Christensen, Kiewit/PB, Las Vegas, NV
R. R. Richards, SNL, Albuquerque, NM, M/S 1333
R. P. Ruth, M&O, Las Vegas, NV
T. H. Chaney, USGS, Denver, CO
C. K. Van House, YMQAD/QATSS, Las Vegas, NV
A. W. Rabe, YMQAD/QATSS, Las Vegas, NV

OFFICE OF
 RADIOACTIVE WASTE MANAGEMENT
 U.S. DEPARTMENT OF ENERGY
 WASHINGTON, D.C.

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

¹ORGANIZATION/LOCATION:
 Civilian Radioactive Waste
 Management System Management
 and Operating Contractor (CRWMS
 M&O)/ Lawrence Livermore
 National Laboratory (LLNL)

²SUBJECT:
 LLNL Revised Quality Assurance Grading
 Process

³DATE:
 9/26/95 through 10/4/95

⁴SURVEILLANCE OBJECTIVE:
 Review LLNL revised quality assurance grading process to determine if LLNL work is subject to audit under the current
 Quality Assurance Requirements and Description (QARD) document criteria for performing audits.

⁵SURVEILLANCE SCOPE:
 Review rationale and criteria used for grading Q or non-Q activities for the following:
 laboratory, computer modeling, document preparation, and in-situ thermal testing in
 Work Breakdown Structure (WBS) 1.2.3.12.1, 1.2.3.12.2, 1.2.3.12.3, 1.2.3.12.4,
 1.2.3.12.5, 1.2.3.10.1, 1.2.3.10.2, 1.2.3.10.3.1, 1.2.3.10.3.2.

⁶SURVEILLANCE TEAM:
 Team Leader:
Patrick V. Auer
 Additional Team Members:
John F. Pelletier

⁷PREPARED BY:
Patrick V. Auer 9-22-95
~~10-26-95~~ ~~10-26-95~~
 Surveillance Team Leader Date

⁸CONCURRENCE:
 N/A
 QA Division Director Date

SURVEILLANCE RESULTS

⁹BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:
 See Page(s) 2 through 7

¹⁰SURVEILLANCE CONCLUSIONS:
 See Page 4

¹¹COMPLETED BY:
Patrick V. Auer 10-26-95
 Surveillance Team Leader Date

¹²APPROVED BY:
John F. Pelletier 10-26-95
 QA Division Director Date

Block 9 (continued) BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:

The purpose of this surveillance was to verify compliance of LLNL's grading process with Office of Civilian Radioactive Waste Management (OCRWM) QARD DOE/RW-0333P, Revision 4. This verification included a review of the effectiveness, of LLNL's revised quality assurance grading process for the grading of "Q" and "Non-Q" activities. The surveillance was performed from September 26 through October 4, 1995 at LLNL in Livermore, California and the Bank of America Building in Las Vegas, Nevada.

GRADING PROCESS:

Grading reports for activities associated with WBS numbers listed in Attachment 1 were reviewed to evaluate the methodology, rationale, and criteria for applying the QARD to work activities. A summary of the WBS numbers and associated activities is contained in the table in Attachment 1.

LLNL personnel grade all activities assigned to the laboratory by the Yucca Mountain Site Characterization Office (YMSCO) through the Participant Planning Sheets (PPSs) in accordance with their procedure 033-YMP-QA-2.8, Rev. 4, Quality Assurance Grading. Approximately 70% of the work activities currently assigned to LLNL have been graded under the new revision of the procedure. The remaining 30% are currently in the review cycle. The results of the grading process between Revisions 3 and 4 are essentially the same; the terminology was changed from "quality affecting" to "subject to the QARD." Interviews with LLNL personnel indicate that the terminology is currently being reviewed for another change.

A review of the table in Attachment 1 indicates that many of the activities are "prototype" or "scoping" work. The LLNL grading process is intended to apply appropriate controls to all activities, whether determined to be quality affecting and "subject to the QARD" or not quality affecting. The same general set of procedures is used to control all activities; however, additional controls are placed on work determined to be "subject to the QARD," such as activity plans and additional technical and quality implementing procedures.

Grading reports were not reviewed for WBS numbers 1.2.3.10.3.2, 1.2.3.12.1, and 1.2.3.12.5 due to lack of activity.

TRAINING FILES REVIEWED:

The following personnel training files were reviewed to verify compliance to LLNL 033-YMP-QP 2.8, Rev. 4, "Quality Assurance Grading," LLNL 033-YMP-QP 2.9, Rev. 5, "Indoctrination and Training," and LLNL 033-YMP-QP 2.10, Rev. 5, "Qualification of Personnel." All Training files reviewed were found to be in compliance with the governing procedure.

Personnel	Procedure	Revision	Effective Date
Monks, Royce	033-YMP-QP-2.08	4	3/10/95
	033-YMP-QP-2.09	5	3/10/95
	033-YMP-QP-2.10	5	9/26/94
Wilder, Dale	033-YMP-QP-2.08	4	3/10/95
	033-YMP-QP-2.09	5	3/10/95
	033-YMP-QP-2.10	5	9/26/94
Clarke, Willis	033-YMP-QP-2.08	4	3/10/95
	033-YMP-QP-2.09	5	3/10/95
	033-YMP-QP-2.10	5	9/26/94
Blink, Jim	033-YMP-QP-2.08	4	3/10/95
	033-YMP-QP-2.09	5	3/10/95
	033-YMP-QP-2.10	5	9/26/94
Palmer, Cindy	033-YMP-QP-2.08	4	3/10/95
	033-YMP-QP-2.09	5	3/10/95
	033-YMP-QP-2.10	5	9/26/94
Glassely, Bill	033-YMP-QP-2.08	4	3/10/95
	033-YMP-QP-2.09	5	3/10/95
	033-YMP-QP-2.10	5	9/26/94

DOCUMENTS REVIEWED:

Attachment 1 includes a listing of the Planning and Scheduling Accounts reviewed by Work Breakdown Structure Number (WBS), Activity Numbers, Scientific Investigation Plan (SIP), and LLNL Quality Assurance Grading (QAG) report numbers.

Additionally, the following procedures were reviewed:

- LLNL Procedure 033-YMP-QP 2.8, Revision 4, "Quality Assurance Grading" (Entire Procedure)
- LLNL Procedure 033-YMP-QP 2.9, Revision 5, "Indoctrination And Training" (Paragraphs 2.9.3.1, 2.9.3.3, 2.9.5, 2.9.7, 2.9.10.2, 2.9.12.1)
- LLNL Procedure 033-YMP-QP 2.10, Revision 5, "Qualification Of Personnel" (Paragraphs 2.10.3, 2.10.4, 2.10.5)

Yucca Mountain Administrative Procedure (YAP) YAP-2.6Q, Revision 0, "Determination Of Quality Affecting Work"
 YAP-30.47, Revision 0, "Cost/Schedule Baseline Change Proposal Process"

PERSONNEL CONTACTED:

Royce Monks, Quality Assurance Manager (LLNL)
Cami Brumburgh, Quality Assurance Administrative Specialist (LLNL)
Raymond Hamati, Quality Assurance Engineer (LLNL)
Dale Wilder, Technical Area Leader (LLNL)
Cindy Palmer, Task Leader (LLNL)
Bill Halsey, Technical Area Leader (LLNL)
Joyce Sharp, Training Coordinator (LLNL)
Judy Zimmerman, Manager, Plans and Procedures Department (M&O, Las Vegas, NV)

Block 10 (continued) SURVEILLANCE CONCLUSIONS:

In conclusion, the process for applying appropriate quality controls to activities which are assigned to LLNL is considered adequate for the work activities reviewed. No deficiency documents were issued as a result of this surveillance; however, two recommendations for consideration are listed below. Additional surveillances of other organizations should be planned and completed to verify activities are being graded in accordance with QARD requirements.

RECOMMENDATIONS:

1. Revise YAP-2.6Q and YAP-30.47 to require Deliverable Identification numbers to be traceable to the work activity specified in the Statement of Work, e.g., include a statement such as "this work will be reported in milestone 1234" within the Statement of Work section. This would facilitate traceability of work activities to appropriate grading reports and quality requirements
2. Create and document a matrix, database or other method to link the Deliverable Identification number (from PPSs), SIP number, activity plan number, and activity number to the quality assurance grading report number in order to better track work activities directed by YMSCO to the specific grading reports.

ATTACHMENT 1

WBS Number & Activity Description	Activity Number	SIP Number	Grading Report Number	Q-List Applies Yes/No	QARD Applies Yes/No
1.2.3.10.1 EQ3/6 Model Development (Code Development)	GCM-03.2	SIP-2	LLNL-QAG-L059, Rev. 1	Yes	Yes
1.2.3.10.2 Main Testing of Coupled Thermo-Mechanical Hydrologic Coupling Processes (Small Block)	LBT-04.2	SIP-NF-2	LLNL-QAG-L064, Rev. 0	Yes	Yes
1.2.3.10.3.1 Source Term Model Development	G-20-6	SIP-UCID-21274	LLNL-QAG-L039, Rev. 0	Yes	No Scoping
1.2.3.10.3.1 Interaction of Actinide Bearing Solutions with Rock Core Samples (Preliminary and Scoping Experiments)	G-20-3.0	SIP-UCID-21274	LLNL-QAG-L047, Rev. 1	Yes	No Scoping
1.2.3.10.3.1 Determination of Elemental Profiles in Rocks, Minerals, and Glasses	G-20-2	N/A	LLNL-QAG-L005, Rev. 0	Yes	No Scoping
1.2.3.10.3.1 Interaction of Materials Under Repository Conditions	G-20-5	SIP-UCID-21274	LLNL-QAG-L048, Rev. 1	Yes	No Scoping
1.2.3.12.2 Scoping Hydrologic Properties Measurements	GH-01.1	N/A	LLNL-QAG-L033, Rev. 1	Yes	No Scoping

ATTACHMENT 1

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1.2.3.12.2 Geohydrology Model Applications, Analysis, Scoping, Test Design	GH-5.1	N/A	LLNL-QAG-L034, Rev. 1	Yes	No Scoping Calculations
1.2.3.12.3 Scoping Geometrics Properties Measurements	GM-01.1	N/A	LLNL-QAG-L027, Rev. 1	Yes	No Scoping Laboratory Experiments
1.2.3.12.3 Scoping Geomechanics Code and Model Development	GM-03.1	N/A	LLNL-QAG-L028, Rev. 1	Yes	No Scoping Laboratory Experiments
1.2.3.12.3 Scoping/Prototype Model Applications for Geomechanical Analysis	GM-05.1	N/A	LLNL-QAG-L029	Yes	No Scoping Analysis
1.2.3.12.4 Engineered Barrier System (EBS) Field Shake Down Test	EE-02.1	SIP-NF-1	LLNL-QAG-L002, Rev. 2	Yes	No
1.2.3.12.4 Sample for Design of EBS Field Test	EE-01.1	N/A	LLNL-QAG-L030, Rev. 1	Yes	No Prototype
1.2.3.12.4 Model Analysis for Design of EBS Field Test	EE-05.1	N/A	LLNL-QAG-L032, Rev.	Yes	No Prototype
1.2.3.12.4 Sample Analysis for EBS Field Test	EE-01.2	N/A	LLNL-QAG-L056, Rev. 1	Yes	Yes
1.2.3.12.4 EBS Field Test	EE-02.2	N/A	LLNL-QAG-L-057, Rev. 1	Yes	Yes
1.2.3.12.4 Model Application for EBS Field Test	EE-05.2	N/A	LLNL-QAG-L058, Rev. 0	Yes	Yes

ATTACHMENT 1

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1.2.3.12.4 Design, Fabrication and Installation of a Loading Frame and other Boundary Condition Equipment	LET-02	SIP-NF-2	LLNL-QAG-L062, Rev. 0	Yes	No
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