



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

OCT 04 1996

L. D. 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

**EVALUATION OF RESPONSE TO DR YM-96-D-064 RESULTING FROM YMQA
AUDIT YM-ARC-96-16 OF LOS ALAMOS NATIONAL LABORATORY**

The Yucca Mountain Quality Assurance staff has evaluated the response to Deficiency Report YM-96-D-064. The response has been determined to be satisfactory. Verification of completion of the corrective action will be performed after the effective date provided. Any extension to this date must be requested in writing, with appropriate justification, prior to the date. Please send a copy of extension requests to Deborah Sult, YMQA/QATSS, P.O. Box 98608, Mail Stop 455, Las Vegas, Nevada 89193-8608.

If you have any questions, please contact either Mario R. Diaz at (702) 794-1489 or Richard L. Maudlin at (702) 794-1302.

Richard E. Spence
Yucca Mountain Quality Assurance

YMQA:MRD-2786-0010

Enclosure:
DR YM-96-D-064

cc w/encl:

T. A. Wood, DOE/HQ (RW-14) FORS
J. G. Spraul, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
J. A. Canepa, M&O/LANL, Los Alamos, NM
M. J. Clevenger, M&O/LANL, Los Alamos, NM
R. L. Strickler, M&O, Vienna, VA
B. R. Justice, M&O, Las Vegas, NV
Records Processing Center

cc w/o encl:

W. L. Belke, NRC, Las Vegas, NV
R. L. Maudlin, YMQA/QATSS, Las Vegas, NV
D. G. Sult, YMQA/QATSS, Las Vegas, NV
D. G. Horton, DOE/OQA, NV

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

ORIGINAL
REGISTERED STAMP
☐ Performance Report
☒ Deficiency Report
NO. **YM-ARC-96-0064**
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PERFORMANCE/DEFICIENCY REPORT

1 Controlling Document:

QARD, Revision 5 / LANL-YMP-QP-03.20, Revision 4

2 Related Report No.

YM-ARC-96-16

3 Responsible Organization:

Los Alamos National Laboratory (LANL)

4 Discussed With:

B. J. Fabryka-Martin / A. Wolfsberg

5 Requirement/Measurement Criteria:

QARD, Section 1.2.2(A), states: "Software verification and software validation shall be performed prior to release. In those cases where this requirement cannot be met prior to the release of the software, the portions of the software that have not been verified and validated shall be identified and controlled and written justification of the reason documented."

LANL-YMP-QP-03.20, Subparagraph 6.2.1, states in part: "It is the responsibility of the SCM to ensure that software verification and validations of developed or modified software is performed prior to release."

6 Description of Condition:

Contrary to the above:

- A. LANL procedure YM-QP-03.20, Revision 4, does not require: (1) that written justification be documented when software that has not been verified and validated is released for use and (2) the mechanism for controlling its use prior to validation and verification.**
- B. Software FEHM was used in the Chlorine-36 (quality affecting) activity in the Milestone Report: "Systematic Sampling for Chlorine-36 in Exploratory Studies Facility;" however there is no documented evidence to establish (1) documented justification for use and (2) released for use under the configuration management program. NOTE: Software FEHM is not verified and validated and has not been placed under configuration management.**

7 Initiator

Richard L. Maudlin

Date 7/2/96

8 QA Review

QAR

Date 7/2/96

10 Response Due Date:

20 Working Days From Issuance

11 QA Issuance Approval

QAR (PR)/AOGAM (DR)

Date 7/11/96

12 Remedial Actions:

- a. An investigation was performed to see if the subject wording was missing from QP-03.20, Revision 4.**
- b. A check was performed to determine if FEHM was used in quality affecting work, and to determine when FEHM was entered into configuration management.**

13 Remedial Actions Response By:

Date

14 Remedial Action Due Date

Date

15 Remedial Action Response Acceptance

QAR

Date

16 PR Verification /Closure

QAR

Date

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DEFICIENCY REPORT

17 Recommended Actions:

- A. Investigate the impact on quality in using software which has not been released for use. Also, determine if there are other instances of software being used for quality affecting work which has not been formally accepted.
- B. Identify what actions will or have been taken to bring the FEHM software under configuration management.
- C. Revise LANL-YMP-QP-03.20 to be consistent with the requirements of the QARD.

18 Investigative Actions:

JTF 8/9/96

- LANL-YMP-QP-03.20, Revision 4, subsection 6.2.1, 2nd paragraph does ~~not~~ require that written justification be documented when software that has not been verified and validated is released for use. Subsection 6.2.1 second paragraph, states, "It is the responsibility of the Software Control Manager (SCM) to ensure that software verification and validation of developed or modified software is performed prior to release. In those cases where this is not done prior to the release of software, written justification for the reason is normally documented in a memorandum, where the portions of software that have not been verified and validated will be identified

19 Root Cause Determination:

As previously stated in block 18, it has been determined that an analysis was not required.

20 Action to Preclude Recurrence:

No action is required.

21 Response By:

Michael D. Clemenger Date 8/9/96

22 Corrective Action Completion Due Date

30 DEC 96 *On* 1/25/96

23 Response Accepted

QAR *[Signature]* Date 8/25/96

24 Response Accepted

AOQAM *[Signature]* Date 10/3/96

25 Amended Response Accepted

QAR Date

26 Amended Response Accepted

AOQAM Date

27 Corrective Action Verified

QAR Date

28 Closure Approved by:

AOQAM Date

Exhibit AP-16.1Q.2

Rev. 07/03/95

8/9/96 EES-13-C8-96-1238

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RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
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8 ☐ Performance Report
☒ Deficiency Report

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PR/DR CONTINUATION PAGE

#18 continued

and controlled" (see attached copy of LANL-YMP-QP-03.20, Revision 4, subsection 6.2.1).

- ° The report cited was submitted as a letter report (see memo #EES-13-04-95-1014 attached), considered as non-quality effecting, and did not require a policy review by the Project and therefore did not undergo the review process described in LANL-YMP-QP-03.23, Revision 3. Had it been submitted as a quality affecting report, it would have been subjected to the review process, and a statement would have been documented in accordance with LANL YMP quality assurance requirements. There is also a statement in the abstract of the report that indicates that the formal technical review required by the LANL YMP Quality Assurance program had not been completed. FEHM (originally FEHMN) was entered into Configuration Management on 3/11/91. It was not verified and validated but it undergoing validation and verification at this time so that it can be used on quality effecting work.

a. **Application Field**

Obtain the application field from the name specified in the application's file list (AFL).

b. **First Release**

If this is the first release of the application, set the version number (vv) to 01, the revision number (rr) each to 00, and terminate the process.

c. **Minor Release**

If the release incorporates only minor functional changes, construct the remainder of the release label as follows:

- Retain the version number found in the release label of the most recent prior release of the product and assign this value to the version number field.
- Increment the revision number found in the release label of the most recent prior release of the product and assign this value to the revision number field.

d. **Major Release**

If the release incorporates major functional changes (new or substantially revised interfaces, models, or logic for example), construct the remainder of the release label as follows:

- Increment the version number found in the release label of the most recent prior release of the product and assign this value to the version number field.
- Reset the revision number to 00 and assign this value to the revision number field.

e. **Update the SCM controlled datasets**

Record the release label as an attribute of the SCM controlled datasets containing the corresponding release of the application.

6.2 Configuration Control

6.2.1 Releases

This section describes the procedures for software dissemination control and performing a release of information from the SCM controlled datasets. These datasets contain the archived baselines for Los Alamos SCM controlled certified and development software.

It is the responsibility of the SCM to ensure that software verification and validation of developed or modified software is performed prior to release. In those cases where this is not done prior to the release of software, written justification for the reason is normally documented in a memo, where the portions of software that have not been verified and validated will be identified and controlled.

6.2.1.2 SCM

SCM processes a request for release of SCM controlled datasets information as follows:

a. Verification

Upon receipt of a ST:

- Verify that the form is signed by the originator.
- Verify that the software or document is available for release.
- Determine whether the information provided on the form is complete and consistent with the type of release being requested.
- Determine whether SCM has the authority to issue the release or whether CCB approval must be obtained.
- The CCB approves releases intended for distribution outside the Los Alamos YMP.

If verification fails, check the Not Accepted box in the Disposition field of the ST, and proceed to Step (d) of this subsection.

b. Disposition

Perform one of the following actions based upon the outcome of Step (a) of this subsection.

- If the information is complete and appropriate and the release can be performed as requested, check the Accepted box and proceed to Step (d) of this subsection.
- If the release requires minor modifications to the request, contact the originator and update the ST form. Then if the release can be performed as requested, check the Accepted box, and proceed to Step (c) of this subsection.
- If CCB action is required:
 - 1 Check the CCB Action box

Los Alamos NATIONAL LABORATORY

Earth and Environmental Sciences Division
EES-13-Nuclear Waste Management R&D
Mail Stop J521, Los Alamos, NM 87545
Phone (505) 667-9768, Fax (505) 667-1934

ATTACHMENT 2
ym-96-0064

THIS IS A YMP
MILESTONE

NO. 8788 AD

April 3, 1996

EES-13-04-95-1014

C. Thomas Statton
Manager of Scientific Program Operations
M&O/WCFS, Mail Stop 423
101 Convention Center Drive
Las Vegas, NV 89109

Transmittal of Completed Los Alamos Milestone 3783 AD, "Summary Report of Cl^{36} Studies: Systematic Sampling for Chlorine-36 in the Exploratory Studies Facility" (WBS 1.2.3.3.1.2.2)

Dear Mr. Statton:

In compliance with YAP-5.1Q, I am writing to inform you that the following Los Alamos milestone has been completed.

Milestone 3783 AD, "Summary Report of Cl^{36} Studies: Systematic Sampling for Chlorine-36 in the Exploratory Studies Facility" (WBS 1.2.3.3.1.2.2)

This milestone was designated a letter report in the Los Alamos Project Control system. A letter report as defined by the system does not require a policy review by the Project. This milestone report may become part of a large document of publishable quality.

A copy of this milestone is attached to this letter.

In compliance with YAP-5.1Q, I have attached a Document Action Request form. Also enclosed is a Subcontract Change for FY96 showing the addition of this level 4 milestone to Job Number 2A3831. As described in Julie Canepa's attached letter the due date for this deliverable is March 30, 1996.

Sincerely,


Julie A. Canepa

JAC/SHK/lb

Att: a/s

Cy w/enc.

G.S. Bodvarsson, LBL, Berkeley, CA
M. Brady, SNL, Las Vegas, NV
S. Hanauer, DOE/HQ, Washington, DC
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D. Gillies, USGS, Denver, CO
B. Mukhopadhyay, M&O/WCFS, Las Vegas, NV
S. Nelson, M&O/WCFS, Las Vegas, NV
M. Peters, M&O/WCFS, Las Vegas, NV
R. L. Patterson, DOE/YMSCO, MS 523
D. Hoxie, USGS, LV, NV
R. Henning, M&O/WCFS, LV
G.Y. Bussod, EES-13, MS J521

J.A. Canepa, EES-13, MS J521
S.H. Klein, EES-13, MS J521
A.L. Thompson, EES-13/LV, MS J900/527
J.T. Fabryka-Martin, CST-7, MS J514

Cy w/o enc.

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