



Department of Energy

Washington, DC 20585

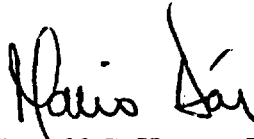
JAN 13 1997

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

**VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF DEFICIENCY REPORT
(DR) YM-96-D-064 RESULTING FROM OFFICE OF QUALITY ASSURANCE (OQA)
AUDIT YM-ARC-96-16 OF LOS ALAMOS NATIONAL LABORATORY**

The OQA staff has verified the corrective action to DR YM-96-D-064 and determined the results to be satisfactory. As a result, the DR is considered closed.

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

for 
Donald G. Horton, Director
Office of Quality Assurance

OQA:MRD-0685

Enclosure:
DR YM-96-D-064

cc w/encl:
T. A. Wood, DOE/HQ (RW-55) FORS
J. O. Thoma, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
B. R. Justice, M&O, Las Vegas, NV
R. A. Morgan, M&O, Las Vegas, NV
J. A. Canepa, M&O/LANL, Los Alamos, NM
M. J. Clevenger, M&O/LANL, Los Alamos, NM
Records Processing Center = "13"

cc w/o encl:
W. L. Belke, NRC, Las Vegas, NV
R. L. Maudlin, OQA/QATSS, Las Vegas, NV
D. G. Sult, OQA/QATSS, Las Vegas, NV
R. W. Clark, DOE/OQA, Las Vegas, NV

1/1
NH33
wm-11
102.7

210039

Recip: nmss/HLUR

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

Performance Report
 Deficiency Report
NO. YMPAD-96-D064
PAGE 1 OF 3
QA: L

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 I.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 [Signature], Date 7/2/96

10 Response Due Date: 20 Working Days From Issuance
11 QA Issuance Approval: QAR (PR)/AOCAM (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: [Signature], Date [Blank]
14 Remedial Action Due Date: [Blank], Date [Blank]

15 Remedial Action Response Acceptance: QAR, Date [Blank]
16 PR Verification /Closure: QAR, Date [Blank]

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

DR NO. YMGAF-96-D064
PAGE 2 OF 73
QA: L

JF 8/9/96

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:

JF 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: <i>Michael D. Clewenger</i> Date <i>8/9/96</i>	22 Corrective Action Completion Due Date <i>30 DEC 96</i> <i>Q</i> <i>9/25/96</i>
23 Response Accepted QAR <i>[Signature]</i> Date <i>9/25/96</i>	24 Response Accepted AOQAM <i>[Signature]</i> Date <i>10/3/96</i>
25 Amended Response Accepted QAR <i>N/A</i> Date	26 Amended Response Accepted AOQAM <i>N/A</i> Date
27 Corrective Action Verified QAR <i>[Signature]</i> Date <i>1/8/97</i>	28 Closure Approved by: AOQAM <i>[Signature]</i> Date <i>1/13/97</i>

Exhibit AP-16.1Q.2

8/9/96 *EE5-13-C8-96-1238*

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

8 Performance Report
 Deficiency Report

NO. 4M-96-D-084
PAGE 3 OF 3
QA: L

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) 667-9763, Fax (505) 667-1834

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
R. Craig, USGS, Las Vegas, NV
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.

P.R. Burke, M&O/TRW, Las Vegas, NV
W.L. Clarke, LLNL, Livermore, CA
J. Haynes, EES-13, MS J521
M.E. Herrera, LATA, MS M321
V.F. Ioril, YMSCO, Las Vegas, NV
S.B. Jones, YMSCO, Las Vegas, NV
EES-13 File, MS J521

17 December 1996

From: CCB Chairman Gilles Bussod

To: SCM Brad Gundlach

Rev 1.0  *1/7/97*

Subject: FEHM[®] Implementation Baseline Closure Configuration Control Board (CCB) Meeting Minutes

The CCB met on 17 December 1996 to decide on the approval of the FEHM , *Rev 1.0*
Implementation Baseline Closure Review. *su 1/7/97*

All Review comments were addressed to the satisfaction of the reviewers.

After a majority vote of the CCB membership, the FEHM[®] Implementation Baseline Closure Review is approved. *Rev 1.0 su 1/7/97*

The SCM is authorized to process the baseline for distribution and records forwarding.


Gilles Bussod
CCB Chairman

12/18/96

To: Hank Greene

From: John Friend

Subject: Corrective Action Completion To Deficiency Report YM-96-D-064

Hank;

Attached is a memo that approves the FEHM code for use. All validation and verification have been completed and the code may now be distributed. Please forward this to Dick Maudlin for his review. Please call if you should have any questions.

Thanks, John



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

8 Performance Report
 Deficiency Report

NO. YM-96-D-064

PAGE _____ OF _____

QA: L

PR/DR CONTINUATION PAGE

EVALUATION AND CLOSURE OF DR YM-96-D-064

Based on your response dated August 9, 1996 and a review of the Configuration Control Board meeting minutes of 17 December 1996, the conditions noted in DR YM-96-D-064 have been resolved. An evaluation of software configuration control, as it relates to the use of FEHM and other software, will be evaluated in future audits of Los Alamos National Laboratory. No further action is required.

As a result, no further action is required in resolution to this DR. This DR is considered closed.



R.L. Maudlin, QAR

1/7/97

Date