



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

SEP 28 1995

Robert W. Craig  
Acting Technical Project Officer  
for Yucca Mountain Site  
Characterization Project  
U.S. Geological Survey  
101 Convention Center Drive, Suite 860  
Las Vegas, NV 89109

ISSUANCE OF DEFICIENCY REPORT (DR) YMQAD-95-D-016 THROUGH  
YMQAD-95-D-018 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE  
DIVISION'S (YMQAD) AUDIT YM-ARP-95-20 OF U.S. GEOLOGICAL SURVEY  
(SCPB: N/A)

Enclosed are DRs YMQAD-95-D-016 through YMQAD-95-D-018 generated  
as a result of YMQAD Audit YM-ARP-95-20.

Please identify the corrective actions to be taken and  
implemented to correct the deficiencies. PR/DR Continuation  
Pages have been provided. Send the originals of your responses  
to Deborah Sult, YMQAD/QATSS, 101 Convention Center Drive,  
Suite 640, Las Vegas, Nevada 89109. Responses to the DRs are  
due 20 working days after the date of this letter. Extensions  
to due dates must be requested in writing, with appropriate  
justification, prior to the due dates.

If you have any questions, please contact either Robert B.  
Constable at 794-7945 or Kenneth O. Gilkerson at 794-7738.

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-4668

Enclosures:

1. DRs YMQAD-95-D-016 through  
YMQAD-95-D-018
2. PR/DR Continuation Pages

020102

YMP-5

9510020166 950928  
PDR WASTE PDR  
WM-11

102.7  
WM-11  
NH23

Robert W. Craig

-2-

SEP 28 1995

cc w/encls:

J. G. Spraul, NRC, Washington, DC  
S. W. Zimmerman, NWPO, Carson City, NV  
T. H. Chaney, USGS, Denver, CO  
R. W. Craig, USGS, Las Vegas, NV  
D. D. Porter, SAIC, Golden, CO  
R. P. Ruth, M&O, Las Vegas

cc w/o encls:

W. L. Belke, NRC, Las Vegas, NV  
D. G. Sult, YMQAD/QATSS, Las Vegas, NV

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

8  Performance Report  
 Deficiency Report  
NO. YM/QAD-95-D-016  
PAGE 1 OF 2  
QA: L

**PERFORMANCE/DEFICIENCY REPORT**

1 Controlling Document:  
DOE/RW QARD-0333P Revision 4

2 Related Report No.  
YM-ARP-95-20

3 Responsible Organization:  
USGS/LBL

4 Discussed With:  
Tom Chancy/Martha Mustard

5 Requirement/Measurement Criteria:  
Section 2.2.11 states "Each organization shall establish a program for the evaluation, selection, indoctrination, training, and qualification of personnel performing work subject to QARD requirements. The program shall:...H. Ensure the required indoctrination and training for a specified task is completed prior to performing the task."

6 Description of Condition:  
Contrary to the above, a number of LBL personnel working to the USGS QA program under a MOA until July, 1995 were not trained and/or indoctrinated as required. The following LBL personnel were not trained to USGS procedures:  
R. Ahlers- Not trained or indoctrinated to the USGS QA program procedures  
M. Bandurraga- Not trained or indoctrinated to the USGS QA program procedures  
Z. Aunzo-Indoctrinated to YMP but not to any USGS procedures.  
C. Haukwa--Indoctrinated to YMP but not to any USGS procedures.  
Y. Wu- Not trained to USGS procedure QMP 5.05 although individual is responsible for keeping the scientific notebook  
NOTE: The MOA identifies all job tasks to LBL as requiring QARD controls. The MOA specifically requires all document reviews to be performed in accordance with USGS procedure QMP-3.04

7 Initiator:  
*K.O. Gilkerson*  
K.O. Gilkerson Date 09/18/95

9 QA Review:  
*K.O. Gilkerson*  
QAR K.O. Gilkerson Date 09/18/95

10 Response Due Date  
20 working days after issuance.

11 QA Issuance Approval:  
*K.O. Gilkerson*  
QAR (PR/AO/SAM) (S) Date 9/27/95

12 Remedial Actions:

13 Remedial Action Response By:  
Date

14 Remedial Action Due Date  
Date

15 Remedial Action Response Acceptance  
QAR Date

16 PR Verification/Closure  
QAR Date

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

8  
DR NO. YMQAD-95-D-016  
PAGE 2 OF 2  
QA: L

**DEFICIENCY REPORT**

**17 Recommended Actions:**

Determine if other LBL and subcontractor personnel assigned to perform tasks under the USGS program are appropriately trained and indoctrinated. Evaluate the work (tasks) performed by untrained personnel to determine adequacy of work and the impact of the personnel not being trained. Identify cause for noncompliance. Present corrective action and any remedial actions based on extent of deficiency.

**18 Investigative Actions:**

**19 Root Cause Determination:**

**20 Action to Preclude Recurrence:**

**21 Response by:**

Date

**22 Corrective Action Completion Due Date:**

**23 Response Accepted**

QAR

Date

**24 Response Accepted**

AOQAM

Date

**25 Amended Response Accepted**

QAR

Date

**26 Amended Response Accepted**

AOQAM

Date

**27 Corrective Actions Verified**

QAR

Date

**28 Closure Approved by:**

AOQAM

Date

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

8  Performance Report  
 Deficiency Report  
NO. YMQAD-95-D017  
PAGE 1 OF 2  
QA: L

**PERFORMANCE/DEFICIENCY REPORT**

1 Controlling Document:  
DOE/RW-0333P, Rev. 4

2 Related Report No.  
YM-ARP-95-20

3 Responsible Organization:  
US Geological Survey (USGS)

4 Discussed With:  
Warren Day, Tom Chaney

5 Requirement/Measurement Criteria:

- QARD III.2.1.A Scientific investigations shall be planned in accordance with Section 2.0 of the QARD.
- QARD 2.2.4 Planning shall be performed to ensure work is accomplished under suitably controlled conditions.
  - 2.2.4.C Identification of applicable standards and criteria.
- QARD 2.2.2.B.3 The system shall provide positive control over external interfaces ...

YLP-4.1Q-YMSCO Par. 5.1.1.e determines the applicability of QARD requirements to the scope of work that is defined in the Procurement Plan

6 Description of Condition:

The Technical Data Information Form (TDIF) GS950708314211.033 for report "Stratigraphic Relations and Hydrologic Properties of the PTn Hydrogeologic Unit, Yucca Mountain, Nevada" by Moyer, Geslin, and Flint identifies that the report is not qualified because of the inclusion of some non-qualified borehole data. Most of the supporting data for the report is qualified. However, the WBS is classified as Q by DOE and is also so classified in the Participant Planning Sheet in the Planning and Control System (PACS). USGS also has classified this milestone as Q. The report should be qualified as required by the governing procurement documents and in order for it to be used in subsequent activities. The submittal of the report to DOE did not include a completed copy of the TDIF as required by YAP-5.1Q. Therefore, DOE had no formal notification that the report was not qualified. There is no documentation of any DOE change to the PACS requirements.

7 Initiator

Alan W. Rabe

Date 09/21/95

9 QA Review

QAR Alan W. Rabe

Date 09/21/95

10 Response Due Date

20 working days after issuance

11 QA Issuance Approval

QAR (PR)/AOQAM

Date 9/27/95

12 Remedial Actions:

13 Remedial Action Response By:

Date

14 Remedial Action Due Date

Date

15 Remedial Action Response Acceptance

QAR

Date

16 PR Verification/Closure

QAR

Date

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

8  Performance Report  
 Deficiency Report

NO. OF  
PAGE OF  
QA: L

**PR/DR CONTINUATION PAGE**

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

**8**  
DR NO. YMQAD-95-017  
PAGE 2 OF 2  
QA: L

**DEFICIENCY REPORT**

**17 Recommended Actions:**

Revise the TDIF to show the report as qualified. The provisions of YAP-SIII.3Q, Par. 3.15 must be followed when qualifying a report. Several options are available to correct the report qualification.:

1. Upgrade the data in accordance with procedure xxxxxx.
2. Clearly identify in the report which data is not qualified and include an evaluation that states that the conclusions are not dependent upon the nonqualified data.
3. Exclude the nonqualified data from the report.

Alternatively, obtain written approval of the nonqualified classification from DOE.

Also review the extent of this condition and identify corrective actions as appropriate.

**18 Investigative Actions:**

**19 Root Cause Determination:**

**20 Action to Preclude Recurrence:**

**21 Response by:**

Date

**22 Corrective Action Completion Due Date:**

**23 Response Accepted**

QAR

Date

**24 Response Accepted**

AOQAM

Date

**25 Amended Response Accepted**

QAR

Date

**26 Amended Response Accepted**

AOQAM

Date

**27 Corrective Actions Verified**

QAR

Date

**28 Closure Approved by:**

AOQAM

Date

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

8  Performance Report  
 Deficiency Report

NO. OF  
PAGE OF  
QA: L

**PR/DR CONTINUATION PAGE**



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

8  Performance Report  
 Deficiency Report  
NO. YMQAD-95-D018  
PAGE 1 OF 3  
QA: L

**PERFORMANCE/DEFICIENCY REPORT**

1 Controlling Document:  
DOE/RW-0333P, Rev. 4, Quality Assurance Requirements and Description

2 Related Report No.  
YM-ARP-95-20

3 Responsible Organization:  
US Geological Survey (USGS)

4 Discussed With:  
Warren Day, Tom Chaney

5 Requirement/Measurement Criteria:

**QARD 2.2.9 Document Review**

Documents shall be reviewed to the following requirements...

- A. criteria shall include correctness
- B. Pertinent background information or data shall be made available to the reviewers

6 Description of Condition:

The referenced section of the QARD was implemented in procedures governing software, procurement documents, procedures and scientific notebooks, but was not incorporated in Procedure YMP-USGS-QMP-3.04, Rev. 6, Review and Approval of YMP-USGS Data, Interpretations of Data, and Manuscripts. The implementation of the requirement must clearly direct the performance of an adequate review as specified in QARD 2.2.9.

In the case of procedure YMP-USGS- QMP-3.04, although the procedure does provide for a review, it fails to require the reviewers to assure the correctness of the document they are reviewing. YMP-USGS-QMP-3.04, R. 6, Par. 5.2 states, "The author, through the YMP-USGS Reports Specialist , shall provide the reviewers with copies of the manuscript accompanied by appropriate documents ..., as well as a copy of the data review documentation...." Therefore, the reviewer need only assure that a data review was done, not that the data was correctly transfered to the technical report they are reviewing. As an example, the technical reviewers for report "Fracture Character of the Paintbrush Tuff Non-welded Hydrologic Unit, Yucca Mountain, Nevada" did not refer to the supporting data packages when performing their reviews. The scope of review was documented by one reviewer

7 Initiator *AWR*  
Alan W. Rabe Date 09/27/95

9 QA Review *AWR*  
QAR Alan W. Rabe Date 09/27/95

10 Response Due Date

11 QA Issuance Approval *AWR*  
QAR (PR)/AOQAM Date 9/27/95

12 Remedial Actions:

13 Remedial Action Response By:  
Date

14 Remedial Action Due Date  
Date

15 Remedial Action Response Acceptance  
QAR Date

16 PR Verification/Closure  
QAR Date

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

**8**  
DR NO. YMQAD-95-D018  
PAGE 2 OF 3  
QA: L

**DEFICIENCY REPORT**

**17 Recommended Actions:**

Revise YMP-USGS-QMP-3.04 to clearly specify the responsibility for review of the transfer of data into the report (ie. correctness of the final report). Document the review of this transfer for the report referenced in Block 6, evaluate the extent and impact of the condition on other reports, and identify corrective actions if necessary. Revise the RTN to show incorporation of QARD Section 2 requirements in QMP-3.04.

**18 Investigative Actions:**

**19 Root Cause Determination:**

**20 Action to Preclude Recurrence:**

**21 Response by:**

Date

**22 Corrective Action Completion Due Date:**

**23 Response Accepted**

QAR

Date

**24 Response Accepted**

AOQAM

Date

**25 Amended Response Accepted**

QAR

Date

**26 Amended Response Accepted**

AOQAM

Date

**27 Corrective Actions Verified**

QAR

Date

**28 Closure Approved by:**

AOQAM

Date

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

8  Performance Report  
 Deficiency Report

NO. YMQAD-95-D018

PAGE 3 OF 3

QA: L

PR/DR CONTINUATION PAGE

6. (continued)

as only being of the report itself. The other technical reviewer stated that the review was only of the report and did not include looking at the data in the data packages. The problem is that there is no review to assure that data from the data package was properly transcribed into the report. Discussions with management confirmed that the normal expectation does not require the technical reviewers to do such a review. The USGS in practice considers this the sole responsibility of the author. An example of a clear incorporation of the requirement is given in OCWRM procedure QAP 6.2, Rev. 2, Attach. 9.4, Par. 2.10, which states, "Does the final document correctly incorporate technical input?"

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

8  Performance Report  
 Deficiency Report

NO. OF  
PAGE OF  
QA: L

**PR/DR CONTINUATION PAGE**