



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

JAN 17 1996

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 CORRECTIVE ACTION REQUEST (CAR) YMQAD-96-C002
RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S
(YMQAD) AUDIT OF THE U.S. GEOLOGICAL SURVEY (SCPB: N/A)

Enclosed is CAR YMQAD-96-C002 generated as a result of a YMQAD
audit.

In accordance with the implementation of Administrative
Procedure 16.2Q, CAR YM-95-045 and YMQAD-95-046 have been closed;
and CAR YMQAD-96-C002 is being issued. These CARs were combined
due to the similar deficient conditions and the proposed
corrective actions. Under direction of the Office of Quality
Assurance, this transfer to the new CAR system was necessary for
these CARs, as their resolution dates extend beyond the end of
the calendar year.

No additional action regarding resolution and closure of this CAR
is required on your part except that it will be necessary in
future correspondence to refer to the new CAR number in lieu of
the original CAR numbers.

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WM-11 PDR

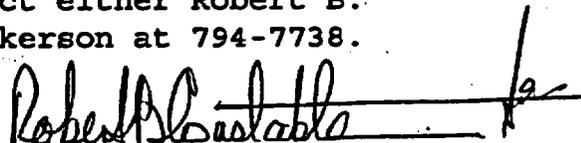
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JAN 17 1996

Robert W. Craig

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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-946

Enclosures:

1. CAR YMQAD-96-C002
2. CAR Continuation Page

cc w/encls:

- J. G. Spraul, NRC, Washington, DC
- S. W. Zimmerman, NWPO, Carson City, NV
- T. H. Chaney, USGS, Denver, CO

cc w/o encls:

- W. L. Belke, NRC, Las Vegas, NV
- D. G. Sult, YMQAD/QATSS, Las Vegas, NV
- K. O. Gilkerson, YMQAD/QATSS, Las Vegas, NV
- A. W. Rabe, YMQAD/QATSS, Las Vegas, NV
- C. C. Warren, YMQAD/QATSS, Las Vegas, NV

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

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CAR NO. YMQAD-96-C002
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QA: L

CORRECTIVE ACTION REQUEST

1 Controlling Document: QARD, Rev. 2
2 Related Report No.: YM-ARP-95-12, CARsYM-95-046 & 045

3 Responsible Organization: USGS
4 Discussed With: M. Chornack, J. Whitney, L. Anderson

5 Requirement:
Note: This CAR is issued to supercede CARs YM-95-046 (see A statements) and YM-95-045 (see B statements) in order to implement the revised OCRWM Corrective Action Program. These CARs were combined due to the similar deficient conditions and the proposed corrective actions.

A. QARD, Rev. 2, Paragraph 2.2.29F, states: "Mandatory comments from the review shall be documented and resolved before approving the document."
B. QARD, Rev. 2, Paragraph 2.2.9A states: "Review criteria shall be established before performing the review. These criteria shall consider applicability, correctness, technical adequacy, completeness, accuracy, and compliance with established requirements."

6 Description of Condition:

A. 1. Many of the "non-mandatory" technical comments appeared to be "mandatory." One technical reviewer had six pages of non-mandatory comments which the reviewer indicated had to be incorporated into the report to make the study technically correct.

2. There was no documented evidence that the author resolved mandatory comments if the initial disposition of the reviewer's comments was a rejection by the author.

3. Discussion: An examination of the Technical and QA reviews of the Stagecoach Road fault, the Bare Mountain fault zone, and the Paintbrush Canyon fault investigations reports performed by USGS resulted in a number of issues requiring consideration for process improvement.

The mandatory comments made by Larry Anderson (USBR Geologist) were responded to by the author with a number of Larry Anderson's comments being rejected. There is no documentation of how these disagreements were resolved. The same observations were made in the technical reviews of the Bare Mountain and Paintbrush Canyon fault investigations. The USGS procedure (continued)

7 Initiator: *Kenneth O. Gilkerson* Date 1/9/96
9. Does a stop work condition exist?
Yes ___ No ; If Yes, Attach copy of SWO
If Yes, Check One: A B C D

10. Recommended Actions:
In the extent of deficiency evaluation, determine impact for past deliverables which may not have had technical comments resolved appropriately.

11 QA Review: *Kenneth O. Gilkerson* Date 1/9/96
12 Response Due Date: N/A
~~20 working days from issuance~~ 1/11/96

13 Affected Organization QA Manager Issuance Approval:
Printed Name ROBERT B. COSTABLE
Signature *Robert B. Costable* Date 1.16.96

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B
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QA: L

CORRECTIVE ACTION REQUEST

14 Remedial Actions:
See Responses to CARs YM-95-045 and YM-95-046

15 Investigative Actions:
See Responses to CARs YM-95-045 and YM-95-046

16 Root Cause Determination:
See Responses to CARs YM-95-045 and YM-95-046

17 Action to Preclude Recurrence:
See Responses to CARs YM-95-045 and YM-95-046

18 Response by:

N/A Date

19 Corrective Action Due Date:

20 Response Accepted

QAR N/A Date

21 Response Accepted

AOQAM N/A Date

22 Amended Response Accepted

QAR N/A Date

23 Amended Response Accepted

AOQAM N/A Date

24 Corrective Actions Verified

QAR Date

25 Closure Approved by:

AOQAM Date

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8 Corrective Action Request
 Stop Work Order

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CAR/SWO CONTINUATION PAGE

A. Block 6 - Adverse Condition (Continuation)

procedure QMP-3.04, Rev. 6, requires that mandatory comments be resolved, but does not require that this resolution of how it was resolved to be documented. The procedure does require that the Chief, ESIP sign the comment sheet indicating that the author's responses to the reviewer comments are adequate, but this does not assure resolution of mandatory comments. Further discussions with the signatory (for Chief, ESIP) for the reports review disclosed that he only briefly reviewed the reports and did not in fact assure that mandatory comments were resolved. Discussions with one of the reviewers disclosed that no one in USGS ever contacted him about resolving his mandatory comments on this review...or any other.

Another issue denoted in the review of technical comments to this study was that many of the comments depicted as "non-mandatory" were in fact "mandatory." When six pages of "non-mandatory" comments by a technical reviewer are prefaced by the remarks that incorporation of the non-mandatory comments will result in the study being technically correct, it would appear that these technical comments should have been "mandatory" comments. It is recommended that management review the definitions for "mandatory" in the procedure for consistent application by the reviewers. All comments relative to technical adequacy and accuracy are mandatory.

B. Block 6 - Adverse Condition (Continuation)

Contrary to the above, the technical review of quaternary faulting studies have failed to adequately address the above described requirements resulting in an unacceptable product.

Discussion:

The quaternary faulting studies relative to the Stagecoach Road investigation (SCP 8.3.1.17.4.6) have been completed, reviewed and submitted to YMSCO (DOE) for review and concurrence. Although a technical review and QA review was performed by USGS, the report "Paleoseismic Investigations of the Stagecoach Road Fault, Southeastern Yucca Mountain, Nye County, Nevada," contain numerous technical errors which detract significantly from what is basically a good study. Examples include:

1. Table 1 provides age boundaries for subdivisions of the Quaternary Period, but these are not followed consistently in the text.
2. Tables 4 and 7 list 6 TL dates and 4 U-series dates. The text says that age estimates are derived from 11 TL and 3 U-series dates. Sample HD 1439 is provided a date on table 7 but cannot be located on the trench logs.
3. The dates discussed for sequences D and F in trench SCR-TI are reversed.

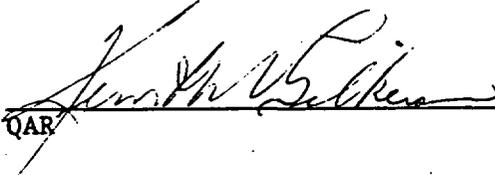
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8 CAR NO.: YM-95-045

PAGE: OF
 QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

Conditions adverse to quality identified in this CAR are transferred to
CAR YMQAD-96-C002 in order to implement the revised OCRWM Corrective Action
Program. This CAR is considered closed.


QAR _____

1/10/96
Date

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8 CAR NO.: YM-95-046
PAGE: OF
 QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

Conditions adverse to quality identified in this CAR are transferred to
CAR YMQAD-96-C002 in order to implement the revised OCRWM Corrective Action
Program. This CAR is considered closed.

QAR



1/10/96
Date