



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

**DEC 27 1994**

Larry R. Hayes  
Technical Project Officer  
for Yucca Mountain  
Site Characterization Project  
U.S. Geological Survey  
101 Convention Center Drive  
Suite 860  
Las Vegas, NV 89109

VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF CORRECTIVE ACTION REQUEST (CAR) YM-94-047 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD) AUDIT YMP-94-06 OF U.S. GEOLOGICAL SURVEY (SCPB: N/A)

The YMQAD staff has verified the corrective action to CAR YM-94-047 and determined the results to be satisfactory. As a result, the CAR is considered closed.

If you have any questions, please contact either Robert B. Constable at 794-7945 or James Blaylock at 794-7913.

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-1493

Enclosure:  
CAR YM-94-047

cc w/encl:

~~D. 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, USGS/SAIC, Golden, CO

cc w/o encl:

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

YMP-5

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PDR WASTE  
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NATZ

THIS IS A RED STAMP

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

8 CAR NO.: YM-94-047  
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**CORRECTIVE ACTION REQUEST**

1 Controlling Document QARD, Rev. 0	2 Related Report No. YMP-94-06
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3 Responsible Organization USGS	4 Discussed With T. CHANEY
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5 Requirement:  
DOE/RW/0333P QARD, Section 2.2.9c, states for Document Review: "The review shall be performed by individuals other than the originator."  
QARD Section 2.2.9f states: "Mandatory comments resulting from the review shall be documented and resolved before approving the document."  
QARD Supplement III, Section III 2.2.4 states: "The reviewer shall be independent from the collector."

6 Adverse Condition:

1. Contrary to the QARD Requirements, QMP-3.04 does not require review comment resolution with the independent technical reviewer. QMP-3.04, para. 5.4.3.2 and 5.4.4.4 requires the YMPB Program Chief to resolve comments. The YMPB Program Chief responsibilities of directing the work defeats the independence of the review.
2. Contrary to QARD an independent data review was not performed for Geologic Data DTN #G5920708314221.003:
  - The reviewer changed data without an independent review.
  - The Acting Program Chief GSP approved the review.

9 Does a Significant Condition Adverse to Quality exist? Yes ___ No <u>X</u> If Yes, Circle One: A B C D E	10 Does a stop work condition exist? Yes ___ No <u>X</u> ; If Yes - Attach copy of SWO If Yes, Circle One: A B C	3 Response Due Date: 20 Working Days from Issuance
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11 Required Actions:  Remedial  Extent of Deficiency  Preclude Recurrence  Root Cause Determination

12 Recommended Actions:

1. Revised QMP 3.04 to be consistent with QMP 3.07 and meet QARD requirements.
2. Perform the actions indicated in block 11.

7 Initiator T. SWIFT <i>C.C. Warner for</i> 6-30-94	14 Issuance Approved by <i>[Signature]</i> for Date 7-4-94
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15 Response Accepted QAR <i>C.C. Warner</i> Date 8-11-94	16 Response Accepted QADD <i>[Signature]</i> for Date 8-19-94
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17 Amended Response Accepted QAR Date	18 Amended Response Accepted QADD Date
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19 Corrective Actions Verified QAR <i>J. Blaylock</i> Date 12/20/94	20 Closure Approved by <i>[Signature]</i> for Date 12-23-94
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ENCLOSURE

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**CORRECTIVE ACTION REQUEST (Continuation Page)**

**1. CORRECTIVE ACTION RESPONSE FOR ITEM 1 OF CAR No. YM-94-047**

- A. **REMEDIAL ACTION:** Reviewed YMP-USGS QMP-3.04, R5 as it applies to QARD requirements cited.
- B. **EXTENT OF THE DEFICIENCY:** Existing requirements were investigated. The requirements of QARD Supplement III.2.4.A.3 and Section 2.2.9F are met with existing YMP-USGS-QMP-3.04 R5-M1 requirements but may be enhanced by including the independent technical reviewer in the comment resolution process. The Program Chiefs are generally independent of the data collection, therefore it is appropriate for responsible YMPB-USGS Program Chiefs to determine satisfactory resolution of review comments and provide independent judgement between scientific opinions and evaluate comments and responses to assure that appropriate resolution actions are taken.
- C. **ROOT CAUSE DETERMINATION:** YMP-USGS-QMP-3.04, R5 did not provide for the participation of the independent technical reviewer in the comment resolution process nor did it stipulate independence of the Program Chief from the actual work under review.
- D. **CORRECTIVE ACTION TO PRECLUDE RECURRENCE:** YMP-USGS-QMP-3.04, R5 will be modified to include the independent technical reviewer in the comment resolution process and to ensure independence (as defined in QARD Supplement III.2.4A.3) of responsible management for instances when the author and reviewer cannot come to resolution.

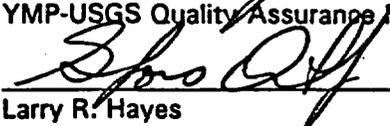
**2. For each action above, identify the name of the individual assigned responsibility for completion of the action and the anticipated (or actual, if complete) completion date.**

- 1.A., B., & C. M.H.Mustard, YMP-USGS Quality Assurance Specialist 7-22-94  
A.M.Whiteside, YMPB QA Implementation Advisor
- 1.D. R. Scavuzzo, Quality Assurance Specialist 08/31/94  
A.M. Whiteside, YMPB QA Implementation Advisor

**3. RESPONSE APPROVED:**

  
\_\_\_\_\_  
Thomas H. Chaney  
YMP-USGS Quality Assurance Manager

8/1/94  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Larry R. Hayes  
Chief, Yucca Mountain Project Branch

8/1/94  
\_\_\_\_\_  
Date

8/9/94 Ltn. Hayes to Spence

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**CORRECTIVE ACTION REQUEST (Continuation Page)**

**1. CORRECTIVE ACTION RESPONSE FOR ITEM 1 OF CAR No. YM-94-047**

- A. **REMEDIAL ACTION:** J.R. Price's field notebook contained in the data package entitled Geologic Mapping of the East of Beatty Mountain 7.5 minute Quadrangle, Nye County, Nevada has been rereviewed by an independent investigator in accordance with QMP-3.04. The requirements of QMP-3.04 have been met and the data package has been supplemented to include the additional review and reference to this corrective action request.
- B. **EXTENT OF THE DEFICIENCY:** All data packages submitted by the Geologic Studies Program have been evaluated to determine independence of the reviewer. No other incidences of the cited deficiency were evident.
- C. **ROOT CAUSE DETERMINATION:** In the case of this data package, Price's field notes were included in the package and reviewed as data. In the infancy of the data program, we were not careful in distinguishing the difference between data and its supporting information. The rereview of this data package has determined that the field notes were inappropriately treated as data.
- D. **CORRECTIVE ACTION TO PRECLUDE RECURRENCE:** As shown by the investigative actions, this is an isolated case of where the reviewer was not independent. There are no additional corrective actions necessary to prevent recurrence.

**3. RESPONSE APPROVED:**

  
\_\_\_\_\_  
Thomas H. Chaney  
YMP-USGS Quality Assurance Manager

10/17/94  
Date

  
\_\_\_\_\_  
Larry R. Hayes  
Chief, Yucca Mountain Project Branch

10/17/94  
Date

10/17/94 LTR. HAYES TO SPENCE

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WASHINGTON, D.C.

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**CORRECTIVE ACTION REQUEST (Continuation Page)**

**1. CORRECTIVE ACTION RESPONSE FOR ITEM 2 OF CAR No. YM-94-047**

- A. **REMEDIAL ACTION:** Geologic data for cited DTN GS920708314221.003 are being re-reviewed by an independent reviewer as required by YMP-USGS-QMP-3.04.
- B. **EXTENT OF DEFICIENCY:** An investigation will consist of sampling other reviewed data to determine if problems are noted with reviewer independence.
- C. **ROOT CAUSE DETERMINATION:** To be determined based upon completion of investigative actions noted in 1.B above.
- D. **CORRECTIVE ACTION TO PRECLUDE RECURRENCE:** To be determined based upon completion of root cause determination.

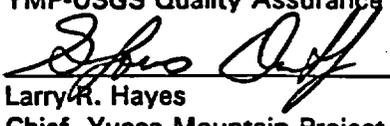
**2. For each action above, identify the name of the individual assigned responsibility for completion of the action and the anticipated (or actual, if complete) completion date.**

- 1.A. J.S.Stuckless, GSP Chief to assure completion of review. 10/03/94
- 1.B. T.M.Mendez-Vigo, GSP QA Implementation Specialist to complete sampling and present results to GSP Chief. 10/03/94
- 1.C. & D. J.S.Stuckless and T.M.Mendez-Vigo to provide supplemental CAR response to outline results and remaining actions. 10/17/94

**3. RESPONSE APPROVED:**

  
\_\_\_\_\_  
Thomas H. Chaney  
YMP-USGS Quality Assurance Manager

8/11/94  
Date

  
\_\_\_\_\_  
Larry R. Hayes  
for Chief, Yucca Mountain Project Branch

8/11/94  
Date

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**CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)**

Verification Statement for CAR YM-94-047

The USGS modified QMP-3.04, R5 to require an independent technical review; QMP 3.04, R5-M2, with an effective date of 10/31/94, mandates the independent technical review. The data page, Geologic Data DTN #G5920708314221.002, was subjected to an independent technical review and appended to a copy of the data package. This appended response is captured by GS.94.A.100678 and GS.94.A.100679.

James Blaylock  
James Blaylock, QAR

12/20/94  
Date