



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

*TO: Ken Hooks*

WBS 1.2.9.3  
 QA

JUL 18 1991

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

EVALUATION OF RESPONSE TO CORRECTIVE ACTION REQUEST (CAR) YM-91-050 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) AUDIT YMP-91-05 OF THE U. S. GEOLOGICAL SURVEY (USGS)

The YMQAD staff has evaluated the response to CAR YM-91-050. 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 that date. Please send a copy of extension requests to Nita J. Brogan of Science Applications International Corporation.

If you have any questions, please contact either Catherine E. Hampton at (702) 794-7973 or FTS 544-7973, or Stephen R. Dana at (702) 794-7176 or FTS 544-7176.

*Catherine Hampton*

Donald G. Horton, Director  
 Yucca Mountain Quality Assurance Division

YMQAD:CEH-4819

Enclosure:  
 CAR YM-91-050

cc w/encl:  
 T. H. Chaney, USGS, Denver, CO  
 K. R. Hooks, NRC, Washington, DC  
 S. W. Zimmerman, NWPO, Carson City, NV

cc w/o encl:  
 N. J. Brogan, SAIC, Las Vegas, NV, 517/T-08  
 D. D. Porter, SAIC, Golden, CO  
 J. W. Gilray, NRC, Las Vegas, NV

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 WM-11  
 NA03*

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

14 CAR NO.: YM-91-50  
DATE: 5/30/91  
SHEET: 1 OF 2  
QA  
WBS No.: 1.2.9.3

**CORRECTIVE ACTION REQUEST**

1 Controlling Document YMF-USGS-QAPP-01, R5, YMP-USGS-QMP-5.01, R4	2 Related Report No. Audit No. YMP 91-05
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3 Responsible Organization USGS	4 Discussed With T. E. Chaney/L. R. Hayes
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10 Response Due 6/28/91	11 Responsibility for Corrective Action L. R. Hayes, USGS TPO	12 Stop Work Order Y or N N
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5 Requirement:

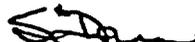
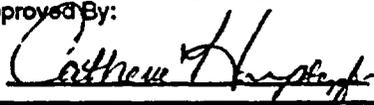
(1) Para. 2.5: The USGS shall establish requirements for the selection, indoctrination, and training of personnel performing or verifying activities that affect quality . . . . The requirements shall establish position descriptions, set forth minimum personnel qualifications . . . prior to initiation of activities that affect quality." (2) YMP-USGS-QMP-5.01, R4, Para. 5.4, "A technical review of the technical procedure and its revisions shall be performed by a subject matter expert . . . ."

6 Adverse Condition:

A review of USGS procedure SP-06, R2, was performed by C. Langer. In accordance with USGS-QMP-3.07, a "Technical Reviewer Selection Form" was completed. The basis of qualifications for the reviewer was familiarity with the subject. The basis of qualification does not establish the minimum qualifications required, nor does it establish a basis to support that the individual is a subject matter expert.

7 Recommended Action(s):

Identify the remedial action(s) to be taken to correct the deficiencies noted in Block 6. Investigate the program process, activities or documentation to determine the extent and depth of similar deficient conditions on the CAR. Identify these deficiencies and provide

8 Initiator S. Dana 	Date: 5/30/91	9 Severity Level - 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/>	13 Approved By: OQA  5-30-91	Date:
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15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted: OAR _____ Date _____	17 Closure Approved By: OQA _____
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**CORRECTIVE ACTION REQUEST  
(continuation sheet)**

7 Recommended Action(s) (continued)

the measures required to correct them. Identify the cause of the condition and the planned corrective action to prevent recurrence.

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SHEET: \_\_\_\_\_ OF \_\_\_\_\_

**CORRECTIVE ACTION REQUEST**  
(continuation sheet)

CORRECTIVE ACTION RESPONSE:

1. CORRECTIVE ACTION FOR DEFICIENT CONDITION (CAR No. YM-91-50)

- A. Extent of Deficiency: The completed "Technical Reviewer Selection Form" was examined. The form does not list minimum qualifications required to establish a basis for a reviewer as a subject matter expert. An investigation is underway by the Geologic Division QA Implementation Specialists to evaluate the technical procedures for seismology (SPs) to determine if similar deficiencies exist. The results of this investigation will be outlined in a supplemental response by 8-1-91.
- B. Root Cause: The Technical Reviewer Selection Form states only "Familiarity with subject" to describe the qualifications of the reviewer. Upon further examination of the reviewer qualifications, it has been determined that the statement is not in error; however, the statement is too brief to achieve an understanding of the reviewer's qualifications. If the investigation reveals other causes, the results will be outlined in the 8-1-91 supplemental response.
- C. Remedial Action: The Technical Reviewer Selection Form will be completed as follows:  
Name - Charles Langer  
Title - Seismologist  
Employer - USGS, Branch of Geologic Risk Assessment  
Basis of Qualification - Charles Langer earned his master's degree in Geophysics from the Virginia Polytechnic Institute State University, Blacksburg, Virginia. He has been employed as a seismologist with the USGS since 1972 and has authored 85 professional papers in his field.

The Branch Chief, K.M. Shedlock, has determined the reviewer to be "familiar with the subject" and considers the reviewer's ability to be far above the acceptable minimum qualification standard. Therefore, there was no adverse impact on the quality of the review that was conducted. If the investigation reveals similar deficiencies, appropriate remedial actions will be taken and the results will be outlined in the 8-1-91 supplemental response.

- D. Corrective Action to Prevent Recurrence: At this point, this condition appears to be an isolated occurrence. The Branch Chief is aware of the information to be included on the forms, through coordination with the Geologic Division QA Implementation Specialists to correct the one form. If the investigation indicates other instances, appropriate preventive measures will be outlined in the 8-1-91 supplemental response.

RESPONSE APPROVED BY: \_\_\_\_\_

*Larry R. Hart*

DATE: 6/28/91

*Ltr dtd 6/28/91 - Change to Harton*

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CAR NO. YM-91-050

DATE: \_\_\_\_\_

SHEET: \_\_\_\_\_ OF \_\_\_\_\_

**CORRECTIVE ACTION REQUEST**  
(continuation sheet)

Response Accepted: S. Davis 7/11/91  
QAR Date

Response Accepted: Anthony Hampton Jr 7-13-91  
OQA Date