



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

FEB 29 1996

Wesley E. Barnes, Project Manager, YMSCO, NV  
ATTN: James R. Compton, YMSCO, NV

EVALUATION OF RESPONSE TO DEFICIENCY REPORT (DR) YMQAD-96-D009  
RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S  
(YMQAD) AUDIT YM-ARP-96-01 (SCPB: N/A)

The YMQAD staff has evaluated the response to DR YMQAD-96-D009.  
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 the date. Please send a copy of  
extension requests to Deborah Sult, YMQAD/QATSS, 101 Convention  
Center Drive, Suite 640, Las Vegas, Nevada 89109.

If you have any questions, please contact either Robert B.  
Constable at 794-7945 or Donald J. Harris at 794-7356.

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-1256

Enclosure:  
YMQAD-96-D009

cc w/encl:

J. G. Spraul, NRC, Washington, DC  
S. W. Zimmerman, NWPO, Carson City, NV  
Patricia Pytel, M&O, Las Vegas, NV  
D. S. White, M&O, Las Vegas, NV  
E. R. Cooper, YMSCO, NV

cc w/o encl:

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

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**PERFORMANCE/DEFICIENCY REPORT**

1 Controlling Document: QARD DOE/RW-0333P, Revision 4, YAP2.2Q, Rev. 0/ICN 1, YAP2.6Q, Rev 0/ICN2  
2 Related Report No. YM-ARP-96-01

3 Responsible Organization: YMSCO  
4 Discussed With: R. Williams, B. Parks, T. Chaney, S. Pezzopane

5 Requirement/Measurement Criteria:  
1) QARD, Supplement III, Section III.2.1, Planning Scientific Investigations:  
A. Scientific investigations shall be planned in accordance with Section 2.0 of the QARD.  
B. Planning shall be coordinated with organizations providing input to or using the results of the investigation.  
C. Planning shall address provisions for determining the accuracy, precision, and representativeness of results.  
D. Planning documents shall meet the requirements of Section 5.0, "Implementing documents," and Section 6.0, "Document Control."  
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6 Description of Condition:  
1) Contrary to the identified requirements identified as 1), 2), and 3); the Study Plan for Relevant Earthquake Sources (8.3.1.17.3.1) that is currently in place is obsolete. The Study Plan emphasizes the concept of a 10,000 year cumulative slip earthquake. This concept was abandoned by the Project over 2 years ago. The Topical Report YMP/TR-002 NP, dated June 1994, provides the project approach to assess fault displacement and vibratory Ground Motion Hazards at Yucca Mountain. Consequently, there is no current planning document in effect at the time of the audit (10/23/95) and work is not being controlled by an updated Study Plan describing the projects approach to identify relevant earthquake sources.  
2) Contrary to identified requirements identified as 4)  
a) The Participant Planning Sheet for P&S account 1.2.3.2.8.3.1 USGS, PWBS Element Title - Relevant Earthquake Sources references studies 8.3.1.17.4.1 and 8.3.1.17.3.6 (prepared 12/20/94) fails to provide Current Project direction to USGS or UNRSL.  
(Contd. Page 4)

7 Initiator: Robert McCleary for Donald J Harris  
Date: 10/27/95  
9 QA Review: QAR Donald J Harris Date 11/1/95

10 Response Due Date: 20 working days from issuance  
11 QA Issuance Approval: QAR (PR)/AQQAM (DR) [Signature] Date 11/7/95

12 Remedial Actions:

13 Remedial Action Response By: N/A Date  
14 Remedial Action Due Date: N/A Date

15 Remedial Action Response Acceptance: N/A Date  
16 PR Verification/Closure: N/A Date

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**17 Recommended Actions:**

- 1) Develop a Study Plan revision for 8.3.1.17.3.1 that reflects the current project approach to the identification of relevant earthquake sources in accordance with YAP 2.2Q, "Preparation, Review, Approval, and Revision of the Site Characterization Plan.
- 2) Change the Participant Planning Sheets for the statement of work to reflect the desired content of the deliverable.

**18 Investigative Actions:**

**19 Root Cause Determination:**

**20 Action to Preclude Recurrence:**

**21 Response by:**

*J. Timothy Sullivan* Date *2/22/96*

**22 Corrective Action Completion Due Date:**

*April 12, 1996*

**23 Response Accepted**

QAR *al Harris* Date *2/22/96*

**24 Response Accepted**

AQQAMM *Blowshole* Date *2-28-96*

**25 Amended Response Accepted**

QAR Date

**26 Amended Response Accepted**

AQQAMM Date

**27 Corrective Actions Verified**

QAR Date

**28 Closure Approved by:**

AQQAMM Date

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Block 5 continued

2) QARD, Section 2.0, Quality Assurance Program.

QARD 2.2.2B Quality Assurance Program Documents

Affected Organizations shall establish quality assurance implementing documents applicable to the scope of work that translates QARD requirements in work processes.

- The system shall accommodate the size and location(s) of the organization, the organizational structure, and the nature of the work such that management processes will be carried out effectively.
- The system shall provide positive control over external interfaces between affected organizations and internal interfaces within an organization. An interface exists when one organization prescribes an activity or requirements to, or shares an activity or requirement with another organization.

QARD 2.2.4 Planning Work

Planning shall be performed to ensure work is accomplished under suitably controlled conditions. Planning elements shall include, as appropriate:

- A. Definition of the work scope, objectives, and a listing of the primary tasks involved.
- B. Identification of scientific approach or technical methods used to collect, analyze, or study results of applicable work.
- C. Identification of applicable standards and criteria.
- D. Identification and selective application, or development, of appropriate implementing documents.
- E. Identification of field and laboratory testing equipment, or other equipment.
- F. Identification of, or provisions for the identification of, required records and the recording of objective evidence of the results of the work performed.
- G. Identification or quality assurance program verification to overview the work performed of the product produced.
- H. Identification of prerequisites, special controls, environmental conditions, processes, or skills.
- I. Identifications of computer software

3) YAP 2.2Q, "Preparation, Review, Approval, and Revision of Site Characterization Plan Study Plans."

1.0 Purpose

This procedure assigns responsibility and provides a process so that Site Characterization Plan (SCP) DOE/RW-0199, Study Plans (SPs) are prepared, reviewed, approved, and revised in a consistent manner. This procedure implements the 1993 U.S. Department of Energy (DOE)/Nuclear Regulatory Commission (NRC) Level of Detail Agreement and Review Process for SPs. Attachment 9.1, DOE Content Requirements for Descriptions of Studies in SCP Study Plans, cannot be changed without negotiation with the NRC. This procedure also implements applicable requirements of the Office of Civilian Radioactive Waste Management Quality Assurance Requirements and Description (QARD), DOE/RW-0333P.

3.0 Definitions

3.6 SPs - DOE documents that describe the studies, activities, tests, and analyses that constitute site characterization activities as defined by the Nuclear Waste Policy Act of 1982, Public Law 97-425, as amended. SPs describe in more detail the studies presented in Chapter 8 or the SCP and are designed to meet the objectives given in the YMP RD. Guidance on the level of detail, format and content of SPs is provided in Attachment 9.1, DOE Content Requirements for Descriptions of Studies in SCP Study Plans.

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4) YAP 2.6Q, Revision ICN 2, "Determination of Quality Affecting Work."

5.1 Technical and Quality Assurance (QA) Review

5.1.1 The AM/Director:

a) assigns a prepare to develop a PPS for each Planning and Scheduling (P&S) Account for which the AM/Director is responsible, to include a statement of work, and related planning information (i.e., scheduling and budgeting information; determination of quality affecting work and application of QA controls (grading); the identification of technical and QA requirements for work determined to be quality affecting; and acceptance criteria that will be used by the YMSCO to determine the acceptability of the work) based on recommendations received from the appropriate Responsible Supplier and the most current YMSCO guidance pertaining to budget and schedule issues.

6.3 Procurement Quality Requirements

Specify the following procurement quality requirements as applicable to the affected statement of work. Enter this information in the statement of work on the PPS.

It is permissible to impose these requirements of the Responsible Supplier using the existing contract between the DOE and the Responsible Supplier. When the contract is used as the vehicle for imposing any or all of the applicable procurement quality requirements, the PPSs must provide traceability to the correct contract. Specify or reference ; following as applicable to the item or service being procured:

a) Technical requirements including:

- Specific documents (such as drawings, codes standards, regulations, study plans, procedures, or instructions) that describe the items or service to be furnished. The revision level or change status of these documents or the "latest approved version," shall also be identified.

Block 6 continued

b) USGS contract 1434-93-C-90070 to the Board of Regents, UCCSN, University of Nevada, Reno, dated 10/1/93 and contract modification 2, dated 10/1/93 still references Study Plan activity 8.3.1.17.4.1.2, "Monitor Current Seismicity," and Study Plan Activity 8.3.1.17.4.1.3, "Evaluate Potential for Enduced Seismicity and the Site." (NOTE: effective 9/30/95 this contract was terminated by USGS). The contract was not modified to reflect the desired content of the deliverable (Reference DR Block 6, Item 1).

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Study Plan:

As indicated in the deficiency report, Study Plan 8.3.1.17.3.1 Rev. 0 is inconsistent with Seismic Topical Report #1 that was submitted to the NRC in June 1994. Recognizing this, AMSP initiated Revision 1 to Study Plan 8.3.1.17.3.1 in 1994 so that a revised Study Plan could be issued following NRC acceptance of the Topical Report for review.; however final release of Rev. 1 was delayed until the NRC accepted the Topical Report for review. In a letter dated Sept. 22 1995 the NRC finally informed DOE that their concerns had been satisfactorily addressed and that the Topical Report was accepted for review. Since that time the the study plan revision process has been moving forward and we anticipate completing the process of DOE approval of study Plan 8.3.1.17.3.1 Rev. 1 by April 12, 1996.

Participant Planning sheets:

No change is required. The FY 95 deliverable identified in the Deficiency report has been received and accepted by DOE. Reference to Study Plan 8.3.1.17.4.1 in the criteria statement was to identify one source of the data to be compiled in this deliverable report. No modification to the UNR contract was required. Information gained from the Little Skull Mountain earthquake, for example, collected as part of the "monitor current seismicity" activity in Study Plan 8.3.1.17.4.1 was included in the deliverable. No FY 96 work was authorized in this WBS element.