



**Department of Energy**

Washington, DC 20585

QA: L

**MAY 13 1997**

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**ISSUANCE OF DEFICIENCY REPORT (DR) YM-97-D-032 RESULTING FROM THE OFFICE OF QUALITY ASSURANCE (OQA) SURVEILLANCE YM-SR-97-006**

Enclosed is DR YM-97-D-032 generated as a result of OQA Surveillance YM-SR-97-006.

Please identify the corrective action to be taken and implemented to correct the deficiency. Send the original of your response to Deborah Sult, OQA/QATSS, P.O. Box 30307, Mail Stop 455, North Las Vegas, Nevada 89036-0307. Response to the DR is due 20 working days from the date of this letter. Any extension to the due date must be requested in writing, with appropriate justification, prior to the due date.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or John R. Doyle at (702) 794-1465.

*James Blaylock for*  
Donald G. Horton, Director  
Office of Quality Assurance

OQA:JB-1519

Enclosure:  
DR YM-97-D-032

cc w/encl:  
J. O. Thoma, NRC, Washington, DC  
S. W. Zimmerman, NWPO, Carson City, NV  
Stephanie Barnett, M&O, Las Vegas, NV  
L. D. Foust, M&O, Las Vegas, NV  
L. R. Hayes, M&O, Las Vegas, NV

cc w/o encl:  
W. L. Belke, NRC, Las Vegas, NV  
J. R. Doyle, OQA/QATSS, Las Vegas, NV  
D. G. Sult, OQA/QATSS, Las Vegas, NV  
R. W. Clark, DOE/OQA, Las Vegas, NV

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

8  Performance Report  
 Deficiency Report  
NO. YM-97-D-032  
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PERFORMANCE/DEFICIENCY REPORT

1 Controlling Document:  
Quality Assurance Requirements & Description (QARD), DOE/RW-0333P, Rev. 6

2 Related Report No.  
YM-SR-97-006

3 Responsible Organization:  
Yucca Mountain Site Characterization Office

4 Discussed With:  
Robert V. Barton

5 Requirement/Measurement Criteria:  
QARD, Supplement III, Scientific Investigation, Paragraph III, 2.1 A, states: "Scientific Investigations shall be planned in accordance with Section 2.0, Quality Assurance Program."  
  
QARD, Section 2.2.5, Planning Work, states in part, "Planning shall be documented to ensure work is accomplished under suitably controlled conditions ..."  
  
In documenting and planning scientific investigations, the Department of Energy's (DOE) Office of Civilian Radioactive Waste Management (OCRWM) and Affected Organizations implement YAP-2.2Q, Revision 1, "Preparation, Review, Approval and Revision of Site Characterization Study Plans." (See Page 2)

6 Description of Condition:  
Deficiency Report DR YM-97-D-023 was initiated on January 15, 1997, and identified that USGS had not maintained and/or revised their Study Plans when the methodology of scientific investigation detailed within the Study Plans had been changed.  
  
In discussions with the Yucca Mountain Site Characterization Project Office Deputy Assistant Manager for Licensing and staff, the M&O and the United States Geological Survey (USGS) Technical Project Officer, it was found that in general Study Plans from all participants have not been revised or kept current. As such, it was agreed to close DR YM-97-D-023 and initiate a new DR addressed to the DOE Project Office for resolution of a generic deficiency within the project.  
  
An example of the deficiencies found with USGS Study Plans and the flow down into implementing procedures are:  
  
(See Page 2)

7 Initiator  
John R. Doyle Date 5/2/97

9 Is condition an isolated occurrence?  
 Yes  No  Unknown; Must be Yes if PR

- 10 Recommended Actions: (Not required for PR)
- 1 Develop a plan of action to either: 1) revise study plans to reflect current scientific practices; or 2) provide an alternative method for the planning and documenting scientific investigations.
  - 2 Determine impacts on commitments to the NRC and identify those actions necessary to resolve any conflicts.
  - 3 Provide root cause determination.
  - 4 Provide an evaluation as to the validity of results obtained from not following the Study Plans as committed on work that was performed.
  - 5 Determine those actions necessary to preclude recurrent

11 QA Review  
QAR John R. Doyle Date 5/2/97

12 Response Due Date  
20 working days from issuance

13 Affected Organization QA Manager Issuance Approval: (QAR for PR)

Printed Name D.G. Hemeny Signature James B. [unclear] Date 5/12/97

22 Corrective Actions Verified  
QAR Date

23 Closure Approved by: (N/A for PR)  
AQQAM Date

OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
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Performance Report

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PR/DR CONTINUATION PAGE

Block 5 (Requirement/Measurement Criteria continued)

QARD, YAP-2.2Q, Revision 1, Section 1.0, "Purpose," states in part: "This procedure defines the responsibilities and process to prepare, review, approve, and revise Site Characterization Plan (SCP), DOE/RW-0199, Study Plans (SPs) 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. ... This procedure also implements applicable requirements of the Office of Civilian Radioactive Waste Management Quality Assurance Requirements and Description (QARD, DOE/RW-0333P)."

In addition, Attachment I to YAP -2.2Q states in part:

"The test program presented in Chapter 8 of the SCP will be subdivided into a hierarchy of increasing detail. The SCP test program will include (in increasing detail); generic program investigation study, activity and test procedures. Details for the studies listed will be presented in study plans. Study plans will be separate from the SCP proper and will be issued as required for site characterization. Individual test methods will be discussed in study plans. ..."

Block 6 (Description of Condition: continued)

1) In accordance with Study Plan 8.3.1.2.2.4, "Characterization of Yucca Mountain Unsaturated Zone in the Exploratory Studies Facility," Revision 1, Paragraph 3.8.3.1, the flow rate measurement during sample collection would be required to be taken to assure a flow rate of 500-ml/min. This would require that calibrated instrumentation be installed. However, Technical Procedure (HP) YMP-USGS-HP-56, "Gas and Water Vapor Sampling from Unsaturated-Zone Boreholes" Revision 4, Modification 1, Paragraph 2.2.2.2, stipulates that flow meters used for sample collection are not required to be calibrated. As a result, at the present time samples collected from Borehole ESF-NAD-GTB#1 located in North Ghost Dance Fault Alcove (Alcove #6) of the Exploratory Studies Facility cannot be verified to have been collected at the required flow rate of 500-ml./min.

2) Contrary to Study Plan 8.3.2.2.4, Paragraph 3.8.3.1, Section 2, CO<sub>2</sub> samples collected as a result of Item 1 sampling and CO<sub>2</sub> calibration standards utilized for the calibration of the Infrared Gas Analyzer (IRGA EGM-1, SN 155) are collected and transported in rejected Mylar party balloons.