



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

MAY 16 1996

L. Dale Foust
Technical Project Officer
for Yucca Mountain
Site Characterization Project
TRW Environmental Safety Systems, Inc.
Bank of America Center, Suite P-110
101 Convention Center Drive
Las Vegas, NV 89109

**EVALUATION OF RESPONSE TO DEFICIENCY REPORT (DR) YMQAD-96-D044
RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD)
AUDIT YM-ARP-96-07 OF SANDIA NATIONAL LABORATORIES (SCPB: N/A)**

The YMQAD staff has evaluated the response to DR YMQAD-96-D044. 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 794-5580 or Stephen D. Harris at 794-5522.

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-1670

Enclosure:
DR YMQAD-96-D044

cc w/encl:

T. A. Wood, HQ (RW-14) FORS
J. G. Spraul, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
R. L. Strickler, M&O, Vienna, VA
R. P. Ruth, M&O, Las Vegas, NV
R. R. Richards, M&O/SNL, Albuquerque, NM, M/S 1333
Records Processing Center

cc w/o encl:

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

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PERFORMANCE/DEFICIENCY REPORT

1 Controlling Document: Quality Assurance Requirements and Description, revision 4		2 Related Report No. YM-ARP-96-07	
3 Responsible Organization: Sandia National Laboratory		4 Discussed With: Michael Brady	
5 Requirement/Measurement Criteria: QARD section 5.2.2D. states in part, "Implementing documents shall include the following information as appropriate to the work to be performed: Quantitative or qualitative acceptance criteria sufficient for determining that activities were satisfactorily accomplished." QARD section III.2.6A. and III.2.6B. are the specific requirements to be implemented for Model Validation.			
6 Description of Condition: The Sandia National Laboratory procedure QAIP 2-4, revision 2, references QAIP 1-5, which is in revision 9, for development of a Work Agreement. The Work Agreement, however, does not contain quantitative or qualitative acceptance criteria for implementation of the above QARD requirements. The principal investigator described a process during the audit that appeared to be satisfactory for meeting the needs of model validation for the Geologic Framework Model. The appropriate implementing document needs to reflect the process intended to be used as well as meet the QARD requirements.			
7 Initiator <i>Stephen D. Harris</i> Stephen D. Harris Date 03/01/96		9 QA Review <i>Stephen D. Harris</i> Date 3/5/96	
10 Response Due Date 20 working days from issuance		11 QA Issuance Approval QAR (PRI)/AQQAM <i>[Signature]</i> Date 3.12.96	
12 Remedial Actions: <i>see page 3</i>			
13 Remedial Action Response By: <i>See pg 3</i> Date		14 Remedial Action Due Date <i>See pg 3</i> Date	
15 Remedial Action Response Acceptance QAR <i>N/A</i> Date		16 PR Verification/Closure QAR <i>N/A</i> Date	

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17 Recommended Actions:

Add quantitative or qualitative acceptance criteria to the Work Agreement to reflect the QARD requirements and the process for Model Validation.

18 Investigative Actions:

See page 3

19 Root Cause Determination:

See page 3

20 Action to Preclude Recurrence:

See page 3

<p>21 Response by: <i>[Signature]</i> Date <i>4/4/96</i></p>	<p>22 Corrective Action Completion Due Date: <i>May 15, 1996</i></p>
<p>23 Response Accepted QAR <i>Stephen D. Harris</i> Date <i>4/29/96</i></p>	<p>24 Response Accepted AOQAM <i>[Signature]</i> Date <i>5/15/96</i></p>
<p>25 Amended Response Accepted QAR Date</p>	<p>26 Amended Response Accepted AOQAM Date</p>
<p>27 Corrective Actions Verified QAR Date</p>	<p>28 Closure Approved by: AOQAM Date</p>

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PR/DR CONTINUATION PAGE

Response to Deficiency Report YMQAD-96-D044

12. Remedial Actions Work Agreement (WA) 300, which is the lower-tier WA that directs the performance of the subject model development work, will be revised to address the approach used for model validation and to add qualitative or quantitative criteria (as appropriate) to be used in determining whether the model(s) developed are valid, i.e., model validation activities are successful. For this activity, the model validation approach will consist of verifying that the output is consistent with site data. (Resp. Individ. - L. S. Costin)

18. Investigative Actions All other Work Agreements that deal with model development will be reviewed to determine the extent that they meet the requirements for specifying the approach and criteria for the model validation portion of the activity. (Resp. Individ. - R. R. Richards)

19. Root Cause Determination In this case, the subject Work Agreement addressed acceptance criteria for the overall activity. However, the criteria for the embedded activity of model validation, as well as the desired approach to be used, were not specified. This indicates that the implementing procedure that guides the process of WA preparation, QAIP 1-5, is understood and was used in this case, but the implementing procedure applicable specifically to model development, QAIP 2-4, was not referred to as the WA was prepared or reviewed. Review of QAIP 2-4 also indicates that the need to specify acceptance criteria in the case of model validation analyses (a specific application of this QAIP) is not addressed.

20. Action to Preclude Recurrence

- QAIP 2-4, "Analysis Control and Verification", will be revised to specifically call out the need to establish acceptance criteria for the validation phase of model development in the Work Agreement for the model development activity. (Resp. Individ. - R. R. Richards)
- A QA Advisory will be issued to SNL staff and contractor personnel involved in model development activities in order to highlight the need to specify the approach to be utilized in model validation, as well as the criteria to be applied in determining "validity" of the model, in the governing Work Agreement. (Resp. Individ. - R. R. Richards)
- The checklist used in QA review of Work Agreements will be revised to include a check, for WAs for model development, that the approach to validation and the criteria for validation are included. (Resp. Individ. - R. R. Richards)

22. (Proposed) Corrective Action Completion Due Date: May 15, 1996