



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

FEB 21 1996

Robert W. Craig
Acting 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 DEFICIENCY
REPORT (DR) YMQAD-95-D018 RESULTING FROM YUCCA MOUNTAIN QUALITY
ASSURANCE DIVISION'S (YMQAD) AUDIT YM-ARP-95-20 OF U.S.
GEOLOGICAL SURVEY (SCPB: N/A)

The YMQAD staff has verified the corrective action to DR
YMQAD-95-D018 and determined the results to be satisfactory.
As a result, the DR is considered closed.

If you have any questions, please contact either Robert B.
Constable at (702) 794-7945 or Alan W. Rabe at (702) 794-7042.

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-1181

Enclosure:
YMQAD-95-D018

cc w/encl:
J. G. Spraul, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
T. H. Chaney, USGS, Denver, CO

cc w/o encl:
W. L. Belke, NRC, Las Vegas, NV
A. W. Rabe, YMQAD/QATSS, Las Vegas, NV
D. G. Sult, YMQAD/QATSS, Las Vegas, NV

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

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PERFORMANCE/DEFICIENCY REPORT

1 Controlling Document:
DOE/RW-0333P, Rev. 4, Quality Assurance Requirements and Description

2 Related Report No.
YM-ARP-95-20

3 Responsible Organization:
US Geological Survey (USGS)

4 Discussed With:
Warren Day, Tom Chaney

5 Requirement/Measurement Criteria:

QARD 2.2.9 Document Review

Documents shall be reviewed to the following requirements...

- A. criteria shall include correctness
- B. Pertinent background information or data shall be made available to the reviewers

6 Description of Condition:

The referenced section of the QARD was implemented in procedures governing software, procurement documents, procedures and scientific notebooks, but was not incorporated in Procedure YMP-USGS-QMP-3.04, Rev. 6, Review and Approval of YMP-USGS Data, Interpretations of Data, and Manuscripts. The implementation of the requirement must clearly direct the performance of an adequate review as specified in QARD 2.2.9.

In the case of procedure YMP-USGS-QMP-3.04, although the procedure does provide for a review, it fails to require the reviewers to assure the correctness of the document they are reviewing. YMP-USGS-QMP-3.04, R. 6, Par. 5.2 states, "The author, through the YMP-USGS Reports Specialist, shall provide the reviewers with copies of the manuscript accompanied by appropriate documents ..., as well as a copy of the data review documentation...." Therefore, the reviewer need only assure that a data review was done, not that the data was correctly transferred to the technical report they are reviewing. As an example, the technical reviewers for report "Fracture Character of the Paintbrush Tuff Non-welded Hydrologic Unit, Yucca Mountain, Nevada" did not refer to the supporting data packages when performing their reviews. The scope of review was documented by one reviewer

7 Initiator
Alan W. Rabe *AWR* Date 09/27/95

9 QA Review
QAR Alan W. Rabe *AWR* Date 09/27/95

10 Response Due Date
20 working days after issuance

11 QA Issuance Approval
QAR (PR)/AOQAM *AWR* Date 9/27/95

12 Remedial Actions:

13 Remedial Action Response By:
See amended response *AWR* Date

14 Remedial Action Due Date
See amended response *AWR* Date

15 Remedial Action Response Acceptance
QAR Date

16 PR Verification/Closure
QAR *N/A* Date

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17 Recommended Actions:
Revise YMP-USGS-QMP-3.04 to clearly specify the responsibility for review of the transfer of data into the report (ie. correctness of the final report). Document the review of this transfer for the report referenced in Block 6, evaluate the extent and impact of the condition on other reports, and identify corrective actions if necessary. Revise the RTN to show incorporation of QARD Section 2 requirements in QMP-3.04.

18 Investigative Actions:

19 Root Cause Determination:

20 Action to Preclude Recurrence:

21 Response by: <i>See amended response</i> Date	22 Corrective Action Completion Due Date: <i>See amended response</i>
23 Response Accepted QAR _____ Date _____	24 Response Accepted AOQAM _____ Date _____
25 Amended Response Accepted QAR <i>[Signature]</i> Date <i>12/7/95</i>	26 Amended Response Accepted AOQAM <i>[Signature]</i> Date <i>12-12-95</i>
27 Corrective Actions Verified QAR <i>[Signature]</i> Date <i>2/13/96</i>	28 Closure Approved by: AOQAM <i>[Signature]</i> Date <i>2-15-96</i>

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6. (continued)

as only being of the report itself. The other technical reviewer stated that the review was only of the report and did not include looking at the data in the data packages. The problem is that there is no review to assure that data from the data package was properly transcribed into the report. Discussions with management confirmed that the normal expectation does not require the technical reviewers to do such a review. The USGS in practice considers this the sole responsibility of the author. An example of a clear incorporation of the requirement is given in OCWRM procedure QAP 6.2, Rev. 2, Attach. 9.4, Par. 2.10, which states, "Does the final document correctly incorporate technical input?"

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Block 12 Remedial Actions:

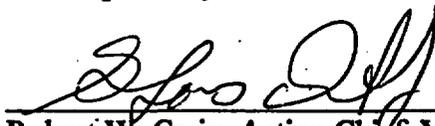
None

Block 18: Investigative Actions:

QMP-3.04 does recognize "correctness" as a review criteria however the USGS application of the term differs from the auditor's interpretation. QMP-3.04, R6, paragraph 5.2.2 and 5.2.2.1 state "The review of a manuscript shall, at a minimum, consider the following elements: Technical Correctness: Is the manuscript technically sound? Are all computations correct? Are assumptions reasonable and clearly stated? Are the interpretations of data supported by the data as presented or referenced in the manuscript?"

The USGS does not expect technical reviewers to check for transcription errors between the source data and it use in the interpretive report. However, the reviewer does have access to the source data upon request (see paragraph 5.2) if anything should look suspicious to him/her. The check for technical correctness as defined by the auditor does not have to be an independent review and is more appropriately the author's responsibility.

Block 21: Response by:



Robert W. Craig, Acting Chief, Yucca Mountain
Project Branch

10/26/95
Date

Block 22: Corrective Action Completion Due Date:

Not applicable

10/26/95 CRAIG TO SPENCE

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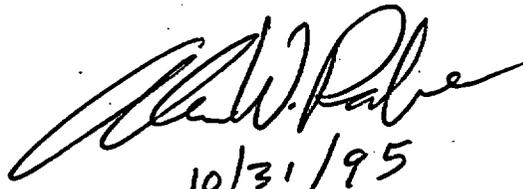
PR/DR CONTINUATION PAGE

Response Evaluation:

The USGS response correctly identifies that their procedures limit the extent of application of the word "correctness" in the way that a review needs to be performed. They further make it clear that a check of technical correctness does not have to be an independent review and is in their position appropriately the sole responsibility of the author.

This position does not meet the requirement of QARD 2.2.9. An independent review for correctness of quality affecting documents is required.

Based on the above this response is rejected.


10/31/95
Alan W. Rabe

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AMENDED RESPONSE YMQAD 95-D018

Block 12 A review for correctness of the subject report will be performed.

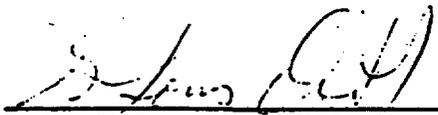
Block 14 1/8/96

Block 18 Investigative Actions:
QMP-3.04 does recognize "correctness" as a review criteria however the USGS application of the term differs from the auditor's interpretation. QMP-3.04, R6, paragraph 5.2.2 and 5.2.2.1 state "The review of a manuscript shall, at a minimum, consider the following elements:
Technical Correctness: Is the manuscript technically sound? Are the interpretations of data supported by the data as presented or referenced in the manuscript?"

"Correctness" as defined by the auditor is not addressed on a consistent basis within QMP-3.4 review process. However, the impact of these inconsistencies is believe to be minimal. For interpretative reports such as the subject report, the included data is essentially transcribed from other sources. As a result other editorial checks would be likely to catch any errors in a report's tables and figures.

Block 19 N/A

Block 20 Action to Preclude Recurrence:
USGS will modify QMP 3.04 to specifically include correct transcription of data in the criteria for technical correctness of the data as one of their acceptance criteria.

Block 21 Response by: 
R. W. Craig, Acting Chief
Yucca Mountain Project Branch

11/30/95
Date

Block 22 Corrective Action Completion Date: 1/16/96

11/29/95 CRAIG TO SPENCE



United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Box 25046 M.S. _____
Denver Federal Center
Denver, Colorado 80225

IN REPLY REFER TO:

MEMORANDUM

January 16, 1996

TO: Sherilyn Williams-Stroud
FROM: Don Sweetkind *Don*
RE: Review of PTn data packages and Letter Report.

Sherilyn -

I would appreciate your help in conducting a technical review in response to a finding by the DOE audit team regarding the data contained in my Letter Report on the PTn hydrogeologic unit.

Please verify the correspondence (or lack thereof) between the source data and the data presented in Appendixes 1-4 in the Letter Report.

The two data packages containing the source data for the report are as follows

"Fracture data from three natural exposures of the PTn section of Solitario Canyon" by Donald Sweetkind (DTN GS950508314222.003)

"Fracture data from outcrop exposures of the PTn section in Solitario Canyon" by Earl Verbeek (DTN GS950608314222.005)

The Letter Report that uses these source data is:

"Fracture character of the PTn hydrogeologic unit, Yucca Mountain, Nevada" by D.S. Sweetkind, E.R. Verbeek, J.K. Geslin, and T.C. Moyer (DTN GS950808314222.006)

Thank you for your help with this.

YMP-USGS DATA, MANUSCRIPT REVIEW/COMMENT RESOLUTION FORM

Title/Author and Draft Version: Letter Report: Fracture Character of the PTA Hydrogeologic Unit Page 1 of

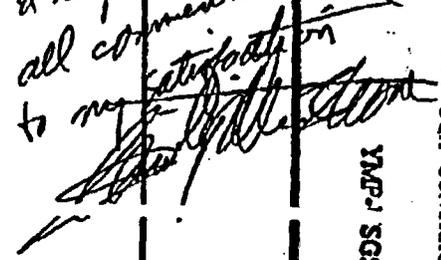
or Data Identification: Yucca Mountain, Nevada By: Don Sweetkind and others

Reviewer Name: Sharilyn Williams-Stroud Governing Procedure: QMP-3.04.R7

Reviewer Signature: _____

Data Review Interpretations of Data Manuscript Review YMPB Review QA Review

REVIEWER'S COMMENTS		RESPONSE	Reviewer Disposition for Mandatory Comments	
COMMENT NO. MANDATORY (M) NON-MANDATORY (NM)	PAGE NO.	COMMENTS	ACCEPT	REJECT
(m) 1	121	dip for FS-1F24 in 90° in admin rpt, but 88° in data pkg.		
(nm) 2	121	FS1F26 recorded as 2 distinct dips of a continuous fracture in data pkg, but as range of dips in admin. rpt.		
(nm) 3	128	Data pkg. distinguishes between Tpepv2 & Tpepv1, but admin. rpt. does not.		
(m) 4	156	Fracture with orientation Ostrike, Rslip		
(m) 5	-	The no. of observations identified for 650 for data observations is not significant		

The author has made all changes & responded to all comments to my satisfaction


All requirements have been met and the package is ready for further processing.
 * Rejected responses to mandatory comments require documentation of comment resolution by the Team Chief.


 Signature

1/16/96
 Date

YMP-USGS-QMP-3.04.R7
 Attachment 2
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02/09/96 14:17 3303 236 5046 USGS YMP OQA CONTRACTORS WWS/WS

YMP-USGS DATA, MANUSCRIPT REVIEW/COMMENT RESOLUTION FORM

Title/Author and Draft Version: _____ Page 1 of _____

or Data Identification: _____

Reviewer Name: _____ Governing Procedure: QMP-3.04.R7

Reviewer Signature: _____ Date: _____

Data Review
 Interpretations of Data
 Manuscript Review
 YMPB Review
 QA Review
 Data Transcription Check

REVIEWER'S COMMENTS			RESPONSE		Reviewer Disposition for Mandatory Comments	
COMMENT NO. MANDATORY (M) NON-MANDATORY (NM)	PAGE NO.	COMMENTS			ACCEPT	REJECT

All requirements have been met and the package is ready for further processing.
 * Rejected responses to mandatory comments require documentation of comment resolution by the Team Chief.

 Signature Date

02/08/98 14:15
 303 236 5046
 USGS IAP
 YMP-USGS- (MP-1.04, R7-M1)
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VERIFICATION OF COMPLETION

This DR has been verified to be closed based on the following information:

1. A review for correctness of the subject report was completed by Sherilyn Williams-Stroud on 1/16/96. This was documented on the standard Review/Comment Resolution form. This completes remedial actions required by this DR.
2. A procedure modification was approved on February 9, 1996 (QMP-3.04,R7-M1), which adds a Data Transcription Check to the review process. It includes a revised Review/Comment Resolution form which clearly documents the scope of the review.

The above actions each constitute a well executed response to correct the deficiency.



Alan W. Rabe 2/13/96