



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

**DEC 22 1994**

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

VERIFICATION OF CORRECTIVE ACTION OF CORRECTIVE ACTION REQUEST  
(CAR) YM-94-052 RESULTING FROM U.S. DEPARTMENT OF  
ENERGY/HEADQUARTERS QUALITY ASSURANCE DIVISION'S AUDIT HQ-94-02  
OF THE CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT  
AND OPERATING CONTRACTOR (SCPB: N/A)

The Yucca Mountain Quality Assurance Division staff has verified  
the corrective action to CAR YM-94-052 and determined the results  
to be unsatisfactory because of reasons stated in the enclosed  
CAR.

Your response, indicating the appropriate corrective action  
completion date, is required to be submitted to this office  
within ten working days of the date of this letter. Verification  
of completion of the required corrective action will be performed  
after the date provided.

If you have any questions, please contact either Robert B.  
Constable at 794-7945 or Robert L. Howard at 794-7820.

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-1478

Enclosure:  
CAR YM-94-052

YMP-5

9412290349 941222  
PDR WASTE PDR  
WM-11

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WM-11  
NH03 /

L. Dale Foust

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DEC 22 1994

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. Robertson, M&O/TRW, Vienna, VA

Richard Jiu, M&O/Duke, Las Vegas, NV

R. P. Ruth, M&O/Duke, Las Vegas, NV

D. G. Horton, OQA (RW-3) NV

R. M. Nelson, Jr., YMSCO, NV

cc w/o encl:

W. L. Belke, NRC, Las Vegas, NV

D. G. Sult, YMQAD/QATSS, Las Vegas, NV



**OFFICE OF CIVILIAN  
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U.S. DEPARTMENT OF ENERGY  
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**CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)**

**A. REMEDIAL ACTION:**

- Review the Design Verification Document review records for Design Package 1B for all discrepancies and make required corrections.

Responsible Individual: Matthew Gomez  
Completion Date: 10/15/94

- Determine any potential impacts to Design Package 1B based in the resolution of comments and make required corrections.

Responsible Individual: Matthew Gomez  
Completion Date: 10/15/94

**B. EXTENT OF DEFICIENCY:**

- Review ESF Surface Design Packages that required design verification for similar discrepancies.

Responsible Individual: Matthew Gomez  
Completion Date: 10/15/94

**C. ROOT CAUSE DETERMINATION:**

- Document Review Records (DRRs) were handled by several individuals during the review process. There was not an individual assigned to ensure that the documents were complete nor that they complied with procedural requirements. In addition, attention to specific procedural requirements by individuals completing the forms was not sufficient despite self-study training.

**D. CORRECTIVE ACTION TO PRECLUDE RECURRENCE:**

- QAP-3-2 has been revised. Rev 05 does not use QAP-3-1 for performing design verification by design review. The Document Review Record (DRR) has been replaced by the Design Verification Record (DVR). Paragraph 3.6 defines the Design Verification Leader as "The individual assigned to ensure that the design verification is completed in accordance with this procedure. Throughout the procedure the Design Verification leader is given responsibility to initiate/compile/develop/complete various elements of the required forms and documentation in accordance with procedural requirements, and is the focal point for coordinating these documents in the development stage.
- The discrepancies identified will be corrected by the reviewing ESF Surface Design. Extent of Deficiencies and evaluating impact of discrepancies on packages.

8/31/94 LV.MG.PGJ.8/94-234

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**CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)**

Amended Response

**A. REMEDIAL ACTION:**

1. Review the Document Review Records (DRRs) for Design Verification of Design Package 1B, for all discrepancies and make required corrections.

Responsible Individual: Matthew Gomez

Completion Date: 11/30/94

2. Determine any potential impacts to Design Package 1B and to any work done to 1B, based on the resolution of comments and make required corrections.

Responsible Individual: Matthew Gomez

Completion Date: 11/30/94

3. Continue investigation to determine the extent of the deficiency as follows:

- Review Design Review DRRs for Design Packages 1C, 2B & 2C on a sheet by sheet basis (100%) for any discrepancies. Determine any potential impacts based on the review, and resolve all resulting discrepancies. Amend CAR response.

Responsible Individual: Matthew Gomez

Completion Date: 11/30/94

- Since no other Design Packages conducted Design Verifications using this QAP-3-2, Rev 4, no further review related to Design Verification is required.

**B. EXTENT OF DEFICIENCY:**

The DRRs for the Package 1B Design Verification have been reviewed on a sheet by sheet basis to ensure that comments have been resolved and to determine what documentation discrepancies existed. A listing has been generated which includes the DRR comment number, responsible individual, and corrections to be made (Attachment I). It was confirmed that all comments were resolved. The resulting documentation discrepancies found were determined to have no impact on Package 1B nor any work done to 1B.

Neither the Vienna office nor the Charlotte office have conducted Design Verification, and therefore have not utilized QAP-3-2.

The Vienna office has reviewed a sampling of packages which performed reviews using QAP-3-1, Rev. 4. This review did not identify the existence of similar deficiencies with the records. Based upon this sampling, review packages for MRS-SRD Rev.1 and Trans SRD Rev. 1, we conclude that the extent of deficiency does not include Vienna.

The Charlotte office has instituted an administrative control by assigning a Conformance Verification Individual to ensure similar problems do not occur there. Because of this, a separate review at the Charlotte office was not conducted.

Similar investigations will be conducted for Design Review DRRs to further identify the extent of the deficiencies.

10/11/94 LV.MG.PG5. 10/4-267

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**CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)**

Amended Response (Continued)

**C. ROOT CAUSE DETERMINATION:**

1. The Design Verification process was governed by three processes: QAP-3-2, Rev 4; QAP-3-2, Rev 4, ATTACHMENT I; and QAP-3-1, Rev 4. Each of these processes had separate allocations of responsibilities and activities. For Design Package 1B, assignments were made for a Verification Chairperson and a Design Review Secretary per QAP-3-2 and QAP-3-2 ATTACHMENT I respectively. Apparently, there was no assignment made for a Lead Document Preparer (LDP) per QAP-3-1, Rev 4. The Design Review Secretary used QAP-3-1 only as a source of producing DRRs. QAP-3-1 Section 5.4.3 assigns the LDP the activity and responsibility of assuring that the Design Review Records (DRRs) are complete and that the required signatures have been obtained. Neither the Verification Chairperson nor the Design Review Secretary followed QAP-3-1 for completing the forms. Root Cause: The Design Verification was governed by two procedures, and three separate processes. QAP-3-2 was followed, QAP-3-1 was not. Therefore, no LDP assigned and there was no individual directly tracking the status of the DRRs.
2. A contributing cause was that attention to specific procedural requirements by individuals completing the forms was not sufficient despite self-study training.

**D. CORRECTIVE ACTION TO PRECLUDE RECURRENCE:**

1. The current Design Verification Procedure (QAP-3-2, Rev 5) provides clear responsibility to the Lead Document Preparer to assure that the Design Review Records (DRRs) are complete and that the required signatures have been obtained. The process is now governed by a single procedure, with all activities and responsibilities clearly defined. The Design Verification Leader has the activity of and responsibility for ensuring that the comment sheets (DVRs) are complete and that the required signatures have been obtained. No corrective action related to QAP-3-1 is required.
2. Training briefings were held for all M&O personnel who perform work to QAP-3-1, Rev.5, and QAP-3-2, Rev.5. The training was held in May and June of 1994 and covered the procedural requirements and a practice session for completing the required forms.

No further corrective actions are considered necessary. All remedial actions will be completed by 11/30/94.

PACKAGE 1B DESIGN VERIFICATION  
DRR CORRECTIONS  
CIVIL

<u>Comment #</u>	<u>Req'd By</u>	<u>Correction</u>
0-005	R. Clark	Strike-out, initial & date "disagree" comment
0-008	R. Clark	Strike-out, initial & date "disagree" comment
0-014	R. Clark	Strike-out, initial & date "disagree" comment
0-015	R. Clark	Strike-out, initial & date "disagree" comment
0-016	R. Clark	Strike-out, initial & date "disagree" comment
0-021	R. Clark	Strike-out, initial & date "disagree" comment
0-023	R. Clark	Strike-out, initial & date "disagree" comment
0-024	R. Clark	Strike-out, initial & date "disagree" comment
0-026	R. Clark	Strike-out, initial & date "disagree" comment
0-029	R. Clark	Strike-out, initial & date "disagree" comment
<del>0-030</del>	<del>R. Clark</del>	<del>Strike-out, initial &amp; date "disagree" comment</del> MD 9/30/94
0-031	R. Clark	Strike-out, initial & date "disagree" comment
0-033	A. Pakzad	Date strike-out over "Rejected"
0-034	R. Clark A. Pakzad	Strike-out, initial & date "disagree" comment Strike-out, initial & date "Rejected". Accept & initial final response.
0-038	A. Pakzad	Accept & initial
0-040	A. Pakzad	Accept & initial
0-041	A. Pakzad	Sign & date at bottom
0-042	A. Pakzad	Sign & date at bottom
0-043	A. Pakzad	Accept & initial

PACKAGE 1B DESIGN VERIFICATION  
DRR CORRECTIONS  
CIVIL

<u>Comment #</u>	<u>Req'd By</u>	<u>Correction</u>
0-044	A. Pakzad	Accept & initial
0-045	A. Pakzad	Accept & initial
0-046	A. Pakzad	Accept & initial
0-048	A. Pakzad	Accept & initial
0-049	A. Pakzad	Accept & initial
0-050	A. Pakzad	Accept & initial
0-057	A. Pakzad	Sign & date at bottom
0-063	A. Pakzad R. Clark	Sign & date at bottom. Accept & initial Sign & date at bottom
0-071	A. Pakzad	Accept & initial
0-084	A. Pakzad	Accept & initial
0-087	A. Pakzad	Accept & initial
0-088	A. Pakzad	Accept & initial
0-089	A. Pakzad	Accept & initial
0-090	A. Pakzad	Accept & initial
0-091	A. Pakzad	Accept & initial
0-092	A. Pakzad	Accept & initial
0-093	A. Pakzad	Accept & initial
0-094	A. Pakzad	Accept & initial
0-095	A. Pakzad	Accept & initial
0-096	A. Pakzad	Accept & initial



PACKAGE 1B DESIGN VERIFICATION  
DRR CORRECTIONS  
CIVIL

<u>Comment #</u>	<u>Req'd By</u>	<u>Correction</u>
0-097	A. Pakzad	Accept & initial
0-098	A. Pakzad	Accept & initial
0-099	A. Pakzad	Accept & initial
0-100	A. Pakzad	Accept & initial
0-101	A. Pakzad	Sign & date at bottom
0-102	A. Pakzad	Accept & initial
0-103	A. Pakzad	Accept & initial
0-104	A. Pakzad	Sign & date at bottom
0-105	A. Pakzad	Accept & initial

PACKAGE 1B DESIGN VERIFICATION  
DRR CORRECTIONS  
STRUCTURAL

<u>Comment #</u>	<u>Req'd By</u>	<u>Correction</u>
1-007	L. Engwall	Sign & date at bottom

PACKAGE 1B DESIGN VERIFICATION  
DRR CORRECTIONS  
ARCHITECTURAL

<u>Comment #</u>	<u>Req'd By</u>	<u>Correction</u>
2-005	D. Lumanlan	Sign & date at bottom
2-006	D. Lumanlan	Sign & date at bottom
2-007	D. Lumanlan	Sign & date at bottom
2-011	T. Sauer	Date along side initials
2-013	F. White	Provide response "See attached response page". Sign & date at bottom

PACKAGE 1B DESIGN VERIFICATION  
DRR CORRECTIONS  
ELECTRICAL

<u>Comment #</u>	<u>Req'd By</u>	<u>Correction</u>
4-004	W. French D. Barreres	Provide response. Sign & date at bottom. Initial acceptance block
4-005	W. French D. Barreres	Provide response. Sign & date at bottom. Initial acceptance block

PACKAGE 1B DESIGN VERIFICATION  
DRR CORRECTIONS  
MECHANICAL

<u>Comment #</u>	<u>Req'd By</u>	<u>Correction</u>
5-062	N.Rounavaara	Sign & date at bottom
5-063	N.Rounavaara	Sign & date at bottom
5-064	N.Rounavaara	Sign & date at bottom

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CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

Verification of Corrective Action for CAR YM-94-052

YMQAD staff has partially verified corrective action to CAR YM-94-052 and has determined the results to be unsatisfactory. Based on a sample of Design Verification Records for Package 1B, Staff could not verify corrective action on CAR YM-94-052 for the following reasons:

1. Discrepancy 3 in the CAR stated that some DRRs did not have Accept/Reject indication by the reviewer. Discrepancy 6 stated that some DRRs were missing "Reviewed By" signatures. One DRR, reviewed still did not have the Accept/Reject status and "Reviewed by" signature documented by the reviewer.
2. Discrepancy 5 in the CAR stated that DRRs did not indicate that whether or not the document is quality affecting. None of the DRRs reviewed had the QA Class identified in the upper right hand corner. Additionally, five DRRs sampled did not have the QA status checked in the appropriate block. (Discrepancy 5)

These deficiencies indicate that all remedial action is not complete, and that the M&O has not fully captured the extent of the deficiency identified in the CAR.

Note that YMQAD did not try to verify all corrective action at this time.



Robert L. Howard, QAR

December 19 1994  
Date