



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

QA: L

SEP 2 1994

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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 CORRECTIVE ACTION REQUEST (CAR)
YM-94-064 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE
DIVISION (YMQAD) AUDIT YMP-94-01 OF CIVILIAN RADIOACTIVE WASTE
MANAGEMENT SYSTEM MANAGEMENT AND OPERATING CONTRACTOR
(SCPB: N/A)

The YMQAD staff has evaluated the response to CAR YM-94-064. 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 Kenneth O. Gilkerson at 794-7738.

R. E. Spence

Richard E. Spence, Acting Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-4942

Enclosure:
CAR YM-94-064

cc w/encl:
T. A. Wood, HQ (RW-14) FORS
R. L. Johnson, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
R. L. Robertson, M&O/TRW, Vienna, VA
R. P. Ruth, M&O/TRW, Las Vegas, NV
Richard Jiu, M&O/Duke, Las Vegas, NV

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

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

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CORRECTIVE ACTION REQUEST

1 Controlling Document OCRWM QARD, DOE/RW-0333P, Revision 01, Section 2.0		2 Related Report No. YMP-94-01	
3 Responsible Organization M&O		4 Discussed With K. Herold/B. Saunders/J. Naff/J. A'rth	
5 Requirement: QARD, Section 2.0, Paragraph 2.2.3 requires that an activity shall take on the same level of importance as the item to which it pertains.			
6 Adverse Condition: Drawing for the TS North Ramp steel Sets and Lagging (BAEAB000-01717-2100-41101) details in the notes section that field drilled holes in the W8x31 steel sets and the associated activities for utility bracket attachments are non-QA controlled activities. By indicating these activities as non-QA, there was no application of quality requirements (AISC) nor any required inspection controls even though a Q-listed item was being impacted.			
9 Does a Significant Condition Adverse to Quality exist? Yes <u>X</u> No <u> </u> If Yes, Check One: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D <input type="checkbox"/> E		10 Does a stop work condition exist? Yes <u> </u> No <u>X</u> ; If Yes - Attach copy of SWO If Yes, Check One: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	
3 Response Due Date: 20 Working Days From Issuance			
11 Required Actions: <input checked="" type="checkbox"/> Remedial <input checked="" type="checkbox"/> Extent of Deficiency <input checked="" type="checkbox"/> Preclude Recurrence <input checked="" type="checkbox"/> Root Cause Determination			
12 Recommended Actions: 1) Determine if the described activity is the only inappropriate application of quality requirements. Consider activities at both Vienna and Las Vegas locations. (Continued on next page)			
7 Initiator Richard G. Peck <i>[Signature]</i>		14 Issuance Approved by: QADD <i>[Signature]</i> Date <u>8/5/94</u>	
15 Response Accepted QAR <i>[Signature]</i> Date <u>8/30/94</u>		16 Response Accepted QADD <i>[Signature]</i> Date <u>9/2/94</u>	
17 Amended Response Accepted QAR _____ Date _____		18 Amended Response Accepted QADD _____ Date _____	
19 Corrective Actions Verified QAR _____ Date _____		20 Closure Approved by: QADD _____ Date _____	

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CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

13 Recommended Action(s) (continued)

- 2) Determine if any other activities (i.e., welding) fall into the same category.
- 3) Determine if consideration has been taken towards the potential weakening of the W8x31 flange through the drilling process.
- 4) Determine how this noncompliance was missed in the analysis of activities.
- 5) M&O should establish a written position regarding interfaces between "Q" and "Non-Q" areas.

Remedial Action

- A/E will revise drawings BABEAB000-01717-2100-41101, 41111, 41121, 41130, 41140 (North Ramp steel sets & lagging and details of the non-Q attachments) to include a note referencing specification no. BABEAB000-01717-6300-02341 for addressing the "Q" controls for locating, sizing and drilling the bolt holes for the non-Q attachments.

Responsible person: Robert Saunders

Completion Date: 9-30-94 (Anticipated Release of 2C)

Extent of Deficiency

- Investigative action indicates that the deficiency identified by this CAR is limited to the steel set drawings for package 2C. There are no other ground support members that will be used for suspending non-Q items.
- Although the steel sets are welded during shop fabrication the design documents clearly prohibit subsequent field welding on the sets without A/E approval, and require that the bolt holes for the attachments be field drilled. A/E approval for field welding will be subject to interface control and with supporting analyses. Welding specifications and procedures would have to be developed. However, to ensure adequate controls for sizing, locating, and drilling the bolt holes the drawings will be revised to include "Q" controls for these activities.
- The structural designers do not consider that the bolt holes as required by the design documents detract from the structural integrity of the steel set member.
- The actual bolting of the non-Q attachments will be non-Q. If the future design includes Q attachments the bolting will be identified to include Q controls.
- There is currently no design activity in Vienna.

Root Cause Analysis

- The noncompliance was missed because of a lack of adequate guidance and understanding on the part of the designers for controlling the interfaces between "Q" and non "Q" items. Initially the A/E did not consider that bolt holes in the steel sets

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for non-Q attachments were subject to "Q" controls as the bolt holes (as designed) do not detract from the structural integrity of the member, and that the drawing details provided adequate instructions. However, to eliminate the potential for drilling unnecessary holes, burning holes by cutting torch, or drilling holes in the wrong locations, "Q" controls will be added for sizing, locating, and drilling the bolt holes for non-Q attachments. Additional investigation of the deficiency by discussion with the designers has provided a level of confidence that no similar conditions exist. Human error, and an inadvertent oversight by the designer has been determined to be the root cause. QARD requirements cited within the CAR are not clearly obvious within procedures.

Action to Preclude Recurrence

- Revise NLP-3-18 to specifically include the QARD requirement cited in the CAR, and to train designers on the revised procedure.
- The M&O position regarding interfaces between Q and non-Q areas is to follow the QARD requirements.

Responsible person: Robert Saunders

Completion Date: 10-30-94

 8/17/94