



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

WBS 1.2.11  
QA: N/A

**NOV 0 4 1993**

Robert F. Pritchett  
Technical Project Officer  
for Yucca Mountain  
Site Characterization Project  
Reynolds Electrical & Engineering Co., Inc.  
P.O. Box 98521  
Las Vegas, NV 89193-8521

VERIFICATION OF CORRECTIVE ACTION REQUEST (CAR) YM-93-061 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) AUDIT YMP-93-12 OF REYNOLDS ELECTRICAL & ENGINEERING CO., INC. (REECO) AND EVALUATION OF AMENDED RESPONSE AND REQUEST FOR EXTENSION DATED OCTOBER 19, 1993, FROM REECO (REECO LETTER 580-01-38) (SCP: N/A)

The YMQAD staff has verified the corrective action to CAR YM-93-061 and determined the verification results to be unsatisfactory.

The response stated that the failure of the shotcrete test panels tested on April 23, 1993 and May 10, 1993 is addressed by Project Nonconformance Report (NCR) 93-014. Furthermore, a full review of all shotcrete records with 28-day results would be conducted and completed by September 15, 1993. Contrary to this response, the cited nonconformance report does not address test panels which failed, and the review of all shotcrete records with 28-day results had not been completed as of October 12, 1993.

All other corrective action described in the accepted response was found to be satisfactory. In addition, REECO amended response and request for extension of corrective action completion date (REECO letter 580-01-038 dated October 19, 1993) has been received and approved.

Based on the above verification results and evaluation of the amended response received, an extension of corrective action completion to November 19, 1993, is granted. Verification of completion of corrective actions will be performed after the effective dates provided.

If you have any questions, please contact Robert B. Constable at (702) 794-7945.

*R.E. Spence*

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-447

Enclosure:  
CAR YM-93-061

100038

YMP-5

9311120206 931104  
PDR WASTE  
WM-11 PDR

*Add: Ken Hooker*  
*NH0311*  
*102.7*  
*WM-11*

Robert F. Pritchett

-2-

cc w/encl:

K. R. Hooks, NRC, Washington, DC  
S. W. Zimmerman, NWPO, Carson City, NV  
W. J. Glasser, REEC Co, Las Vegas, NV

cc w/o encl:

J. W. Gilray, NRC, Las Vegas, NV  
N. J. Brogan, YMQAD/QATSS, Las Vegas, NV

ORIGINAL  
THIS IS A RED STAMP

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

8 CAR NO.: YM-93-061  
DATE: 07/02/93  
SHEET: 1 OF 1  
QA

CORRECTIVE ACTION REQUEST

|  |  |   |  |
|--|--|---|--|
| 1 Controlling Document<br>Specification YMP-025-1-SP09   |  | 2 Related Report No.<br>YMP-93-12   |  |
| 3 Responsible Organization<br>REECo QC   |  | 4 Discussed With<br>P. Bryant   |  |
| 5 Requirement:<br>Specification YMP-025-1-SP09, Section 03361, "Shotcrete," Revision 1, Paragraph 3.10.B.3.d states in part, "When shotcrete does not meet the specified requirements and was taken from a test panel, additional samples shall be taken from the area of work in place represented by the test panel and tested for conformance to the specifications." |  |   |  |
| 6 Adverse Condition:<br>Contrary to the above, Field Quality Control did not notify construction to take additional samples when two test panel 28-day compressive strength tests failed.<br><br>Refer to test results for shotcrete placed on 4/23/93 and on 5/10/93.   |  |   |  |
| 9 Does a significant condition adverse to quality exist? Yes ___ No <u>X</u><br>If Yes, Circle One: A B C  |  | 10 Does a stop work condition exist? Yes ___ No <u>X</u> ; If Yes - Attach copy of SWO<br>If Yes, Circle One: A B C D |  |
|  |  | 11 Response Due Date:<br>20 Working Days from Issuance  |  |
| 12 Required Actions: <input checked="" type="checkbox"/> Remedial <input type="checkbox"/> Extent of Deficiency <input checked="" type="checkbox"/> Preclude Recurrence <input checked="" type="checkbox"/> Root Cause Determination   |  |   |  |
| 13 Recommended Actions:<br>1) Ensure the two failed test results are appropriately documented.   |  |   |  |
| 7 Initiator<br>Gerard Heaney <i>Gerard Heaney</i> Date <u>7-1-93</u>   |  | 14 Issuance Approved by: <i>[Signature]</i> QADD <i>[Signature]</i> Date <u>07-07-93</u>                              |  |
| 15 Response Accepted<br>QAR <i>Gerard Heaney</i> Date <u>8-10-93</u>   |  | 16 Response Accepted<br>QADD <i>[Signature]</i> Date <u>8/17/93</u>   |  |
| 17 Amended Response Accepted<br>QAR _____ Date _____   |  | 18 Amended Response Accepted<br>QADD _____ Date _____   |  |
| 19 Corrective Actions Verified<br>QAR _____ Date _____   |  | 20 Closure Approved by:<br>QADD _____ Date _____  |  |

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QA

CORRECTIVE ACTION REQUEST (Continuation Page)

CORRECTIVE ACTION RESPONSE for CAR # YM-93-061

A. Remedial Action:

REECo YMP Quality Control (QC) Section has investigated the two noted panel failures and has determined that the failure on April 23, 1993, is included in the area addressed by Project Nonconformance Report (NCR) Number 93-014. Further evaluation indicates that a full review of all shotcrete records with 28 day test results is needed. When this review is completed, all failing panels will be documented on a Project NCR for Architect/Engineer disposition.

Responsible Individual: E. P. Bryant  
Estimated completion date: September 15, 1993

C. Root Cause Determination:

Positive controls to ensure appropriate actions for test failures were not in place.

D. Corrective Action to Preclude Recurrence:

As a positive control, a log system has been implemented to ensure timely receipt of test data and to clearly indicate test status. The test results and any action required will be documented on the appropriate Inspection Report.

Responsible Individual: E. P. Bryant  
Estimated completion date: September 15, 1993

Response Approved:

RT Pritchett

Date:

8/4/93

Ltr dtd 8/4/93 - 580-01-587

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CORRECTIVE ACTION REQUEST (Continuation Page)

CORRECTIVE ACTION RESPONSE FOR CAR # YM-93-061

Supplemental CAR response on Remedial Actions:

During a recent review of documentation for inclusion in the final Design Package 1A records package, REECO identified additional information concerning the status of shotcrete test panels and results. REECO Quality Control Section had originally determined that the panel identified as occurring on April 23, 1993, was included in the area addressed by Project Nonconformance Report (NCR) 93-014. Further evaluation showed that, although the failure apparently occurred in the first 33 feet of the tunnel, the date of failure was after the time frame covered by the NCR.

Based upon this new information, it has been determined that additional evaluation is necessary to ensure that required test panels have been taken, test reports have been received, and test results (including test results for placed shotcrete on April 23, 1993, and May 10, 1993) have been adequately reviewed for inclusion on Project NCR(s), as necessary.

We, therefore, request an extension until November 19, 1993, to complete the additional evaluation and initiate the necessary NCR(s).

Responsible Individual: E. P. Bryant  
Estimated completion date: November 19, 1993

Response Approved:       

*R. J. Pritchett*

Date: 10-20-93

*Ltr dtd 10/19/93 - 580-01-038*