



**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

**FEB 24 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

ISSUANCE OF CORRECTIVE ACTION REQUEST (CAR) YM-93-033 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) AUDIT YMP-93-06 OF REYNOLDS ELECTRICAL & ENGINEERING CO., INC.

Enclosed is CAR YM-93-033 generated as a result of YMQAD Audit YMP-93-06.

Please identify the corrective action to be taken and implemented to correct the deficiency. A CAR Continuation Sheet and instructions for completion have been provided. Send the original of your response to Nita J. Brogan, Science Applications International Corporation, Las Vegas, Nevada. Response to the CAR is due 20 working days from the date of this letter. Any extension to the due date must be requested in writing with appropriate justification prior to that date.

If you have any questions, please contact either Robert B. Constable at 794-7945 or John S. Martin at 794-7881.

Richard E. Spence, Director  
 Yucca Mountain Quality Assurance Division

YMQAD:RBC-2688

Enclosure:  
 CAR YM-93-033

cc w/encl:

- ~~D. G. Horton, HQ (RW-3) FORS~~
- ~~K. R. Hooks, NRC, Washington, DC~~
- S. W. Zimmerman, NWPO, Carson City, NV
- T. L. Badredine, M&O/TRW, Las Vegas, NV
- W. J. Glasser, REECo, Las Vegas, NV
- R. L. Maudlin, MACTEC, Las Vegas, NV
- C. J. Henkel, EEI, Las Vegas, NV
- C. P. Gertz, YMP, NV
- A. V. Gil, YMP, NV
- B. J. Verna, YMP, NV

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 PDR WASTE PDR  
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*ADD: Ken Hooks*

*Chr. Eel*  
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Robert F. Pritchett

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FEB 24 1993

cc w/o encl:

J. W. Gilray, NRC, Las Vegas, NV

N. J. Brogan, SAIC, Las Vegas, NV

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

8 CAR NO.: YM-93-033  
DATE: 2/12/93  
SHEET: 1 OF 2  
QA

**CORRECTIVE ACTION REQUEST**

1 Controlling Document REECO QAPP		2 Related Report No. Audit YMP-93-06	
3 Responsible Organization REECO		4 Discussed With R. Pritchett & W. Glasser	
5 Requirement:  Reynolds Electric & Engineering Co. (REECO), Quality Assurance Program Plan (QAPP), Revision 8, Section V, Paragraph 1.0 states in part: "Activities affecting quality shall be prescribed by and performed in accordance with documented instructions, procedures, plans or drawings, of a type appropriate to the circumstances. These documents shall also include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished."			
6 Adverse Condition:  In reviewing REECO's Physical Standards and Calibration Laboratory (PSCL) calibration reports, numerous instances were identified in which; (1) calibrations were not performed in accordance with procedures, and (2) procedures were not revised or new procedures generated when the ones in effect were not appropriate to the work accomplished.  EXAMPLES:  Procedure MQA-IP-CP-PRESS-1, Revision 2, Paragraph 6.3.3, requires that during calibration the instrument (Pressure Gauge) be checked at seven checkpoints: five increasing pressures at 20, 40, 50, 80 and 100 percent of full scale, and two decreasing pressures at approximately 70 and 30 percent. In review of calibration report dated 1/22/92, for instrument No. Y 10065, it was found that the decreasing pressures were not verified. In addition, in review of calibration report dated 6/3/92, for			
9 Does a significant condition adverse to quality exist? Yes <u>X</u> No ___ If Yes, Circle One: A <u>(B)</u> C		10 Does a stop work condition exist? Yes ___ No <u>X</u> ; If Yes - Attach copy of SWO If Yes, Circle One: A B C D	
11 Response Due Date: 20 days from issuance			
12 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			
13 Recommended Actions: 1) Identify the remedial actions to be taken to correct the deficiencies noted in Block 6.  2) Investigation:  a. Review calibration reports to determine like instances and			
7 Initiator <i>J. M. S. MARSH</i> Date <u>2-19-93</u>		14 Issuance Approved by: <i>[Signature]</i> QADD Date <u>2/23/93</u>	
15 Response Accepted QAR Date		16 Response Accepted QADD Date	
17 Amended Response Accepted QAR Date		18 Amended Response Accepted QADD Date	
19 Corrective Actions Verified QAR Date		20 Closure Approved by: QADD Date	

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

8 CAR NO.: YM-93-033  
DATE: 2/12/93  
SHEET: 2 OF 2  
QA

**CORRECTIVE ACTION REQUEST (Continuation Page)**

**6 Adverse Condition (continued)**

instrument No. Y 10249, it was found that the instrument was not tested to full scale nor was it tested with decreasing pressures.

In reviewing calibration report dated 2/4/91, for PSCL Lab Standard No. 102, (Scanning Digital Thermocouple) it was noted that the calibration was performed in accordance with procedure MQA-IP-CP-TEMP-4, Revision 1. In reviewing the procedure it was found that the procedure did not describe the calibration of the digital thermometer via a volt meter which is required for calibration of the standard referenced.

In addition to the above, numerous deficiencies were noted which indicate an overall lack of attention to detail and are:

Calibration report dated 3/14/92, Instrument No. Y 10106, (Chart Recorder) indicates that PSCL Lab Standard No. 40 was utilized during calibration. In review of documentation, it was found that during the date that the calibration was performed, Standard No. 40 did not have a calibration record to indicate that it had a valid calibration.

Calibration report dated 7/2/92, Instrument No. Y 10320, (Balance) references the incorrect procedure revision. The revision noted is Revision 2, when the revision in effect at the time of calibration was Revision 1.

Calibration report dated 12/14/92, Instrument No. Y 20000, (Three Channel Recorder) indicates within the item description that the instrument has a temperature range of 0-150 degrees Fahrenheit. However, in examination of the calibration information it was found that the instrument was calibrated to 300 degrees Fahrenheit. In addition, the calibration report indicated that the allowable tolerance for the instrument to be +/-5% of the full scale. In examination of the procedure MQA-IP-CP-REC-1, Revision 1, it was found that the procedure called for a tolerance of +/-2% of the full scale.

Calibration report dated 11/12/91, references procedure MQA-IP-CP-TEMP-4, Revision 2. In review of referenced procedure, paragraph 6.3.8 states that calibration stickers would be applied in accordance with MQA-IP-CP-GEN-1, Revision 0, Paragraph 6.6. However, no reference is made within Paragraph 6.6 as to how calibration stickers would be applied.

**DISCUSSION:**

During the course of the audit REECO issued Memorandum 93-001343, which details actions to be accomplished and documented prior to performing calibrations or releasing instrumentation which has been calibrated to the user organizations. Based upon the issuance of this Memorandum, discussions with REECO and separate discussions with the YMQAD Director, it was determined that a Stop Work Order was not warranted at this time.

**13 Recommended Action(s) (continued)**

- provide results thereof.
  - b. Determine impact and report results (i.e., Is calibration voided since procedures referenced do not describe calibration?)
  - c. Generate NCRs if required and notify users.
  - d. Identify measures to correct these deficiencies.
- 3) Identify Root Cause of the deficiencies.
- 4) Identify method to preclude recurrence.

## Format for Corrective Action Response

The CAR response shall include the following information:

1. Corrective Action Response for CAR # \_\_\_\_\_
  - A. Remedial Action - Actions taken to correct specific deficiencies noted.  
(Required for all CARs)
  - B. Investigative Action - Actions taken to determine the extent of the condition.  
(Required for all significant conditions adverse to quality or any Condition Adverse to Quality if requested by OQA)
  - C. Root Cause Determination - Identification of the root cause of the condition.  
(Required for all significant conditions adverse to quality or any Condition Adverse to Quality if requested by OQA)
  - D. Corrective Action to Preclude Recurrence - Actions taken to address the root cause and preclude recurrence of the condition.  
(Required for all significant conditions adverse to quality or any Condition Adverse to Quality if requested by OQA)
2. For each action above, identify the name of the individual assigned responsibility for completion and the anticipated (or actual, if complete) completion date.
3. Response Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
Responsible Manager

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

6 CAR NO. \_\_\_\_\_  
DATE: \_\_\_\_\_  
PAGE: \_\_\_\_\_ OF \_\_\_\_\_  
QA

**CORRECTIVE ACTION REQUEST (Continuation Page)**