



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

SEP 16 1996

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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

**VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF DEFICIENCY REPORT
(DR) YM-96-D-007 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE
DIVISION'S (YMQAD) SURVEILLANCE YMP-SR-95-050 OF THE CIVILIAN
RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT AND OPERATING
CONTRACTOR**

The YMQAD staff has verified the corrective action to DR YM-96-D-007 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) 794-5580 or Patout H. Cotter at (702) 794-1332.

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-2609

Enclosure:
DR YM-96-D-007

cc w/encl:

T. A. Wood, DOE/HQ (RW-14) FORS
J. G. Spraul, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
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cc w/o encl:

W. L. Belke, NRC, Las Vegas, NV
P. H. Cotter, YMQAD/QATSS, Las Vegas, NV
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D. G. Horton, DOE/OQA, Las Vegas, NV

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

Performance Report
 Deficiency Report
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PERFORMANCE/DEFICIENCY REPORT

1 Controlling Document:
Specification BABEAB000-01717-6300-03362, Rev. 01 (Spec. 03362) Dry Process

2 Related Report No.
YMP-SR-95-050

3 Responsible Organization:
M&O Subsurface Design

4 Discussed With:
O. J. Gilstrap, J. Kieffer

5 Requirement/Measurement Criteria:
1) Spec. 03362 and Spec. 03363 (both) paragraph 3.14 stated (prior to revision): "The Constructor shall maintain as QA records, documentation of personnel training and certification of nozzelmen. The training and certification shall meet the minimum recommended guidelines of ACI 506.3R."
2) ACI 506.3R page 1 states: "ACI Committee Reports, Guides, Standard Practices, and Commentaries are intended for guidance in designing, planning, executing, or inspecting construction and in preparing specifications. Reference to these documents shall not be made in the Project Documents. If items found in these documents are desired to be part of the Project Documents, they should be phrased in mandatory language and incorporated into the Project Documents."

6 Description of Condition:
There are two conditions which are in violation of the above cited requirements:
1) The M&O ESF Subsurface Design issued ECR No. 95-001 reducing the size of the test panel for certification to 18 by 18 in., (as allowed by ASTM C-1140) which is in violation of ACI 506.3R-91 which requires a test panel or area which is a minimum of 4ft. (1.2m) square. Furthermore, ACI 506.3R does not reference ASTM C-1140 in its list of reference documents.
2) The M&O ESF Design Group referenced ACI 506.3R as a mandatory item of compliance in Specs. 03362 and 03363 without extracting the specific items from ACI 506.3R and incorporating these specific items directly into the specs. The reference to ACI 506.3R as made left the clause open to subjective interpretation.

7 Initiator
Raul A. Hinojosa *Raul A. Hinojosa* Date 10/13/95

9 QA Review
Raul A. Hinojosa *Raul A. Hinojosa* Date 10/13/95

10 Response Due Date
20 working days from issuance

11 QA Assurance Approval
Robert B. Cowdell to Date 10-23-95
QAR (PRI) A O QAM (DR)

12 Remedial Actions:
As recommended in Block 17, both specifications will be revised to provide explicit mandatory direction regarding training and certification requirements for nozzle men, including the test panel size requirement. Both specifications are currently under revision, and changes from this DR will be incorporated.

13 Remedial Action Response By:
[Signature] Date 11/21/95

14 Remedial Action Due Date
FEB. 16, 1996 Date

15 Remedial Action Response Acceptance
QAR *[Signature]* Date 11/22/95

16 PR Verification/Closure
QAR N/A Date

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DEFICIENCY REPORT

17 Recommended Actions:

Revise both specifications to incorporate the items out of ACI 506.3R that are required to perform the shotcrete application process in accordance with project requirements and in such a manner as to assure that there is no ambiguity on what is a specification requirement.

18 Investigative Actions:

PLEASE SEE CONTINUATION PAGE

19 Root Cause Determination:

PLEASE SEE CONTINUATION PAGE

20 Action to Preclude Recurrence:

PLEASE SEE CONTINUATION PAGE

21 Response by: <i>[Signature]</i> Date 11/20/95	22 Corrective Action Completion Due Date: FEB. 16, 1996
23 Response Accepted QAR <i>[Signature]</i> Date 4/22/95	24 Response Accepted AOQAM <i>[Signature]</i> Date 11-29-95
25 Amended Response Accepted QAR Date	26 Amended Response Accepted AOQAM Date
27 Corrective Actions Verified QAR <i>[Signature]</i> Date 9/6/96	28 Closure Approved by: AOQAM <i>[Signature]</i> Date 9/13/96

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Block No. 1 (continued)

shotcrete

Specification BABEAB000-01717-6300-03363, Rev. 01 (Spec. 03363) Wet Process Shotcrete

American Concrete Institute Publication No. ACI 506.3R-91 (ACI 506.3R) Guide to Certification of Shotcrete Nozzlemen

18 Investigative Actions.

ACI 506.3R, ASTM C 1140, ESF Design analysis BABEE0000-01717-0200-00002 REV 00 and the wording in paragraph 3.14 of each of the subject specifications, both before and after issuance of ECR No. E95-0001, has been reexamined. It is agreed that the direction was somewhat ambiguous and needs clarification as part of remedial action. However, based upon the investigation, the A/E protests the cited condition 1, and the assessment that the adverse condition is a deficiency.

The premise of Condition 1 assumes that ACI 506.3R is the Controlling Document in the design. However there are two recognized national standards, American Society for Testing Materials (ASTM) and American concrete institute (ACI), which recommend differing standard practices for panel sizes. The A/E exercised engineering judgement on selection of panel size considering both standards, in the ESF Design analysis BABEE0000-01717-0200-00002 REV 00 in Section 7.15, where ASTM standard was judged to be satisfactory. That judgement conforms to the QARD Design Process (3.2.2.D). Therefore, stating "ASTM C 1140...which is in violation of ACI 506.3R-91" as an adverse condition is incorrect.

Root Cause determination and action to preclude recurrence have been determined to be not required.

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VERIFICATION STATEMENT FOR DR YM-96-D-007

New specifications, BABEE000-01717-6300-03362, Rev 00 and BABEE000-01717-6300-03363, issued on 8/19/96, increased the size of the nozzle operators test panel to agree with the revised ASTM C1140 requirements of 4 sq-ft. This DR is now considered closed.



7/6/96

P. H. Cotter

Date