



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 22 1994

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for Yucca Mountain
Site Characterization Project
TRW Environmental Safety Systems, Inc.
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101 Convention Center Drive
Las Vegas, NV 89109

PARTIAL VERIFICATION OF CORRECTIVE ACTION FOR CORRECTIVE ACTION
REQUEST (CAR) YM-94-075 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 partially verified the corrective action to
CAR YM-94-075 and determined the results to be satisfactory for
completion of remedial actions associated with the 2C "Early
Release" package. However, the CAR will not be closed until all
corrective actions are complete. Verification of completion of
the remaining corrective actions will be performed after the
effective dates provided.

If you have any questions, please contact either Robert B.
Constable at 794-7945 or John F. Pelletier at 794-7538.

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

YMQAD:RBC-5159

Enclosure:
CAR YM-94-075

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

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CORRECTIVE ACTION REQUEST

1 Controlling Document OCRM QARD DOE/RW-0333P, Revision 01		2 Related Report No. YMP-94-01	
3 Responsible Organization M&O		4 Discussed With P. Hastings/R. Saunders	
5 Requirement: QARD DOE/RW-0333P, Section 3, "Design Control" states that design documents shall be adequate to support design, fabrication, construction, and operation; and also, that appropriate standards shall be identified and documented. (Continued on next page)			
6 Adverse Condition: Determination of Importance Evaluation for Package 2C, DI#BAB000000-01717-2200-00005, Revision 00, approved 6/28/94, states that the following requirements have been identified as a result of this evaluation: standard TBM mining practices used for excavation of the TS North Ramp shall be controlled, to conduct these operations "...in such a manner as to limit adverse effects on the long-term performance of the geologic repository to the extent practical" (10CFR60.15(c)(1)). Such controls include qualification of those performing TBM operations, performance to required tunnel line and grade tolerances, and A/E acceptance of TBM tunnel line and grade excavation procedures. The term "standard mining practices" is referenced throughout the DIE and general specification DI#BAB000000-01717-6300-01501, Revision 00, without an adequate identification or definition of mining standards or quantifying acceptance and testing criteria to confirm that criteria of "standard mining practices" has been met.			
9 Does a Significant Condition Adverse to Quality exist? Yes <u>X</u> No If Yes, Check One: <input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D <input type="checkbox"/> E		10 Does a stop work condition exist? Yes 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: 			
7 Initiator John F. Pelletier <i>John F. Pelletier</i>		14 Issuance Approved by: QADD <i>[Signature]</i> Date <u>8/5/94</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 _____	

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CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

5 Requirements (continued)

Further, that drawings, specifications, and other output documents shall contain appropriate inspection and testing criteria.

Partial Response to YM-94-075

Summary of CAR

The use of "standard mining practices" has not been appropriately interpreted into verifiable requirements in design specifications; "standard practices" have not been adequately defined.

Recommended Actions

None

Discussion

The intention of the Package 2C Determination of Importance Evaluation (DIE) is to apply some level of QA control to standard practices in order to clarify that "special processes" are not required in order to adequately limit potential adverse impacts. That is, conventional practices are adequate to limit potential impacts, based on the DIE analyst's understanding of the practices nominally applied in the course of the A/E's definition of excavation methods. Since "standard practices" are adequate, an appropriate level of QA control is needed to ensure that substandard practices are not used. To this end, specific minimum criteria associated with the conduct of these "standard practices" are specified in the DIE requirement (i.e., training of personnel, conformance to required line-and-grade tolerances, etc.).

The current DIE defines "standard practices" in terms of the A/E's specifications (i.e., codes and standards in the specification section). In the absence of explicit codes and standards or specific review criteria for assessing the adequacy of contractor's procedures, however, and since the specification simply parrots the DIE control (including that work shall be done in accordance with "standard practice"), the definition is never clearly made. This apparent inconsistency leads to confusion. Instead of defining specific codes and standards, the A/E will evaluate contractor's procedures against compliance with the requirements of the overall specification and the Q and non-Q requirements described therein. This semantic difference will still result in an acceptable practice, since the ultimate confidence in the process/practice is provided by "taking credit" for the skill and experience of the A/E in evaluating the adequacy of the contractor's procedures and methods.

The DIE requirement will be reworded to clarify this point. Any discussion of "standard practice" will be general in nature, and will be described in terms of the discussion above. The specification should then describe the specific QA criteria, and non-Q criteria associated with ensuring "standard practices" are employed. Any reference to "standard practice" in the DIE requirement(s) should not be parroted in the QA controls documented in the specification.

8/17/94 LV.SED.PSH.8/94-111

1. **Corrective Action for CAR YM-94-075**
(partial response limited to 2C Phase I "early release")

A. Remedial Action:

1. Revise 2C DIE and specification section 1501 appropriately to clarify requirements 1, 11, 13, and 23 based on discussion above in a manner acceptable to DIE and A/E representatives.

This revision will include:

for req't 1: revision of the discussion in section 10.6 of the DIE to clarify that standard mining practices are those involving the use of commercial-grade items and conventional practice as specified by the requirements of the A/E's specification;

revision of requirement 1 in the DIE to indicate that standard mining practices, as defined by the use of commercial-grade items and conventional practice as specified by the requirements of the A/E's specification, are acceptable subject to minimum QA requirements, which will be listed

for req't 11: clarification of requirement 11 to indicate that water use shall be minimized *as follows*, followed by the specific minimum criteria to be applied to water use

for req't 13: similar clarification as discussed in requirement 11 ^{REV} 01/24/94

(Note: it is not believed, in the cases of requirements 11 and 13, that use of "to the extent practical" can be entirely avoided, in reference to clean-up of spills, or the requirements will be interpreted to apply to clean up of every spill in its entirety as a QA requirement, which is clearly not the intent of the impact evaluations (WIEs and TIEs) or of 10CFR60.15(c)(1). Specificity

for req't 23: the use of the term "standard mining practices" will be clarified consistent with the discussion under requirement 1.

In each case discussed above, specification section 1501 will be revised and reviewed to ensure these controls are applied appropriately, without simply "parroting" the DIE requirements.

(Note: the remedial actions associated with the balance of the 2C release, as well as other non-2C documents, will be provided in an amended response.)

B. Investigative Action/Extent of Deficiency:

Several DIE controls have been identified which could be potentially interpreted as ambiguous:

Req't 1: "Standard mining practices...[for TBM operation]"

Req't 4: "Standard mining practices...[for drill-and-blast excavation]"

Req't 6: "Standard mining practices...[for ground support emplacement]"

Req't 11: "Water use...shall be minimized...to the extent practical..."

Req't 13: "The use of...organics...shall be avoided when practical alternative materials and methods exist..."

Req't 14: "Use of diesel...shall be minimized to the extent practical..."

Req't 18: "Water shall be removed from Swellex rockbolts...to the extent practical within limits of the hydraulic water recovery system."

Req't 20: "The use of chloride shall be limited. Only non-chloride-based ground enhancing material shall be used, and use of chloride-based concrete and grout accelerators shall be limited to the extent practical..."

Req't 21: "Cementitious grouting pressures and quantities shall be limited to the extent practical..."

Req't 23: "Maintenance of the conveyor shall be performed...in accordance with standard mining practices."

Only requirements 1, 11, 13, and 23 will require resolution prior to release of Package 2C for Phase I TBM operation. These requirements all flow down to specification section 1501 (no drawings for 2C Phase I release), which may require revision as a result of any DIE control clarification. Revisions will be based on review of the DIE and 1501 by DIE staff and the A/E; the criteria for this evaluation and possible revisions will be the clarity of the control, the A/E's understanding of the control requirements, and the clarity of the resulting specification requirements/criteria.

2. Responsible Parties/Schedule of Corrective Actions:

<u>Action</u>	<u>Responsible</u>	<u>Date</u>
Revise 2C DIE and specification section 1501 appropriately to clarify requirements 1, 11, 13, and 23 based on discussion above in a manner acceptable to DIE and A/E representatives.	Hastings Segrest	prior to Phase I release (no later than 30 Aug 94)

3. Response Approved:

M. A. Rindhoff for TCGEER
MGDS Systems Engineering Manager

8/17/94
Date

[Signature]
MGDS Development Manager

8/17/94
Date

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CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

Verification of Partial Remedial Action for CAR YM-94-075

The following Remedial Action commitments associated with the 2C "Early Release" package were verified:

- a) Revise 2C DIE and specification section 1501 appropriately to clarify DIE requirements 1, 11, 13 and 23 based on discussion above in a manner acceptable to DIE and A/E representatives.

The YMQAD staff has reviewed the Determination of Importance Evaluation for ESF Package 2C, DI#BAB000000-01717-2200-00005, which was revised to Rev 2, and determined that the requirements were appropriately clarified. Also, a check was performed to see that the requirements taken from the DIE were appropriately interpreted and incorporated into the Subsurface General Construction specification 1501. The specification was revised and it was determined that some ambiguity of the requirements still existed in Specification 1501 section 3.01P and section 301S.2.e & d these concerns were noted on the OCRWM QAP 6.2 Document Review Record comments #20 and #21 dated 9/14/94. The comments were adequately addressed and shall be incorporated into the next revision of the 1501 specification prior to the release of the 2C package.

Note: As part of the next verification the actions associated with the QAP 6.2 comment incorporation shall be verified.


John F. Pelletier, QAR

9/20/94
Date