

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION

QUALITY ASSURANCE SURVEILLANCE REPORT OF

FIELD INSPECTIONS PERFORMED BY

RAYTHEON SERVICES NEVADA

SURVEILLANCE YMP-SR-93-012

CONDUCTED JANUARY 12-13, 1993

ACTIVITIES SURVEILLED:

Review of Raytheon Services Nevada Field Verification Plans for Borehole UE-25 NRG-1 and Trench MWV-5a. In addition, observation of field inspections of boreholes: UE-25 NRG-2, USW NRG-6 and UE-25 UZ-16 were witnessed.

Prepared by:

Cynthia A. Prater for

Jenn S. Martin
Quality Assurance Engineer
Surveillance Team Leader
Yucca Mountain Quality Assurance Division

Date:

2/8/93

Approved By:

D.G. Horton For

Donald G. Horton
Director
Office of Quality Assurance

Date:

2/8/93

1.0 EXECUTIVE SUMMARY

This report contains the results of the Office of Civilian Radioactive Waste Management (OCRWM) Quality Assurance Surveillance YMP-SR-93-012 of field inspections performed by Raytheon Services Nevada (RSN). The surveillance was conducted at the RSN Field Office in Area 25 and at locations where actual inspection activities were conducted on January 12-13, 1993. The surveillance was conducted by a team from the Yucca Mountain Quality Assurance Division (YMQAD) of the Office of Quality Assurance in accordance with the OCRWM Quality Assurance Administrative Procedure QAAP 18.3, Revision 3, "Surveillance Program."

During the course of the surveillance, three deficiencies were identified that required the issuance of three OCRWM Corrective Action Requests (CARs). These CARs address the following: (1) failure to revise Field Verification Plans (FVPs) upon the issuance of documentation which would revise inspection criteria, (2) failure to delineate inspection characteristics or inspection criteria on daily inspection reports generated as the result of field verifications, and (3) lack of procedural guidelines for documenting the configuration of items when alternatives which are allowed by the drawings, but deviate from the shown design, are utilized.

2.0 SCOPE

The surveillance was performed to examine adherence to RSN Quality Assurance Procedure QAP-10.1(Y), Revision 2, "Field Verification" and included documentation review, personnel interviews, and observation of field verification activities.

3.0 SURVEILLANCE TEAM

The surveillance team consisted of the following personnel:

John S. Martin, Surveillance Team Leader, YMQAD

Activity surveilled: Review of FVPs for Borehole UE-25 NRG-1 and Trench MWV-5a.

Cynthia H. Prater, Surveillance Team Member, YMQAD

Activity surveilled: Review of FVPs for Borehole UE-25 NRG-1 and Trench MWV-5a.

Fred H. Lofftus, Surveillance Team Member, YMQAD

Activity surveilled: Observation of inspections of Boreholes: UE-25 NRG-2, USW NRG-6, and UE-25 UZ-16.

4.0 PERSONNEL CONTACTED DURING THE COURSE OF THE SURVEILLANCE

The following personnel were contacted during the course of the surveillance:

Cunningham, D.	Lead, Principal Drilling Engineer, RSN
Hale, P,	Senior Quality Assurance Specialist, RSN
Lindquist, W.	Senior Quality Assurance Specialist, RSN
McClaskey, C.	Manager, Quality Control, RSN
McMillan, B.	Specification Engineer, RSN
Stanley, B.	Manager, Site Characterization Design, RSN
Rue, J.	Quality Engineering Procedure Specialist, RSN
Regenda, M.	Manager, Quality Assurance YMP, RSN
Ricks, S.	Senior Quality Control Specialist, RSN
Tunney, D.	Manager Quality Assurance Engineering, RSN

5.0 SURVEILLANCE RESULTS

The surveillance consisted of field observation, personnel interviews and the review of documentation associated with inspection activities performed by RSN.

Observation of field inspections were conducted at North Ramp Boreholes UE-25 NRG-2 and USW NRG-6, and at Vertical Seismic Profile Borehole UE-25 UZ-16. During the course of these observations, it was found that overall the Quality Control Representative performing these inspections was knowledgeable of his responsibilities and duties, and performed the required inspections in accordance with inspection criteria delineated within the FVPs for the boreholes observed.

Documentation review was performed on FVPs and associated daily inspection reports, specifications, drawings, and change documentation to determine adherence to procedural and upper-tier requirements. Specifically, inspection documentation was examined for appropriate preparation, review and approvals, revisions, establishment of witness and hold points and justification when witness or hold points are waived; verification of these points relative to the status of the activity, and assurance that inspections were traceable to the activity performed.

In reviewing documentation, three deficiencies were found. These deficiencies are detailed in CARs YM-93-028, -029 and -030, and were discussed with RSN management. A synopsis of the CARs is provided below (for a listing of documentation examined, see Attachment 1).

In addition to the above, personnel files for the Manager, Quality Control and two inspectors were examined to assure that their qualifications had been maintained as required. The results of this examination were found to be satisfactory and documentation reviewed was found to be in order.

The effectiveness of implementation of QAP-10.1(Y) was divided into two functional areas relative to this surveillance. These functions are: (1) actual inspection activities performed on an ongoing basis, and (2) the documentation of these activities. Based upon the surveillance results, effectiveness of implementation for actual inspection activities was found to be satisfactory; however, the effectiveness of implementation relative to the documentation of these activities was determined to be unsatisfactory (reference CARs detailed below).

The following is a brief synopsis of the CARs issued as a result of this surveillance (for specific details, information copies are included as Attachment 2 of this report).

YM-93-028

RSN QAP-10.1(Y), Paragraph 6.1.6, requires that FVPs be revised when revisions to drawings, specifications, purchase requisitions or procurement authorizations warrant such action. In reviewing documentation associated with the inspections of Trench MWV-5a, it was found that Field Change Request 92/118 revised Specification YMP-025-9-SP01 specifically for compaction requirements in the backfilling of trenches. However, in the review of the FVP for Trench MWV-5a, the inspection details for compaction and backfilling had not been revised to reflect the new requirements.

YM-93-029

RSN Quality Assurance Program Description (QAPD), Section 10, Paragraph 10.3, stipulates that inspection records include the characteristics inspected. In review of inspection documentation for FVP-92-005, it was noted that daily Verification Activity Reports and Quality Control Monitoring Reports did not contain or reference specific characteristics inspected nor the identification of the inspection criteria.

YM-93-030

RSN QAPD, Section 3, Paragraph 3.0 requires that procedures be developed which describe the systems engineering process by which design activities, from conceptual design through final design are accomplished. During the course of this surveillance, it was noted that design was being provided to the constructor on Records of Verbal Communication in lieu of approved design documentation. This methodology is not detailed within the RSN quality program.

6.0 RECOMMENDATIONS

None

ATTACHMENT 1

DOCUMENTATION REVIEWED

The following is a listing of documentation reviewed:

1. **Field Verification Plans**

UE-25 NRG-1 North Portal Ramp Borehole, FVP 92-008, Revision 0, and associated daily Quality Monitoring Reports and Verification Activity Reports

Standard Exploratory Trench MWV-5a, FVP 92-005, Revision 0, and associated daily Quality Monitoring Reports and Verification Activity Reports

2. **Drawings:**

YMP-025-9-CIVL-GE05, Revision 0

YMP-025-9-CIVL-GE06, Revision 0

3. **Specifications:**

YMP-025-9-SP01, Revision 0

YMP-025-9-SP02, Revision 0

4. **Change Documentation:**

FCR-92/118

5. **Personnel Files:**

W. Lindquist

K. McClaskey

S. Ricks

ATTACHMENT 2

INFORMATION COPIES OF CORRECTIVE ACTION REQUESTS

ORIGINAL
 THIS IS A RED STAMP

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C.		8 CAR NO: <u>YM-93-028</u> DATE: <u>01/26/93</u> SHEET: <u>1</u> OF <u>2</u> QA
CORRECTIVE ACTION REQUEST		
1 Controlling Document RSN, QAP-10.1(y)		2 Related Report No. YMP-SR-93-012
3 Responsible Organization RSN	4 Discussed With M. Regenda/D. Tunney	
5 Requirement: Raytheon Services Nevada (RSN) Quality Assurance Procedure QAP-10.1(Y), Revision 3, Paragraph 6.1.6, states in part: "Revision to the Field Verification Plan (FVP) may be required as a result of revision to drawings, specifications...."		
6 Adverse Condition: Contrary to the above, FVP 92-005, Revision 0, should have been revised upon issuance of FCR 92/118. Subject Field Change Request (FCR) revised specifications YMP-025-9-SP01, Revision 0, and YMP-025-9-SP02, Revision 0, delineating new requirements for the compaction and backfilling of trenches. In review of FVP 92-005, Step 15, it was found that inspection requirements do not coincide with the requirements stipulated within FCR 92/118.		
9 Does a significant condition adverse to quality exist? Yes ___ No <u>X</u> 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 If Yes, Circle One: A B C D	11 Response Due Date: 20 Working 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 type="checkbox"/> Root Cause Determination		
13 Recommended Actions: Identify the remedial actions to be taken to correct the deficiency note in Block 6. Investigate the program processes, activities or documentation to determine the extent and depth of similar conditions as noted in Block 6. Identify these deficiencies and provide the measures to correct them. Identify method to preclude recurrence and report results.		
7 Initiator <i>[Signature]</i> Date <u>1/26/93</u>	14 Issuance Approved by <i>[Signature]</i> QADD Date <u>1/27/93</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	

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OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C.		8 CAR NO: <u>YM-93-029</u> DATE: <u>01/26/93</u> SHEET: <u>1</u> OF <u>2</u> QA
CORRECTIVE ACTION REQUEST		
1 Controlling Document RSN, QAPD		2 Related Report No. YMP-SR-93-012
3 Responsible Organization RSN		4 Discussed With M. Regenda/D. Tunney
5 Requirement: Raytheon Services Nevada (RSN) QAPD-002, Revision 0, Change Notice B, Section 10.0, Paragraph 10.3, "Inspection," states in part: "Inspection records shall include: a. Characteristics inspected and objective evidence of the results. b. Identification of the inspection criteria or reference documents used to determine acceptance."		
6 Adverse Condition: In review of inspection documentation for Field Verification Plan (FVP) 92-005, it was noted that daily Verification Activity Reports and Quality Control Monitoring Reports did not contain or reference specific characteristics inspected nor the identification of the inspection criteria. Examples include: <ul style="list-style-type: none"> o Quality Control Monitoring Report, dated May 26, 1992, states that work was performed in accordance with job specifications as outlined in FVP 92-005 and in accordance with Drawings YMP-025-9-CIVL-GE05, Revision 0 and YMP-025-9-CIVL-GE06, Revision 0. However, this inspection documentation did not detail the FVP characteristics (steps) inspected or inspection criteria relative to a particular drawing (i.e., what criteria from the drawing was inspected). o Verification Activity Report, dated November 23, 1992, notes that backfilling was also accomplished as required by Job Package (JP) 92-005. 		
9 Does a significant condition adverse to quality exist? Yes ___ No <u>X</u> 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 If Yes, Circle One: A B C D	11 Response Due Date: 20 Working 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 type="checkbox"/> Root Cause Determination		
13 Recommended Actions: Identify the remedial actions to be taken to correct the deficiency note in Block 6. Investigate the program processes, activities or documentation to determine the extent and depth of similar conditions as noted in Block 6. Identify these deficiencies and provide the measures to correct them. Identify method to preclude recurrence and report results.		
7 Initiator John S. Martin <i>JS</i> Date <u>1-16-93</u>	14 Issuance Approved by: QADD <i>RC. Spence</i> Date <u>1/27/93</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.

6 CAR NO. YM-93-029
DATE 01/26/93
SHEET 2 OF 2
QA

CORRECTIVE ACTION REQUEST (Continuation Page)

6 Adverse Condition (continued)

RSW inspections are required to be performed per an approved FVP and not the JP; however, the characteristics inspected were not listed.

Discussion:

In reviewing daily inspection reports, it was noted that the reports stated, that inspections of Trench MNV-5a were performed utilizing Drawing YMF-025-9-CIVL-GE06, Revision 0. However, in comparing the configuration of Trench MNV-5a with the drawing, it was found that the trench did not match any trench configurations on the drawing. In review, it was found that an alternate option is allowed per the drawing notes; however, this option was documented on YMF RVC and not upon any recognized design document (reference CAR YM-93-030). As such, inspections were not accomplished per YMF-025-9-CIVL-GE06.

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OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C.		8 CAR NO.: <u>YM-93-030</u> DATE <u>01/26/93</u> SHEET <u>1</u> OF <u>1</u> QA
CORRECTIVE ACTION REQUEST		
1 Controlling Document RSN QAPD-002, Revision 0		2 Related Report No. YM-SR-93-012
3 Responsible Organization RSN		4 Discussed With B. Stanley/E. Hale
5 Requirement: Raytheon Services Nevada (RSN) Quality Assurance Program Description (QAPD)-002, Revision 0, Change Notice B, Section 3.0, Paragraph 3.0, Design Control, states in part: "Design activities are accomplished in accordance with written procedures which comply with the requirements of the documents specified in Appendix A of this QAPD. These procedures describe the systems engineering process by which design activities, from conceptual design through final design, are planned, controlled, and implemented; and describe the control of design inputs, interfaces, outputs, changes and deficiencies."		
6 Adverse Condition: Contrary to the above, RSN does not procedurally describe the systems engineering process for trench designs that are detailed on Records of Verbal Communication (RVC). Example: In reviewing the design details of Trench MWV-5a, it was found that the details of the trench design were delineated upon a RVC and not included with an approved design document. It must be noted that options are allowed to be utilized based upon notes on drawings for standardized trenches and test pits; however, when utilizing an option, it is expected that the methodology for documenting the design be described within procedures. At the present time, the utilization of RVCs to document an approved design, is not described within RSN procedures.		
9 Does a significant condition adverse to quality exist? Yes ___ No <u>X</u> 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 If Yes, Circle One: A B C D
11 Response Due Date: 20 Working 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 type="checkbox"/> Root Cause Determination		
13 Recommended Actions: Identify the remedial actions to be taken to correct the deficiency note in Block 6. Investigate the program processes, activities or documentation to determine the extent and depth of similar conditions as noted in Block 6. Identify these deficiencies and provide the measures to correct them. Identify method to preclude recurrence and report results.		
7 Initiator John S. Martin <i>JSM</i> Date <u>1-26-93</u>		14 Issuance Approved by: <i>[Signature]</i> Date <u>1/29/93</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