

**OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**  
**YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION**  
**QUALITY ASSURANCE SURVEILLANCE REPORT**  
**OF**  
**SCIENCE APPLICATIONS INTERNATIONAL CORPORATION**  
**SURVEILLANCE YMP-SR-93-030**  
**CONDUCTED AT THE NEVADA TEST SITE AND LAS VEGAS, NEVADA**  
**JUNE 29 AND JULY 6, 1993**

**ACTIVITIES SURVEILLED:**

**FIELD VERIFICATION OF GEOPHYSICAL LOGGING OPERATIONS BY  
THE YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
SPECIFIC TO THE NORTH RAMP GEOLOGIC BOREHOLE NO. 6 (NRG-6)**

Prepared by: \_\_\_\_\_



Date: \_\_\_\_\_

7/27/93

**Ken M. Wolverton**  
**Surveillance Team Leader**  
**Yucca Mountain Quality Assurance Division**

Approved by: \_\_\_\_\_



Date: \_\_\_\_\_

7/28/93

**Donald G. Horton**  
**Director**  
**Office of Quality Assurance**

## **1.0 EXECUTIVE SUMMARY**

This surveillance was conducted to monitor the verification activities by the Yucca Mountain Site Characterization Project Office (YMPO) when Geophysical Logging Operations were in process on June 29, 1993, specific to Borehole North Ramp Geologic No. 6 (NRG-6). The initial intent of the surveillance was to evaluate the effectiveness of YMPO's field verification activities during a geophysical logging operation. However, due to unforeseen logistics problems (i.e. clearance for instrument using radioactive source was not obtained until the second shift), the surveillance had to be modified to verifying compliance with the procedural requirements for documentation at the Nevada Test Site (NTS) and YMPO. Although one Corrective Action Request (CAR) was issued to identify procedural noncompliance which was identified by the YMPO team during their verification activity (CAR YM-93-071), overall compliance with the procedural requirements for documentation and its processing/approval, was found to be effective. A description of CAR YM-93-071 is included in Paragraph 5.1 of this report along with an attached information copy.

## **2.0 SCOPE**

Surveillance 93-030 was conducted at the NTS and YMPO to verify compliance with the requirements of Administrative Procedure AP S.III.1-Q, Revision 0, "Yucca Mountain Site Characterization Project Field Verification of Geophysical Logging Operations," specific to the processing/approval of documentation required for Borehole NRG-6.

## **3.0 SURVEILLANCE TEAM**

Ken M. Wolverton, Surveillance Team Leader, Yucca Mountain Quality Assurance Division

## **4.0 PERSONNEL CONTACTED**

L. Thompson, Geophysical Logging Coordinator/Client Representative, Science Applications International Corporation (SAIC)  
K. Herrin, Geophysical Logging Coordinator (In Training), SAIC

## **5.0 SURVEILLANCE RESULTS**

During the surveillance, records specific to Job Identification No. 93-NRG-6-01 were reviewed for proper completion, processing, and approvals prior to the logging operation, during the logging operation, and after the logging operation was completed.

The documentation was evaluated for compliance to the procedural requirements with emphasis being placed on the traceability of the information to Borehole NRG-6 and verification of the instrument calibrations as well as their traceability to the field prints. With the exception of one condition adverse to quality documented on CAR YM-93-071 (see Paragraph 5.1), the results of the surveillance indicate that YMPO is effectively implementing the requirements of AP S.III.1-Q, Revision 0 for documentation and its processing/approval. The records reviewed during this surveillance, are listed in Paragraph 5.2 of this report.

#### 5.1 CAR YM-93-071

YMPO procedure AP S.III.1-Q, Revision 0, Paragraph 5.5.1 requires that the composition of the field print master be in a particular order. Contrary to this requirement, the Logging Service Organization composed the field print in a different order than stated in the procedure.

#### 5.2 DOCUMENTATION REVIEWED

1. "Authorization for YMP Borehole Geophysical Logging Activity" (AP S.III.1-Q, Exhibit 9.1, Form No. YMP-149-R0)
2. "Client Representative's Pre-Field Work checklist" (AP S.III.1-Q, Exhibit 9.2, Form No. YMP-150-R0)
3. "List of Tools/Curves Run" (AP S.III.1-Q, Exhibit 9.3, Form No. YMP-151-R0)
4. "Tool-to-Tool Main Pass Depth Registration" (AP S.III.1-Q, Exhibit 9.4, Form No. YMP-152-R0)
5. "Summary of Trips in Borehole Including Verification of Depth Registration" (AP S.III.1-Q, Exhibit 9.5, Form No. YMP-153-R0)
6. "Borehole Access Request" (BAR YMP-FOI-1401 for Field Operating Instruction)
7. Logger's Log

#### 6.0 RECOMMENDATION

Issue an Interim Change Notice to revise YMPO procedure AP S.III.1-Q, Revision 0 to address the problem detected during the logging operation and identified on CAR YM-93-071.

#### 7.0 ATTACHMENTS

Attachment 1: Information Copy of CAR YM-93-071

ATTACHMENT 1

INFORMATION COPY OF CORRECTIVE ACTION REQUEST

ORIGINAL  
THIS IS A RED STAMP

<b>OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C.</b>		8 CAR NO.: <u>YM-93-071</u> DATE: <u>7/19/93</u> SHEET: <u>1</u> OF <u>2</u> QA
<b>CORRECTIVE ACTION REQUEST</b>		
1 Controlling Document AP S. III. 1Q, Revision 0		2 Related Report No. N/A
3 Responsible Organization Drilling Support and Sample Management	4 Discussed With Ken M. Wolverson/QATSS	
5 Requirement: Procedure AP S.III.1-Q, Revision 0, paragraph 5.5.1 requires the LSO to compose the sections of the field print master, where applicable, in the following order: 1) Log Heading, including remarks section 2) Reduced depth scale main pass(es) (2"=100') 3) Full depth scale main pass(es) (5"=100'), including after-survey casing checks, 4) Full depth scale repeat pass(es) 5) Special tests runs, or passes 6) After-survey calibrations 7) After-survey casing checks if not part of the main pass 8) In-hole calibrations or checks		
6 Adverse Condition: Contrary to the above requirements, the field print masters for the NRG-6 logging job were composed in the following order: 1) Log heading, including remarks section 2) Reduced depth scale main pass (es) (2"=100') 3) Full depth scale main pass(es) (5"=100'), including after-survey casing checks 4) Full depth scale repeat pass(es) 5) Before survey casing checks 6) After survey calibrations 10) Before-survey calibration and shop calibrations		
9 Does a significant condition adverse to quality exist? Yes <u>  </u> No <u>X</u> If Yes, Circle One: A B C	10 Does a stop work condition exist? Yes <u>  </u> No <u>X</u> ; If Yes - Attach copy of SWO If Yes, Circle One: A B C D	11 Response Due Date: <u>7/23/93</u> 20 working days from issuance.
12 Required Actions: <input checked="" type="checkbox"/> Remedial <input type="checkbox"/> Extent of Deficiency <input type="checkbox"/> Preclude Recurrence <input type="checkbox"/> Root Cause Determination		
13 Recommended Actions: Issue an ICN to revise the procedure to accommodate the preferred sequence of recording log data on the master field print.		
7 Initiator K. Herrin <u>[Signature]</u> Date <u>7/16/93</u>	14 Issuance Approved by: QADD <u>[Signature]</u> Date <u>7/23/93</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 _____	

ATTACHMENT 1

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

8 CAR NO.: YM-93-071  
DATE: 7/19/93  
SHEET: 2 OF 2  
QA

CORRECTIVE ACTION REQUEST (Continuation Page)

5 Requirements (continued)

- 9) Before-survey casings checks and
- 10) Before-survey calibrations and shop calibrations