



Department of Energy

Washington, DC 20585

JUN 16 1997

QA: L

L. D. Foust, Technical Project Officer
for Yucca Mountain Site
Characterization Project
TRW Environmental Safety Systems, Inc.
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Las Vegas, NV 89134

ISSUANCE OF SURVEILLANCE RECORD M&O-SR-97-033 RESULTING FROM THE OFFICE OF QUALITY ASSURANCE (OQA) SURVEILLANCE OF THE CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT AND OPERATING CONTRACTOR (CRWMS M&O)

Enclosed is the Quality Assurance Surveillance Record M&O-SR-97-033 conducted by the OQA at the CRWMS M&O Yucca Mountain Site, May 20-23, 1997.

The purpose of the surveillance was to verify compliance to procedures that control performance audit activities of Meteorological Monitoring Equipment. Based on documentation reviews, personnel interviews, and observations of the work in process, it has been determined that the overall implementation and adequacy of performance audits of the meteorological monitoring activities is effective. One Deficiency Report (DR) was issued as a result of the surveillance which identified the use of an undocumented reference to "true north" during performance audits. Response to the DR, which was transmitted via separate letter, is due by the date indicated in Block 12.

This surveillance is considered completed and closed as of the date of this letter. A response to this surveillance record is not required; however, the open DR will continue to be tracked until it is closed to the satisfaction of the quality assurance representative and the Director, Office of Quality Assurance.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or Robert P. Hasson at (702) 794-5023.

James Blaylock
Donald G. Horton, Director
Office of Quality Assurance

OQA:JB-1702

Enclosure:
Surveillance Record M&O-SR-97-033

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JUN 16 1997

L. D. Foust

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

Surveillance No. M&O-SR-97-033

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

1. ORGANIZATION/LOCATION: CRWMS M&O/Yucca Mountain Site	2. SUBJECT: Meteorological Monitoring Performance Audits	3. DATE: May 20-23, 1997
4. SURVEILLANCE OBJECTIVE: Verify compliance to procedures that control performance audit activities.		
5. SURVEILLANCE SCOPE: Evaluate implementation of Nevada Work Instruction (NWI) NWI-MET-001Q, "Tests, Checks, and Performance Audits of Meteorological Equipment." Measuring and Test Equipment (M&TE) used to support these audits and qualification of personnel will also be evaluated.		6. SURVEILLANCE TEAM: Team Leader: <u>Robert P. Hasson</u> Additional Team Members N/A
7. PREPARED BY: <u>Robert P. Hasson</u> Robert P. Hasson Surveillance Team Leader	5/14/97 Date	8. CONCURRENCE: <u>Donald G. Horton</u> Donald G. Horton Director, OQA N/A Date

SURVEILLANCE RESULTS

9. BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:

A surveillance was conducted May 20-23, 1997 to evaluate the Civilian Radioactive Waste Management System Management and Operating Contractor's (CRWMS M&O) Environmental Applications Division (EAD) performance audit of meteorological monitoring equipment. The EAD performance audit was conducted in accordance with Nevada Work Instruction NWI-MET-001Q, Revision 1, ICN 1, "Tests, Checks, and Performance Audits of Meteorological Equipment."

The performance auditor, Stephen Cameron, is a technical staff member of the EAD trained to perform the work in accordance with NWI-MET-001Q. Performance audits are necessary to satisfy the U.S. Environmental Protection Agency quality assurance requirements. The Environmental Field Programs Division (EFPD) Site Technicians were available to assist the performance auditor throughout the audit.

See Pages 2 - 4.

10. SURVEILLANCE CONCLUSIONS:

Based on documentation reviews, personnel interviews, and observations of the work in-process, it has been determined that the overall implementation and adequacy of performance audits of the meteorological monitoring activities is effective. There was one Deficiency Report issued as a result of the surveillance which identified the use of an undocumented reference to true north during performance audits.

11. COMPLETED BY:

Robert P. Hasson 6/10/97
Surveillance Team Leader **Date**

12. APPROVED BY:

James Blaylock Jr 6/13/97
Director, OQA **Date**

Block 9 (continued) BASIS FOR EVALUATION/DESCRIPTION OF OBSERVATIONS:

The surveillance of the performance audit was conducted at the Site 1, NTS-60 meteorological tower. The performance auditor documented the results of each verification on form NWI/285, Revision dated 10/01/96, "Meteorological Equipment Performance Check or Audit." The form was marked to show that the test was a performance audit, rather than a performance check. Measuring & Test Equipment (M&TE) used for the performance audit was independent of the M&TE used by the EFPD site technicians for calibration and performance checks.

A controlled set of instructions, copy #100579, was at the job location. The instructions were assigned to Gary Jones, Environmental Scientist.

Study Plan 8.3.1.12.2.1, Revision 2, "Meteorological Data Collection at the Yucca Mountain Site", Section 3.1.2, defines the frequency of performance audits as "twice each calendar year." The EFPD M&TE/Operating Equipment list also identifies a six month interval for performance audits.

The following performance audit activities that were performed by the EAD performance auditor were observed in-process:

- * wind direction measurement, NWI-MET-001Q, section 3.7
- * wind speed measurement, NWI-MET-001Q, section 3.8
- * temperature measurement, NWI-MET-001Q, section 3.9
- * precipitation measurement, NWI-MET-001Q, section 3.10
- * barometric pressure measurement, NWI-MET-001Q, section 3.11
- * relative humidity and dew point measurement, NWI-MET-001Q, section 3.12
- * solar radiation measurement, NWI-MET-001Q, section 3.13

The performance auditor followed the instructions detailed in NWI-MET-001Q for each area that was required to be reviewed. One concern was identified in regard to the performance auditor's activity for wind direction measurement. The following baseline data was not established:

NWI-MET-001Q, Revision 1, ICN 1, Section 3.7 states that, "Alignment checks given in this section are based on the wind direction sensor being mounted on a crossarm oriented to true north and south, with the sensor on the south end of the crossarm."

NWI-MET-001Q, Revision 1, ICN 1, Section 3.7.(1) states that, "Before lowering the tilt-down tower (if applicable), stand in a location where the established crossarm orientation landmark is aligned with the center of the crossarm. NOTE: This location should be at least about 60 feet from the base tower."

The performance auditor paced off 20 steps and lined the crossarm to a white stake marked approximately 50 yards past the tower and to a notch in the mountain to the north for a "true

north" reading. When questioned about the reliability of the white stake, the performance auditor suggested that the white stake could be easily moved or knocked down and, in fact, this has happened in the past. The performance auditor noted that the notch in the mountain was used as the "true north" marker. When requested that documentation be presented to prove the (white stake) marker was surveyed to establish a "true north" mark, none could be provided. Additionally, no documentation could be provided that the notch in the mountain had been surveyed for the reference to "true north." There was no documented evidence that the "true north" baseline used to align the wind direction crossarm is accurate. NWI-MET-001Q identified the acceptable tolerance as (plus or minus) five degrees. With no established reference point, these tolerances could not be verified. Deficiency Report (DR) YM-97-D-054 was issued to document this deficiency.

M&TE used for the performance audit was found to be properly identified with serial number (S/N) identification, calibration date and due date, and who performed the calibration. The following instrumentation and M&TE were observed:

instrument: Cooper - Digital Thermometer
S/N: 204098
last calibration: 12/31/96
calibration due date: 12/31/97*
calibrated by: Westinghouse

instrument: AIR - Barometer
S/N: 2A1898
last calibration: 12/31/96
calibration due date: 12/31/97*
calibrated by: Dick Munns Co.

instrument: Fluke DMV
S/N: 544075
last calibration: 12/31/96
calibration due date: 12/31/97*
calibrated by: Westinghouse

instrument: Nalgene - Graduated Cylinder
S/N: PC2
last calibration: 12/19/95
calibration due date: 12/31/2000
calibrated by: Stephen Cameron

instrument: Waters - Torque Watch Gage
S/N: 4683
last calibration: 12/31/96
calibration due date: 12/31/97*
calibrated by: Westinghouse

instrument: Young - Anemometer Motor
S/N: CA 01574
last calibration: 12/02/96
calibration due date: 12/02/97
calibrated by: Stephen Cameron

* The calibration due date for these instruments was established by the CRWMS M&O as 05/98 in accordance with instruction NWI-RED-006Q, Revision 1, ICN 1, "Control of R/EFPD Measuring and Test Equipment." Section 3.10 of this instruction allows the scheduled interval due date, in this case one year, to be revised from the first usage date of this instrument.

Westinghouse, Energy Services Division, was verified to be listed on the Yucca Mountain Project Qualified Supplier List (QSL). The scope of services Westinghouse is authorized to perform as documented on the QSL include calibration, and maintenance and repair of instruments. The next audit of Westinghouse, Energy Services Division, is due 10/98.

The calibration of the RM Young - Anemometer Motor was performed by Stephen Cameron utilizing instruction NWI-MET-009Q, Revision 1, "Calibration of EFPD Measuring & Test Equipment", Section 3.2.

The surveillance team leader verified that the performance auditor received training to the appropriate instructions. Training records provided by the CRWMS M&O Training Database indicated the performance auditor was trained to the latest revision of the NWIs being used.

PERSONNEL CONTACTED:

Dale Ambos	Manager, EFPD	SAIC
Stephen Cameron	Environmental Scientist	SAIC
Robert Campbell	Environmental Specialist Technician	SAIC
Paul Fransioli	Meteorologist	SAIC
Gary Jones	Environmental Scientist	SAIC
Sandra Majewski	Research Scientist and Data Analyst	SAIC
Tim Moran	Environmental Specialist Technician	SAIC

DOCUMENTS REVIEWED:

- NWI-MET-001Q, Revision 1, ICN 1, "Tests, Checks, and Performance Audits of Meteorological Equipment"
- NWI-MET 009Q, Revision 1, "Calibration of EFPD Measuring & Test Equipment"
- NWI-RED-006Q, Revision 1, ICN 1, "Control of R/EFPD Measuring and Test Equipment"
- Study Plan 8.3.1.12.2.1, Revision 2, "Meteorological Data Collection at the Yucca Mountain Site"
- Training Records for Stephen Cameron
- QSL dated 04/17/97