



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
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QA: L

OCT 13 1994

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ISSUANCE OF SURVEILLANCE RECORD YMP-SR-94-055 RESULTING FROM
YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) SURVEILLANCE
OF SANDIA NATIONAL LABORATORIES NEW ENGLAND RESEARCH INC. (NER)
(SCPB: N/A)

Enclosed is the record of Surveillance YMP-SR-94-055 conducted by
the YMQAD at the NER facilities in White River Junction, Vermont,
September 15-16, 1994.

The purpose of the surveillance was to verify implementation of
NER's control of measuring and test equipment and sample control
for adequacy and effectiveness of Quality Assurance Implementing
Procedure (QAIP) 12-1 and QAIP 20-03.

No Corrective Action Requests were issued as a result of this
surveillance. This surveillance is considered completed and
closed as of the date of this letter. A response to this
surveillance record and any documented recommendations is not
required.

If you have any questions, please contact either Robert B.
Constable at (702) 794-7945 or John R. Doyle at (702) 794-7986.

Richard E. Spence

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-220

Enclosure:
Surveillance Record YMP-SR-94-055

YMP-5

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OCT 13 1994

cc w/encl:

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

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

¹ORGANIZATION/LOCATION:
New England Research (NER),
White River Junction, VT.

²SUBJECT:
Sample and Measuring and Test Equipment
(M&TE) Control

³DATE: 9/15 and 16/94

⁴SURVEILLANCE OBJECTIVE:
Verify Control of Specimens and M&TE by NER.

⁵SURVEILLANCE SCOPE:
Verify implementation of NER's control of M&TE Equipment and Sample Control for
adequacy and effectiveness of QAIP 12-1 and QAIP 20-03.

⁶SURVEILLANCE TEAM:
Team Leader:

John R. Doyle
Additional Team Members:

Richard L. Weeks

⁷PREPARED BY:

John R. Doyle John R. Doyle 9/12/94
Surveillance Team Leader Date

⁸CONCURRENCE:

N/A
QA Division Director Date

SURVEILLANCE RESULTS

⁹BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:
See Pages 2 through 5

¹⁰SURVEILLANCE CONCLUSIONS:
See Page 5

¹¹COMPLETED BY:

John R. Doyle 10/7/94
Surveillance Team Leader Date

¹²APPROVED BY:

R.C. Spence 10/12/94
QA Division Director Date

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

Quality affecting work performed by NER, in support of the Yucca Mountain Site Characterization Office (YMSCO), is conducted in accordance with the Sandia National Laboratories (SNL) Quality Assurance (QA) Program. The purpose of this surveillance was to verify implementation of SNL's Quality Assurance Implementing Procedures (QAIPs) 12-1, "Measuring and Test Equipment," Revision 04 and QAIP 20-3, "Sample Control," Revision 00 by NER. The Surveillance was conducted on September 15 and 16, 1994 at the NER facilities located in White River Junction, Vermont.

The Surveillance evaluated control of selected specimens transferred from the Sample Management Facility (SMF) and SNL to NER facilities and compliance to selected M&TE procedures.

Personnel contacted during the course of the Surveillance:

Randall Martin III, President, NER
Peter Boyd, QA Coordinator, NER
David Hawkinson, Senior QA Specialist, Mac Technical Services Co.
Chris Lewis, SMF Curator, Science Applications International Corporation (SAIC)
Ronald Price, Principle Investigator (PI), SNL

The methodology used to conduct this surveillance included visual observation of NER control of borehole core specimens, personnel interviews and review of applicable documentation. The M&TE portion of this surveillance verified NER conformance to selected requirements by examination of QA records, laboratory equipment and interviews with NER staff.

A breakdown of this methodology is as follows:

SAMPLE CONTROL:

Documentation reviews consisted of an examination of procedures, Chain of Custody Forms and shipping documentation. Four separate shipments of specimens were shipped from the SMF to NER. Out of these four shipments, twelve specimens were selected. SMF unique identifiers, letters of transfer, SMF Specimen Custody Receipts and Chain of Custody Forms for the original specimens were examined and found to be satisfactory.

In addition, forty subdivided specimens from the above mentioned specimens were also examined. These subdivided specimens were either located at the NER laboratory or sent to SNL and Holometrics Inc. facilities. Specimens were verified as to subdivided specimen location, transfer documentation, and Chain of Custody Forms. It is to be noted that the surveillance team did not physically verify specimens at the SNL and Holometrics Inc. facilities. Specimens verified are listed below:

BOREHOLE USW-NRG 7/7A SPECIMENS VERIFIED AT THE NER FACILITIES

SMF SPECIMEN ID	NER SPECIMEN ID	SUBDIVIDED SPECIMEN ID
0031146	NRG-7-507.4-SNL	NRG-7-507.4-SNL-A NRG-7-507.4-SNL-B NRG-7-507.4-SNL-D
0031156	NRG-7-613.8-SNL	NRG-7-613.8-SNL-A NRG-7-613.8-SNL-B
0031166	NRG-7-698.4-SNL	NRG-7-698.4-SNL-A NRG-7-698.4-SNL-B NRG-7-698.4-SNL-C NRG-7-698.4-SNL-E NRG-7-698.4-SNL-F
0031166	NRG-7-806.3-SNL	NRG-7-806.3-SNL-A NRG-7-806.3-SNL-B NRG-7-806.3-SNL-D
0031143	NRG-7-293.3-SNL	NRG-7-293.3-SNL-A NRG-7-293.3-SNL-B
0035043	NRG-7-1046.8-SNL	NRG-7-1046.8-SNL-A NRG-7-1046.8-SNL-B
0035044	NRG-7-1057.6-SNL	NRG-7-1057.6-SNL-A NRG-7-1057.6-SNL-B
0035053	NRG-7-1236.7-SNL	NRG-7-1236.7-SNL-A NRG-7-1236.7-SNL-B
0035068	NRG-7-1348.8-SNL	NRG-7-1348.8-SNL-A NRG-7-1348.8-SNL-B
0037078	NRG-7-1437.8-SNL	NRG-7-1437.8-SNL-A NRG-7-1437.8-SNL-B

BOREHOLE USW-NRG-7/7A AT OTHER LOCATIONS (REVIEWED CHAIN OF CUSTODY AND TRANSMITTAL DOCUMENTATION)

SMF ID	NER SPECIMEN ID	SUBDIVIDED ID	LOCATION
0031123	NRG-7-27.0-SNL	NRG-7-27.0-SNL-A NRG-7-27.0-SNL-B NRG-7-27.0-SNL-C NRG-7-27.0-SNL-D	HOLOMETRICS (5/19/94) HOLOMETRICS (5/19/94) Chocas, SNL (9/7/94) Chocas, SNL (9/7/94)
0031133	NRG-7-131.7-SNL	NRG-7-131.7-SNL-A NRG-7-131.7-SNL-B NRG-7-131.7-SNL-C NRG-7-131.7-SNL-D	HOLOMETRICS (5/19/94) HOLOMETRICS (5/19/94) Chocas, SNL (9/7/94) Chocas, SNL (9/7/94)
0031143	NRG-7-293.3-SNL	NRG-7-293.3-SNL-C NRG-7-293.3-SNL-D	Chocas, SNL (9/7/94) Chocas, SNL (9/7/94)
0035043	NRG-7-1046.8-SNL	NRG-7-1046.8-SNL-C	Chocas, SNL (9/7/94)
0035044	NRG-7-1057.6-SNL	NRG-7-1057.6-SNL-C	Chocas, SNL (9/7/94)
0035053	NRG-7-1236.7-SNL	NRG-7-1236.7-SNL-C	Chocas, SNL (9/7/94)
0035068	NRG-7-1348.8-SNL	NRG-7-1348.8-SNL-C	Chocas, SNL (9/7/94)
0035078	NRG-7-1437.8-SNL	NRG-7-1437.8-SNL-C	Chocas, SNL (9/7/94)

MEASURING AND TEST EQUIPMENT:

The M&TE portion of this surveillance verified NER conformance to selected requirements as stated in the following procedures:

QAIP 12-1, "Measuring and Test Equipment Control," Revision 04
Technical Procedure (TP) 93, "Load Cell Calibration at New England
Research, Inc.," Revision 0
TP 96, "Pressure Transducer Calibration at New England Research,
Inc.," Revision 0

Compliance to QAIP 12-1:

TP-219, "Unconfined Compression Experiments at 22° C and a Strain Rate of 10 E-5/s," Revision 0 and TP 229, "Bulk Properties Determinations of Tuffaceous Rocks: Dry Bulk Density, Saturated Bulk Density, Average Grain Density and Porosity," Revision 0, were examined and found to specify M&TE to be calibrated, calibration interval, source of calibration and acceptable tolerances.

M&TE were found to have a readily visible label indicating calibration status and unique ID. The following M&TE were examined to verify compliance to the aforementioned requirements: Sartorius scales (Serial Nos. 37020096 and 40120078), micrometer head (Serial No. NER-010-86), pressure transducer (Serial No. C37528), thermometer (Serial No. 5005089), thermocouple (Serial No. TCS1), and voltmeter (Serial No. 2137A22533).

Instructions, dated June 30, 1994, to Materials Testing Systems (MTS), a commercial facility that conducts calibrations of reference standards, were examined and found to be complete. The instructions were for a load cell, Serial No. K758, and included the following information: type of M&TE to be calibrated, acceptable accuracy, requirements for precision of measurements, and range over which calibration is to be performed.

Signed certifications for calibrated transfer standards for two Sartorius scales (Serial Nos. 37020096 and 40120078) were found to be satisfactory and contain the following information: name and serial number of device calibrated, date of calibration, ID of the calibration procedure and revision number, standards values versus device readings, ID of the calibration equipment and measurement standards used, a quantitative statement of the accuracy and precision of the device including results of the calibration and a statement of acceptability, date next calibration is due if required by SNL, and printed name and signature of the person responsible for the calibration or who performed the calibration.

TP-219, Revision 0 and TP-229, Revision 0, were examined and found to include method and interval of calibration for each measuring and test device.

A three-ring notebook is maintained that contains all the calibration results for each instrument and is utilized as the historical basis for evaluating calibration intervals. As indicated by NER personnel this notebook is continuously updated and reviewed.

Corrective Action Report (CAR) No. 93-15 was issued by SNL personnel to identify the reporting of an out-of-calibration Sartorius scale (Serial No. 37020076). Discussions with SNL personnel indicated that a technical evaluation of this condition was completed as part of the disposition of the CAR.

Compliance to TP 93:

Calibration records for calibration of load cell, ID No. BLHK758, were examined for March 3, 1993. Records indicated calibration completed annually and against a laboratory standard load cell with a certified calibration traceable to National Institute of Standards and Technology (NIST). BLH load cell, Serial No. K758, was designated as the NER laboratory standard.

Laboratory notebook designated, "NRG, etc. Device Calibrations," contained appropriate calibration voltage information for the date December 27, 1990.

Compliance to TP 96:

Calibration records for calibration of pressure transducer (PT), Serial No. B22798, were examined for August 19, 1992 and September 22, 1993. NER personnel were questioned as to why the transducer was calibrated one month late and it was explained that the instrument was not used during that period of time. As the records indicated, upon reuse of this instrument it was found to be within calibration limits.

Pressure Transducer (PT) serial number and output voltages, as required in Steps 6, 7, 9 and 10, were recorded in laboratory notebook, "NRG, etc. Device Calibrations."

In addition to the above, an examination of training records was performed to assure that responsible personnel were adequately trained. Examination of training records to TP-219, Revision 0, and TP-229, Revision 0, for the following NER individuals was determined to be complete: Gregory N. Boitnott, Timothy N. Hill and James S. Noel. Review of training records to QAIP 20-3 for the following personnel were also determined to be complete: Randall Martin III, Peter Boyd and Timothy N. Hill.

(Block 10 continued) SURVEILLANCE CONCLUSIONS

Based on the results of this surveillance, it has been determined that NER is effective and adequate in the implementation of the control of M&TE and specimens. All documentation and M&TE reviewed was in conformance with procedural requirements. Personnel were very cognizant of the implementing procedures and conducted themselves professionally during the course of the surveillance.