



Department of Energy
 Yucca Mountain Site Characterization
 Project Office
 P. O. Box 98608
 Las Vegas, NV 89193-8608

WBS 1.2.9.3

AUG 20 1992

Michael D. Voegele
 Technical Project Officer
 for Yucca Mountain
 Site Characterization Project
 Science Applications International Corporation
 The Valley Bank Center, Suite 407
 101 Convention Center Drive
 Las Vegas, NV 89109

VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF CORRECTIVE ACTION REQUEST
 (CAR) YM-92-020 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION
 (YMQAD) AUDIT YMP-92-08 OF SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

The YMQAD staff has verified the corrective action to CAR YM-92-020 and
 determined the results to be satisfactory. As a result, the CAR is
 considered closed.

If you have any questions, please contact either Robert B. Constable at
 794-7945 or Robert H. Klemens at 794-7734.

R.E. Spence

Richard E. Spence, Director
 Yucca Mountain Quality Assurance Division

YMQAD:RBC-5106

Enclosure:
 CAR YMP-92-020

cc w/encl:

- K. R. Hooks, NRC, Washington, DC
- S. W. Zimmerman, NWPO, Carson City, NV
- D. K. Chandler, SAIC, Las Vegas, NV, 517/T-04
- N. J. Brogan, SAIC, Las Vegas, NV, 517/T-12
- J. R. Gonzales, SAIC, Las Vegas, NV, 517/T-28
- J. H. Rusk, MACTEC, Las Vegas, NV
- W. B. Simecka, YMP, NV

cc w/o encl:

- J. W. Gilray, NRC, Las Vegas, NV

Wm-11 Add: K. Hooks Ltr Encl
NH03
11
102.7

250104

YMP-5

9208250228 920820
 PDR WASTE
 WM-11 PDR

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

8 CAR NO.: YM-92-020
DATE: 2/5/92
SHEET: 1 OF 2
QA

CORRECTIVE ACTION REQUEST

1 Controlling Document T&MSS QAPD, Revision 4	2 Related Report No. Audit 92-08
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3 Responsible Organization SAIC	4 Discussed With D. Sorensen/G. Donaldson
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5 Requirement:

T&MSS QAPD, Revision 4, Section 12, Paragraph 12.2.B states in part, "Calibration standards shall have accuracy greater than the equipment being calibrated."

T&MSS Standard Practice Procedure SP 1.28, Revision 5, Page 27, Section 1100, states in part, "The (Calibration) Certificate shall contain the following:

- a. SAIC Purchase Order number.
- c. Name of person responsible for performing the calibration.
- j. If the item to be calibrated has a multiple range of operations, the certificate shall show at least five points of calibration... (con't)

6 Adverse Condition:

Several requirements to be recorded on the Certificate of Calibration of various M&TE are missing.

Most of the calibration certificates do not contain the accuracy of the Standard(s) used for the calibration. Without this information, it is not possible to verify and attest that this accuracy is greater than the equipment that was calibrated.

Additionally, the Certificates of Calibration for the following M&TE ID numbers did not contain the information required by items a, c, j, n, and p of Section 5 above.

09064*, 01578, 03353, 17919, 17948

* The certificate for this instrument contained 4 sheets of paper. Only three were traceable to the instrument.

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
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12 Required Actions: Remedial Extent of Deficiency Preclude Recurrence Root Cause Determination

13 Recommended Actions:

7 Initiator M. Diaz 1/30/92 <i>Mario Diaz</i> Date <u>2-5-92</u>	14 Issuance Approved by: QADD <i>[Signature]</i> Date <u>2/5/92</u>
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15 Response Accepted QAR Date	16 Response Accepted QADD Date
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17 Amended Response Accepted QAR <i>Mario Diaz</i> Date <u>3-31-92</u>	18 Amended Response Accepted QADD <i>[Signature]</i> for Date <u>4/6/92</u>
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19 Corrective Actions Verified QAR <i>Robert H. Clement</i> Date <u>8/12/92</u>	20 Closure Approved by: QADD <i>[Signature]</i> Date <u>8/19/92</u>
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CORRECTIVE ACTION REQUEST (Continuation Page)

5 Requirements (continued)

- n. Procedure/instruction with revision, used to perform the calibration.
- p. Statement that the item calibrated is within the specified accuracy in all operating ranges."

6 Adverse Condition (continued)

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CORRECTIVE ACTION REQUEST (Continuation Page)

CORRECTIVE ACTION RESPONSE TO CAR YM-92-020
3/11/92

1. Remedial Action

The following describes actions taken to correct specific deficiencies noted.

Part I. Accuracy of the Calibrating Device

ICN 1 to Revision 5 of SP 1.28 was issued on January 27, 1992 to require the vendor to submit to T&MSS the accuracy of the calibrating device. For each quality affecting calibration previously performed, the accuracy of the calibrating device will be compared to the accuracy of the equipment being calibrated to assure that the calibrating device has a greater accuracy.

James Harper and Dennis Sorensen of T&MSS are assigned the responsibility for completion of these actions. The completion date is May 29, 1992.

Part II. Certifications of Calibration

For each of the specific five M&TE items identified in part 6 of the CAR, the applicable certificate was evaluated by the T&MSS technical and QA inspection personnel against the information requirements. In some cases the alleged missing information was present on the certificate. In no case was all five items of information missing on all five cited certificates of calibration. Where information was actually missing, the information was located or actions are under way to made the certificate complete, e.g., the calibration service vendor will be requested to supply required information.

Three of the five devices cited on the CAR are non-quality affecting and, thus, no actions are required.

Concerning the requirements, in some cases items j. and k. do not apply, i.e., item j. applies only when an instrument has multiple ranges of operation and k. is applicable only if the instrument is digital.

The information that follows is the current status of the completeness and corrective action for the five specific M&TE certificates of calibration identified by item ID numbers:

Ltr L 92-1673-3/14/92

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

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CORRECTIVE ACTION REQUEST (Continuation Page)

<u>ID Number</u>	<u>Completeness/Corrective Action</u>
09064	All information was present except for the procedure and revision number and multiple calibration points. The purchase number information (PO 39-920013-94) was provided on associated vendor documentation directly traceable to the certificate of calibration. The vendor will not be requested to supply information because this instrument was reclassified as QA/NA. Therefore no corrective action is required.
01578	All information was present except for the (PO) Number. It is our contention that "Rated Accuracy" is equivalent to "Accuracy". The PO information (PO 39-920399-94) is now provided. This instrument was reclassified as QA/NA. Therefore no corrective action is required.
03353	All information is present except for procedure and revision. The certificate illustrates that item is accurate to the degree required by ANSI N323-1978. The PO did not require five points of calibration. This instrument was reclassified as QA/NA. Therefore there is no deficiency. No additional information is required.
17919	All information is provided either directly or indirectly by reference to MIL-STD-45662A. This instrument is a single range instrument; therefore, item j is not required. No corrective action is required.
17948	All information is presented except for the statement of accuracy statement and the vendor procedure and revision number used to perform the calibration; however the procedure was furnished as part of the records package supplied with the certificate. No action is required except that vendor will be required to state that the item calibrated has the required accuracy.

The individual assigned responsibility for assuring completion of these actions is Dennis Sorensen of T&MSS. The anticipated completion date is May 29, 1992.

2. Investigative Action

The following describes actions taken (or, to be taken) to determine the extent of the conditions adverse to quality.

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U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

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CORRECTIVE ACTION REQUEST (Continuation Page)

Part I. Accuracy of the Calibrating Device

For all quality affecting M&TE devices, an evaluation of accuracy of the calibrating standards relative to each calibrated device will be made. Additional evaluations will document the acceptability of the M&TE item and the data obtained through usage. NCRs will be prepared to document any case of deficient data (That data obtained from devices that were nonconforming to accuracy requirements).

The individuals assigned responsibility for completion of these actions are Dennis Sorensen and James B. Harper of T&MSS. The anticipated completion date is May 29, 1992.

Part II. Certificates of Calibration

The procurement documents and the certificates of calibration for all devices used and for those devices received where use is anticipated will be reviewed to determine if corrective action is necessary. Supplemental information will be obtained to augment or correct deficient certificates.

The individual assigned responsibility for completion of these actions is Dennis Sorensen of T&MSS. The anticipated completion date is May 29, 1992.

3. Root Cause Determination

Part I Accuracy of Calibrating Device

The controlling procedure for specifying certificate of calibration requirements misstated the accuracy requirement for calibrating standards. It requested the accuracy of the calibrated item.

Part II Certificates of Calibration

The root cause of these deficiencies is lack of attention to detail during the technical and QA review of procurement documents, the receipt inspection process and the process for acceptance of calibration services. During each of these activities, the accountable reviewer should confirm that each required certificate of calibration item has been translated to applicable documentation.

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CORRECTIVE ACTION REQUEST (Continuation Page)

4. Corrective Action to Preclude Recurrence

Part I Accuracy of Calibrating Devices

The controlling procedures, SP 1.28, was modified by ICN 1 to revision 5 to ensure that the instructions are clear with respect to the accuracy requirement for calibrating standards. No further action is required.

Part II Certificates of Calibration

SP 1.28 will be reviewed and modified as appropriate to assure clarity of the applicability and contents of the certificate of calibration. Personnel will be retrained on the procedure. The individuals assigned this action are R.S. Bostian and J.B. Harper. This action will be complete by April 15, 1992.

A checklist is now used by QA personnel during the receipt inspection process to assure that documentation of adherence to calibration requirements is complete. No additional action is required.

Response Approved:

DK Chandler
Responsible Manager

Date:

3/17/92

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

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CORRECTIVE ACTION REQUEST (Continuation Page)

CORRECTIVE ACTION RESPONSE TO CAR YM-92-020
3/11/92

Amended Response
3/26/92

1. Remedial Action

The following describes actions taken to correct specific deficiencies noted.

Part I. Accuracy of the Calibrating Device

ICN 1 to Revision 5 of SP 1.28 was issued on January 27, 1992 to require the vendor to submit to T&MSS the accuracy of the calibrating device. For each quality affecting calibration previously performed, the accuracy of the calibrating device will be compared to the accuracy of the equipment being calibrated to assure that the calibrating device has a greater accuracy.

James Harper and Dennis Sorensen of T&MSS are assigned the responsibility for completion of these actions. The completion date is May 29, 1992.

Part II. Certifications of Calibration

For each of the specific five M&TE items identified in part 6 of the CAR, the applicable certificate was evaluated by the T&MSS technical and QA inspection personnel against the information requirements. In some cases the alleged missing information was present on the certificate. In no case was all five items of information missing on all five cited certificates of calibration. Where information was actually missing, the information was located or actions are under way to make the certificate complete, e.g., the calibration service vendor will be requested to supply required information.

Three of the five devices cited on the CAR are non-quality affecting and, thus, no actions are required. However, these three devices (ID-09064, 01578, and 03353) were used in activities formerly classified as quality affecting. Since these same three devices were downgraded to QA/NA (See Grading Reports RFP1-A, RFP-2, RFP-3 and RFP-4) all resulting data is now designated as Non-Quality and will not be used in a quality affecting application.

Concerning the requirements, in some cases items j. and k. do not apply, i.e., item j. applies only when an instrument has multiple ranges of operation and k. is applicable only if the instrument is digital.

The information that follows is the current status of the completeness and corrective action for the five specific M&TE certificates of calibration

Ltr. dtd 3/26/92 - L92-1673

OFFICE OF CIVILIAN
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U.S. DEPARTMENT OF ENERGY
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CORRECTIVE ACTION REQUEST (Continuation Page)

<u>ID Number</u>	<u>Completeness/Corrective Action</u>
09064	All information was present except for the procedure and revision number and multiple calibration points. The purchase number information (PO 39-920013-94) was provided on associated vendor documentation directly traceable to the certificate of calibration. The vendor will not be requested to supply information because this instrument was reclassified as QA/NA. Therefore no corrective action is required.
01578	All information was present except for the (PO) Number. It is our contention that "Rated Accuracy" is equivalent to "Accuracy". The PO information (PO 39-920399-94) is now provided. This instrument was reclassified as QA/NA. Therefore no corrective action is required.
03353	All information is present except for procedure and revision. The certificate illustrates that item is accurate to the degree required by ANSI N323-1978. The PO did not require five points of calibration. This instrument was reclassified as QA/NA. Therefore there is no deficiency. No additional information is required.
17919	All information is provided either directly or indirectly by reference to MIL-STD-45662A. This instrument is a single range instrument; therefore, item j is not required. No corrective action is required.
17948	All information is presented except for the statement of accuracy statement and the vendor procedure and revision number used to perform the calibration; however the procedure and accuracy statement were furnished as part of the records package supplied with the certificate. No action is required.

2. Investigative Action

The following describes actions taken (or, to be taken) to determine the extent of the conditions adverse to quality.

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CORRECTIVE ACTION REQUEST (Continuation Page)

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The individuals assigned responsibility for completion of these actions are Dennis Sorensen and James B. Harper of T&MSS. The anticipated completion date is May 29, 1992.

Part II. Certificates of Calibration

The procurement documents and the certificates of calibration for all devices used and for those devices received where use is anticipated will be reviewed to determine if corrective action is necessary. Supplemental information will be obtained to augment or correct deficient certificates.

The individuals assigned responsibility for completion of these actions are Dennis Sorensen and James B. Harper of T&MSS. The anticipated completion date is May 29, 1992.

3. Root Cause Determination

Part I Accuracy of Calibrating Device

The controlling procedure for specifying certificate of calibration requirements misstated the accuracy requirement for calibrating standards. It requested the accuracy of the calibrated item.

Part II Certificates of Calibration

The root cause of these deficiencies is lack of attention to detail during the technical and QA review of procurement documents, the receipt inspection process and the process for acceptance of calibration services. During each of these activities, the accountable reviewer should confirm that each required certificate of calibration item has been translated to applicable documentation.

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4. Corrective Action to Preclude Recurrence

Part I Accuracy of Calibrating Devices

The controlling procedure, SP 1.28, was modified by ICN 1 to revision 5 to ensure that the instructions are clear with respect to the accuracy requirement for calibrating standards. No further action is required.

Part II Certificates of Calibration

SP 1.28 will be reviewed and modified as appropriate to assure clarity of the applicability and contents of the certificate of calibration. Personnel will be retrained on the procedure. The individuals assigned this action are R.S. Bostian and J.B. Harper. This action will be complete by May 29, 1992.

A checklist is now used by QA personnel during the receipt inspection process to assure that documentation of adherence to calibration requirements is complete. No additional action is required.

Management Approval

DK Chamberlain

DATE

3/27/92

Block 19 Corrective Action Verification

Verification of the actions required by Corrective Action Responses for the subject CAR was accomplished to ensure that committed actions were satisfactorily completed. Based upon the following corrective actions, no further action is deemed necessary and this CAR is considered closed.

1. In the accepted SAIC response, SAIC was to compare the accuracy of the calibrating devices to the accuracy of the equipment being calibrated for each calibration performed, (See Reference 1), to assure that the calibrating device had the greater accuracy. It should be noted that the rationale for determining the adequacy of the calibrating devices (reference standards) resulted from a meeting between R. Spence and J. Harper, and was based upon ANSI/IEEE Std 498-1985.

As a result of the comparison, 6 NCRs were written, covering the nonconformances which were found. The current status of the NCRs is shown below:

NCR #	STATUS
92-025	Closed --- Use as is.
92-026	NCR being closed following site visit, 8/12/92.
92-027	Open-Amersham providing back-up information by 8/20/92
92-028	Open-Amersham providing back-up information by 8/20/92
92-030	NCR being closed-- Meter downgraded to Non-QA use. (Reference 2)
92-031	Closed - Use as is.

Reference 1: Interoffice Memo, Sorensen to Harper, Mar.31, 1992

Reference 2: Interoffice Memo, Donaldson- E&RP Mgrs.Aug. 10, 1992

Corrective Action Verification (Cont.)

Page 2 OF 2

2. Verified completion of the evaluation (by the T&MSS technical and QA Inspection personnel) of Calibration Certificates to determine if the required information (per SP 1.28) is contained therein for each of the specific 5 M&TE ID numbers identified in Part 6 of the CAR.

3. Verified that SP 1.28 has been reviewed and modified (Rev. 6, June 30, 1992), as required, to assure clarity of the applicability and contents of the certificates of calibration. Verified that personnel were retrained. "Read and understand" forms were checked for completeness and found to be satisfactory.

Interviews were held with Bob Rinderman and Jim Harper and both appeared to be very knowledgeable of the CAR findings and corrective actions taken by SAIC.

Robert H. Klemens 8/12/92

Robert H. Klemens

Date



Science Applications International Corporation
An Employee-Owned Company

CDS:JEC:jh:M92-6546
WBS #1.2.5.4
QA

INTEROFFICE MEMORANDUM

DATE: March 31, 1992

TO: J. B. Harper, Manager, 517/T-38
T&MS Quality Assurance

FROM: C. D. Sorensen, Manager, 517/T-14 *C.D. Sorensen*
Radiological/Environmental Field Programs Department (R/EFPD)

SUBJECT: List of Quality Affecting Items for Response to CAR 92-020

During a meeting of R/EFPD and QA representatives for the purpose of developing a response to CAR 92-020, R/EFPD agreed to provide a list of quality affecting equipment to support the accuracy comparison commitment in the "Remedial Action" and "Investigative Action" sections of the response. During the meeting, it was repeatedly confirmed that providing the list to QA would constitute the only action required of R/EFPD in resolving the "accuracy" issue. The other R/EFPD action is to support the joint R/EFPD - QA review of existing calibration certificates and obtain information as necessary to correct specification discrepancies.

In accordance with our agreement, enclosed is a list of equipment subjected to quality affecting calibrations. We consider our action complete on the "accuracy" evaluation commitments in all sections of the CAR response.

The team effort to review the calibration certificate can be handled at your convenience. Please have your procurement representative contact George Donaldson at extension 4-7962 to arrange initiation of the review.

Enclosure:
As Stated

cc w/encl:
R. S. Bostian, 517/T-28
J. E. Clark, 517/T-14
G. A. Donaldson, 517/T-14
M. W. Harris, 517/T-29
J. A. Hitz, 517/T-14
K. B. Johnson, 517/T-38
F. H. Lofftus, 517/T-38
R. R. Rinderman, 517/T-38
C. D. Sorensen, 517/T-14
LV LRC

INTEROFFICE MEMORANDUM

Date: 10-Aug-1992 09:10am PDT
From: George Donaldson
DONALDSONG
Dept: Environ. & Regional Programs
Tel No: 295-6113

: Wendy Osenbaugh (OSENBAUGHW)
: Robert Rinderman (RINDERMANR)

: James Clark (CLARKJ)
: Dennis Sorensen (SORENSEND)

Subject: Downgrade of DMM to Non-QA

The Beckman DM15 digital voltmeter bar code SAIC16402, SN:50605195 is no longer used for quality affecting activities and is now considered non-quality affecting.

An investigation of usage of the subject multimeter show that this instrument was not used for any quality affecting calibrations or checks during the period of this calibration 11/15/90 to 11/15/91.

The investigation included M&TE documents and showed that the instrument has been inactive since 07/24/91. A review of performance check data sheets and calibration certificates show that no quality affecting performance checks or calibrations have been performed with this instrument.