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

WBS 1.2.11
QA: N/A

SEP 16 1993

William C. Kopatich
Technical Project Officer
for Yucca Mountain
Site Characterization Project
Raytheon Services Nevada
101 Convention Center Drive
Phase II, Suite P-250
Las Vegas, NV 89109

EVALUATION OF RESPONSE TO CORRECTIVE ACTION REQUEST (CAR) YM-93-078 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) AUDIT YMP-93-13 OF RAYTHEON SERVICES NEVADA (SCP: N/A)

The YMQAD staff has evaluated the response to CAR YM-93-078. The response has been determined to be satisfactory. Verification of completion of the corrective action will be performed after the effective date provided. Any extension to this date must be requested in writing, with appropriate justification, prior to the date. Please send a copy of extension requests to Nita J. Brogan, YMQAD/QATSS, 101 Convention Center Drive, Suite 640, Las Vegas, Nevada 89109.

If you have any questions, please contact either Robert B. Constable at 794-7945 or John S. Martin at 794-7881.

R. E. Spence

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-6064

Enclosure:
CAR YM-93-078

cc w/encl:
K. R. Hooks, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
D. J. Tunney, RSN, Las Vegas, NV

cc w/o encl:
J. W. Gilray, NRC, Las Vegas, NV
N. J. Brogan, YMQAD/QATSS, Las Vegas, NV

YMP-5

1028
WM-11
NH03
ADD: Ken Hooks 4 hr Encl.

ORIGINAL
THIS IS A RED STAMP

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

[6] CAR NO. YM-93-078
DATE: 7-21-93
PAGE: 1 OF 1
QA

CORRECTIVE ACTION REQUEST

[1] Controlling Document	[2] Related Report No.
PP-04-01, Rev. 1, Purchasing (Services)	Audit YMP-93-13
[3] Responsible Organization: RSN	[4] Discussed With: W. Kopatich

[5] Requirement:

PP-04-01, Rev. 1, paragraph 6.6.3 states in part, "...suppliers shall be qualified in accordance with QAP-7.1(Y)."

[8] Adverse Condition:

Contrary to the above, the supplier of calibration services for instrumentation used on YMP has not been qualified in accordance with QAP-7.1(Y).

Example:

HELCO, Inc.

[9] Does a significant condition adverse to quality exist? Yes__ No X If Yes, Circle One: A B C	[10] Does a stop work condition exist? Yes__ No X ; 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: ☒ Remedial ☒ Extent of Deficiency ☒ Preclude Recurrence ☒ Root Cause Determination

[13] Recommended Actions:

Identify the remedial action to be taken to correct the deficiency identified in Block 6.
Identify the extent of the condition and the planned corrective action to prevent recurrence.

[7] Initiator: Jean S. Martin Date 8/4/93	[14] Issuance Approved by: QADD [signature] for Date 08-06-93
[15] Response Accepted QAR [signature] Date 8-10-93	[16] Response Accepted QADD [signature] Date 8/9/93
[17] Amended Response Accepted QAR Date	[18] Amended Response Accepted QADD Date
[19] Corrective Actions Verified QAR Date	[20] Closure Approved by: QADD Date

ENCLOSURE

REV. 08/91

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

CAR NO. YM-93-078
DATE:
PAGE: OF
QA

CORRECTIVE ACTION REQUEST (Continuation Page)

CAR RESPONSE

ACTIONS TAKEN

Remedial:

All test equipment calibrated by Helco, Inc., are the weapons test equipment. All calibrations performed by Helco are traceable to NIST standards and per the ASTM procedures (see attached calibration certificates). All M&TE calibrated by organizations other than REECo will be qualified in accordance with RSN QAP-7.1(Y) procedure.

Helco, Inc., will be qualified in accordance with the QAP-7.1(Y) procedure by December 30, 1993, which is before the next scheduled calibration date due in February, 1994. If Helco, Inc. is found to be unqualified, another qualified supplier will be located and the calibration of the equipment will be checked. If the calibration of the equipment is within tolerance, no further action will be taken. If the calibration of the equipment is out of tolerance, all quality affecting work done with the equipment will be evaluated for acceptance.

Investigating Actions:

The only unqualified supplier who provided calibration services for equipment used in quality affecting testing is Helco, Inc.

Root Cause Determination:

All equipment calibrated by Helco, Inc. was weapons related test equipment, and YMP procedures were not applied in the selection of the supplier since this equipment was not used on YMP quality affecting work prior to April, 1993.

Corrective Action to Preclude Recurrence:

A letter, with return acknowledgement, will be issued to Materials Testing Laboratory (MTL) personnel advising them of the requirements for them to utilize equipment which has been calibrated by suppliers qualified in accordance with QAP-7.1(Y). This will be completed by 9/30/93.

Response Approved: _____ Date 9/10/93
Responsible Manager

Ltr dtd 9/7/93 - YMP:189:93

REV. 06/91

2291 WAYNOKA ROAD, UNIT
COLORADO SPRINGS, CO 80915

TESTING MACHINE VERIFICATION REPORT

TOMER: RAYTHEON SERVICES NEVADA

ADDRESS: NEVADA TEST SITE, MERCURY, NEVADA

MACHINE MFG: TINIUS OLSEN	DATE: 02-18-93
CAPACITY: 120,000 LBS.	RECALL: 02-18-94
TYPE: STD "L" UNIVERSAL Y-AXIS	REPORT: 93028-8
SERIAL NO: 111302-R	PROCEDURE: ASTM E-4

TEST DATA

VERIFIED RANGE 3,000 To 30,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF. STD
3000	3000	0	0	1
6000	6000	0	0	2
12000	12036	-36	0.30	2
8000	18054	-54	0.30	2
24000	24060	-60	0.25	2
30000	30000	0	0	2

VERIFIED RANGE 6,000 To 60,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
6000	6000	0	0	2
12000	12030	-30	0.25	2
24000	24072	-72	0.30	2
36000	36090	-90	0.25	2
48000	48000	0	0	2
60000	60000	0	0	2

VERIFIED RANGE 12,000 To 120,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
12000	12000	0	0	2
24000	24000	0	0	2
48000	48000	0	0	3
72000	71820	+180	0.25	3
96000	95760	+240	0.25	3
120000	119760	+240	0.20	3

VERIFIED RANGE To

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD

REFERENCE STANDARDS-VERIFIED PER ASTM E-74-TRACEABLE TO NIST-MIL STD 45662

J	SERIAL NUMBER	MANUFACTURED BY	VERIFIED BY	RECALL DATE	LAB NUMBER	CLASS A LOAD RANGE
1	3095-006	ACROTECH	NSTL	8-93	SJT.01/104562	0 TO 6K
2	3095-060	ACROTECH	NSTL	8-93	SJT.01/104562	6K TO 60K
3	3095-400	ACROTECH	NSTL	8-93	SJT.01/104562	40K TO 400K

2291 WAYNOKA ROAD, UNIT
COLORADO SPRINGS, CO 80915

TESTING MACHINE VERIFICATION REPORT

:TOMER: RAYTHEON SERVICES NEVADA

ADDRESS: NEVADA TEST SITE, MERCURY, NEVADA

MACHINE MFG: TINIUS OLSEN	DATE: 02-18-93
CAPACITY: 120,000 LBS.	RECALL: 02-18-94
TYPE: STD "L" UNIVERSAL	REPORT: 93028-7
SERIAL NO: 111302	PROCEDURE: ASTM E-4

TEST DATA

CAL#195800

VERIFIED RANGE 2,000 To 20,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF. STD
2000	1996	+4	0.20	1
4000	3990	+10	0.25	1
8000	7990	+10	0.13	2
2000	12000	0	0	2
16000	16000	0	0	2
20000	20000	0	0	2

VERIFIED RANGE 12,000 To 120,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
12000	12030	-30	0.25	2
24000	24050	-50	0.21	2
48000	48050	-50	0.10	3
72000	72000	0	0	3
96000	96000	0	0	3
120000	120000	0	0	3

VERIFIED RANGE To

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD

VERIFIED RANGE To

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD

REFERENCE STANDARDS-VERIFIED PER ASTM E-74-TRACEABLE TO NIST-MIL STD 45662

J	SERIAL NUMBER	MANUFACTURED BY	VERIFIED BY	RECALL DATE	LAB NUMBER	CLASS A LOAD RANGE
1	3095-006	ACROTECH	NSTL	8-93	SJT.01/104562	0 TO 6K
2	3095-060	ACROTECH	NSTL	8-93	SJT.01/104562	6K TO 60K
3	3095-400	ACROTECH	NSTL	8-93	SJT.01/104562	40K TO 400K

2291 WAYNOKA ROAD UNIT
COLORADO SPRINGS, CO 80915

TESTING MACHINE VERIFICATION REPORT

CUSTOMER: RAYTHEON SERVICES NEVADA	
ADDRESS: NEVADA TEST SITE, MERCURY, NEVADA	
MACHINE MFG: FORNEY	DATE: 02-18-93
CAPACITY: 300,000 LBS.	RECALL: 02-18-94
TYPE: QC-150-DR COMPRESSION	REPORT: 93028-9
SERIAL NO: 70198	PROCEDURE: ASTM E-4

TEST DATA

VERIFIED RANGE 3,000 To 30,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
3000	3000	0	0	1
6000	6000	0	0	2
12000	11970	+30	0.25	2
18000	17960	+40	0.22	2
24000	24000	0	0	2
30000	30000	0	0	2

VERIFIED RANGE 30,000 To 300,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
30000	30000	0	0	2
60000	60000	0	0	3
120000	120000	0	0	3
180000	179700	+300	0.17	3
240000	239400	+600	0.25	3
300000	299100	+900	0.30	3

VERIFIED RANGE To

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD

VERIFIED RANGE To

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD

REFERENCE STANDARDS-VERIFIED PER ASTM E-74-TRACEABLE TO NIST-MIL STD 45662

REF STD	SERIAL NUMBER	MANUFACTURED BY	VERIFIED BY	RECALL DATE	LAB NUMBER	CLASS A LOAD RANGE
1	3095-006	ACROTECH	NSTL	8-93	SJT.01/104662	0 TO 6K
2	3095-060	ACROTECH	NSTL	8-93	SJT.01/104662	6K TO 60K
3	3095-400	ACROTECH	NSTL	8-93	SJT.01/104662	40K TO 400K

2291 WAYNOKA ROAD, UNIT J
COLORADO SPRINGS, CO 80915

TESTING MACHINE VERIFICATION REPORT

CUSTOMER: RAYTHEON SERVICES NEVADA	
ADDRESS: NEVADA TEST SITE, MERCURY, NEVADA	
MACHINE MFG: TINIUS OLSEN	DATE: 02-18-93
CAPACITY: 400,000 LBS.	RECALL: 02-18-94
TYPE: SUPER "L" UNIVERSAL DIGITAL	REPORT: 93026-1
SERIAL NO: 156600	PROCEDURE: ASTM E-4

TEST DATA

CAL#195800

VERIFIED RANGE 800 To 8,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF. STD
800	800	0	0	1
1600	1600	0	0	1
3200	3200	0	0	1
4800	4795	+5	0.10	1
6400	6390	+10	0.16	2
8000	8000	0	0	2

VERIFIED RANGE 4,000 To 40,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
4000	4000	0	0	1
8000	8000	0	0	2
16000	16000	0	0	2
24000	23980	+20	0.08	2
32000	31930	+70	0.22	2
40000	39880	+120	0.30	2

VERIFIED RANGE 16,000 To 160,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
16000	16000	0	0	2
32000	32000	0	0	2
64000	63900	+100	0.16	3
96000	95800	+200	0.21	3
128000	127600	+400	0.31	3
160000	159400	+600	0.38	3

VERIFIED RANGE 40,000 To 400,000

MACHINE READING	REF.STD READING	ERROR LBS	ERROR %	REF STD
40000	40000	0	0	3
80000	80000	0	0	3
160000	159800	+200	0.13	3
240000	239200	+800	0.33	3
320000	319000	+1000	0.31	3
400000	399000	+1000	0.25	3

REFERENCE STANDARDS-VERIFIED PER ASTM E-74-TRACEABLE TO NIST-MIL STD 45662

REF STD	SERIAL NUMBER	MANUFACTURED BY	VERIFIED BY	RECALL DATE	LAB NUMBER	CLASS A LOAD RANGE
1	3095-006	ACROTECH	NSTL	8-93	SJT.01/104562	0 TO 6K
2	3095-060	ACROTECH	NSTL	8-93	SJT.01/104562	6K TO 60K
3	3095-400	ACROTECH	NSTL	8-93	SJT.01/104562	40K TO 400K