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

WBS 1.2.9.3
QA

AUG 0 9 1991

John H. Nelson
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-91-064 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) AUDIT YMP-91-06 OF THE TECHNICAL AND MANAGEMENT SUPPORT SERVICES

The YMQAD staff has verified the corrective action to CAR YM-91-064 and has determined the results to be satisfactory. As a result, the CAR is considered closed.

If you have any questions, please contact either Catherine E. Hampton at 794-7973 or A. E. Cocoros at 794-7242.

Catherine E. Hampton for
Donald G. Horton, Director
Yucca Mountain Quality Assurance Division

YMQAD:CEH-5140

Enclosure:
CAR YM-91-064

cc w/encl:
W. V. Macnabb, SAIC, Las Vegas, NV, 517/T-04
K. W. Moore, SAIC, Las Vegas, NV, 517/T-28
N. J. Brogan, SAIC, Las Vegas, NV, 517/T-08
K. R. Hooks, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV

cc w/o encl:
G. S. Boulding, SAIC, Las Vegas, NV 517/T-12
J. W. Gilray, NRC, Las Vegas, NV

102.7
WM-11
NH03

Ltr. Encl.
ADD: Ken Hooks, 1 1

ORIGINAL
THIS IS A RED STAMP

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

14CAR NO.: YM-91-064
DATE:
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
SP 1.37, Rev. 3	YMP-91-06

3 Responsible Organization	4 Discussed With
SAIC (T&MSS)	J. Harper

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days from iss.	J. Harper	N

5 Requirement:

SP 1.37, Revision 3, Paragraph 5.3.1 states, "Verify that the corrective action commitments have been satisfactorily implemented and completed."

6 Adverse Condition:

QFR No. 91-016, Block 22 reported, as a statement of verification of corrective action, "...that the RFPD/FFPD Equipment List was revised to contain the correct data." This was dated 6/18/91. A review of a copy of the Equipment List dated 6/17/91 still contained incorrect entries which were noted during the DOE Audit 91-06 conducted at the NTS.

7 Recommended Action(s):

Identify the remedial action(s) to be taken to correct the deficiencies noted in Block 6. Investigate the program process, activities or documentation to determine the extent and depth of similar deficient conditions on the CAR.

8 Initiator Date:	9 Severity Level -	13 Approved By: Date:
A. P. Cocoros, 6/21/91 6/21/91	1☐ 2☒ 3☐	OQA Catherine Hampton for 10/25/91

15 Verification of Corrective Action:

See Attached "Verification Activities CAR-YM-91-064

A Cocoros
7/29/91

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR [signature] Date 7/22/91	OQA Catherine Hampton for 8/16/91

ENCLOSURE

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

CAR NO.: YM-91-064
DATE:
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

7 Recommended Action(s) (continued)

Identify these deficiencies and provide the measures required to correct them. Identify the cause of the condition and the planned corrective action to prevent recurrence.

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

CAR NO.: 91-064
DATE: July 16, 1991
SHEET: 1 OF 1

CORRECTIVE ACTION REQUEST
(continuation sheet)

RESPONSE TO CORRECTIVE ACTION REQUEST YM-91-064
July 16, 1991

1. CORRECTIVE ACTION FOR DEFICIENT CONDITION # 1 of 1

(Improper verification of corrective action)

A. EXTENT OF DEFICIENCY: (Block 7 of the CAR requested an investigation of the program process, activities or documentation to determine the extent of the deficient condition.)

This deficiency is an isolated case. This conclusion is based upon the following:

1. The controlling procedure, SP 1.37, clearly requires verification of corrective action.

2. Verification of the corrective actions associated with QFR-91-016 is a case where field verification was necessary, but was not performed. The QFR identified specific deficiencies with respect to the M&TE List. The auditor, who was not the QFR originator, reviewed a revised list and was satisfied that editorial corrections were made.

3. A member of the QA Staff who normally performs field verification of corrective actions was not involved in the closure of the subject QFR.

B. ROOT CAUSE: The corrective action was improperly verified. In addition to reviewing the list of items for revision, the verifying QA staff member should have conducted a field verification of all items contained on the revised list to assure correctness of the revised list in total. The verifier, who was not the QFR originator, was unaware that the deficiency involved field items.

C. REMEDIAL ACTION: The incorrectly closed QFR-91-016 will remain closed since the deficiency is documented on this CAR and on CAR-YM-91-063. All corrective actions associated with QFR-91-016 will be re-verified (field verification of all items on the revised M&TE list will be conducted) and documented prior to closure of the two related CARs. A copy of the resultant closure documentation will be added to the QFR file to assure its completeness and correctness.

Proposed Completion Date: Complete.

D. CORRECTIVE ACTION TO PREVENT RECURRENCE:

The following actions have been taken:

1. The controlling procedure, SP 1.37, was revised to add an informational note concerning the applicability for performing field verification of deficient items.

2. The QA staff has been instructed by memo as to when field verification of corrective actions is considered necessary.

Proposed Completion Date: Complete.

Response Approved: W W Macnab — Responsible Manager — 7-17-91 — Date

Response Accepted: — QAR — 7/23/91 — Date

Response Accepted: Cathleen Thompson for — QQA — 7-25-91 — Date

SAIC
Science Applications International Corporation

JBH:sh:M91-152
WBS: 1.2.9.3
QA

INTEROFFICE MEMORANDUM

DATE: July 17, 1991

TO: T&MSS QA STAFF

FROM: James B. Harper Kent B Johnson for

SUBJECT: Field Verification of Corrective Action(s) for QFR/MCARs.

This memo is being issued as a result of [redacted] which identified an unacceptable condition related to field verification of corrective actions. SP 1.37, Revision 3 clearly states in paragraph 5.3.1 "Verify that the corrective action commitments have been satisfactorily implemented and corrected."

The objective evidence examined to verify that all actions have been completed should also be identified so as to make it very clear what was looked at to substantiate the closing of said deficiencies.

It is imperative that these actions are followed to the letter so as not to have a recurrence of this nature.

SP 1.37 is being revised to add an informational note concerning the applicability for performing field verification of deficient items.

Science Applications International Corporation

JBH:KBJ:ci:M91-819
WBS: 1.2.9.3
QA

INTEROFFICE MEMORANDUM

DATE: July 24, 1991

TO: J. H. Nelson, Project Manager

FROM: J. B. Harper, Manager
T&MSS QA
Kent B Johnson for

SUBJECT: CAR-91-064

This is to document completion of the remedial action associated with the response to CAR-91-064 dated July 17, 1991.

The T&MSS Radiological & Environmental Field Programs has conducted a field verification of all items listed on the M&TE List (enclosed). The verification found the revised list to be correct.

The T&MSS QA Department then conducted a field verification of the review M&TE list (SP 2.4) and the new Operating Equipment List (SP 2.5). The results of this verification are enclosed. This verification found the revised list to be correct.

Enclosure:
M&TE List

cc w/o encl:
J. W. Estella, 517, T-38
J. B. Harper, 517, T-38
M. W. Harris, 517, T-05
D. C. Sorenson, 517, T-14
CAR-91-064 File
QFR-91-016 File

ID#	DESC	MFG	MOD	SER NUM	RANGE	ACCURACY	S	C FREQ	C DUE	LOC	GROUP
16358	BAROMETER	AIR	AIR-HB-1/	9H1029	600-1100mb	±2%	I	A		4522	PRINCE
16497	BAROMETER	AIR	AIR-HB-1/	8E0572	600-1100mb	±2%	I	A		4522	PRINCE
16402	DIG MULTI MET	BECKMAN	DM15	50605195	VARIOUS	N/A	I	A	11/15/91	4522	CROFT
03030	ELECTRET REF.	RAD ELEC	N/A		N/A	±2v	A	A	4/25/92	4522	PRINCE
03029	ELECTRET REF.	RAD ELEC	N/A		N/A	±2v	R	A	7/25/91	VEND	PRINCE
03168	ELECTRET REF.	RAD ELEC	N/A	00626-0063	N/A	±2v	R	A	8/2/91	VEND	PRINCE
01578	FLOW CALIB	KURZ	1544		0-200LPM	±5%	A	A	12/14/91	V-B	PRINCE
03123	FLOW CALIB	HI-Q	AFC-400L	633	0-400LPM	±5%	I	A	4/24/92	V-B	PRINCE
01580	FLOW CALIB	RADECO	C812	1549	0-3CFM	±2%	I	A	4/24/92	V-B	PRINCE
03092	FLOW ELEMENT	MERIAM	50MJ10-1	731020 D5	0-0.18SCFM	±2%	A	A	1/14/92	4522	PRINCE
03093	FLOW ELEMENT	MERIAM	50MJ10-1	731020 D2	0-0.3SCFM	±2%	A	A	1/14/92	4522	PRINCE
03094	FLOW ELEMENT	MERIAM	50MJ10-9	731020 D3	0-0.3SCFM	±2%	A	A	1/14/92	4522	PRINCE
03095	FLOW ELEMENT	MERIAM	50MJ10-1	731020 D1	0-0.7SCFM	±2%	A	A	1/14/92	4522	PRINCE
03096	FLOW ELEMENT	MERIAM	50MW20-'	731020 D4	0-40SCFM	±2%	A	A	1/14/92	4522	PRINCE
03306	MANOMETER	MERIAM	DP2001	D10290111	0-20"H2O	±1.0%	A	A	1/14/92	4522	PRINCE
03307	MANOMETER	MERIAM	DP2001	D10290111	0-20"H2O	±1.0%	A	A	1/14/92	4522	PRINCE
09243	MASS WEIGHT	COLE PAR	1025-50	1025-50	3KG	±1.0%	I	A	5/7/92	V-B	PRINCE
09244	MASS WEIGHT	COLE PAR	1025-40	1025-40	1KG	±1.0%	I	A	5/7/92	V-B	PRINCE
09245	MASS WEIGHT	COLE PAR	1025-35	1025-35	500G	±1.0%	I	A	5/7/92	V-B	PRINCE
09246	MASS WEIGHT	COLE PAR	50681	1625	ANALYTICAL	±1.0%	I	A	4/29/92	V-B	PRINCE
01515	MERC BAROMET	EBERBACH	N/A	N/A		±0.3mb	I	A		M-SI	PRINCE
09065	MULTIMETER	FLUKE	8024B	164480363	VARIOUS		A	A	12/20/92	4522	CROFT
09239	MULTIMETER	FLUKE	8024B	4480365	VARIOUS		A	A	12/20/92	4522	CROFT
10734	ORIFICE CAL	GMW	GMW-25A	C518	0-100cfm	±0.1cfm	A	A	7/1/92	4522	CROFT
09068	OSCILLOSCOPE	PRECISION	1590A	D2416	VARIOUS	±7%	A	A	12/20/91	4522	PRINCE
01522	PSYCHROMETER	WEATHERME	5230	N/A	-30 +50C	±0.1°C	I	A		4522	CROFT
09064	PULSER	LUDLUM	500	61737	VARIOUS		R	A	1/11/90	V-B	PRINCE
16404	TEMP/RH STD	ROTRONIC	HYGRO QT	6717	-10 +50°C	±0.1°C	A	A	11/15/91	4522	CROFT
16511	THERMOMETER	ETRCO	61054		-1 +51°C		I	A		4522	CROFT

SUPPLEMENT I

ITEM	SAIC ID#	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE	CALIBRATION ID#	NOTES
LOCATION: NTS 60 (MAIN SITE)								
Precipitation Gauge	03233	Belfort	302	2289	NONE----------			See QFR-91-029
LOCATION: STATION #3 YUCCA MOUNTAIN								
Enclosure (Entire system)	16410 ----------							Not a calibratable instrument
Temperature Sensor	17924	Climatronics	100-093	3849	7/6/91	7/6/92	17924	--
Wind Direction	03130	"	100076	2465	9/19/90	9/19/91	03130	--
Wind Speed	03134	"	100075	2473	10/5/90	10/5/91	03134	--
Relative Humidity	17951	"	101669	241319	None	--	--	See QFR-91-029
Precipitation	17926	"	100097-2	330	None	--	--	"
LOCATION: NF6								
Continuous Air Sampler	03125	Radeco	--	--	--	--	--	--
Flow Meter (Totalizer)	03040	Rockwell	S-275	009498	5/9/91	5/9/92	03040	--
Radon Sampler	N/A*	Electret (Rad. Elect.)	SE	SE0438	None	--	--	Sensor Only-Not Calibratable
Radon Sampler	N/A*	Electret (Rad. Elect.)	SE	SE1242	None	--	--	" "
Radon Sampler	N/A*	Electret (Rad. Elect.)	SE	SE1369	None	--	--	" "

*NOT A UNIT OF PROPERTY - TRACKED BY SERIAL NUMBER

SUPPLEMENT I

ITEM	SAIC ID#	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE	CALIBRATION ID#	NOTES
LOCATION: MAIN SITE								
Particulate Monitor	09797	Wedding & Assoc.	PM10	0740880564U Unit #MS1PM110	*	*	*	Entire Unit - See also individual Timer Data
Prgm. Timer	16405	Intermatic	None Listed	None Listed	7/11/91	7/11/92	16405	--
Elpsd. Timer	17802	Autotrol	None Listed	None Listed	7/11/91	7/11/92	17802	--
Particulate Monitor	09799	Wedding & Assoc.	PM10	0740880565U Unit #MS2PM10	*	*	*	Entire Unit - See
Prgm. Timer	17570	Intermatic	None Listed	None Listed	None	--	--	Calibration No longer Required
Elpsd. Timer	17803	Autotrol	None Listed	None Listed	None	--	--	" "
*In Process At Time of Verification								
LOCATION: NFP								
HI-Vol Sampler (Wedding)	09798	MS5-TSP	T.S.P.					
Syst. # (Top of Motor Housing)	09798	"	"	07040880-557 UTS	7/10/91			
Timer	03226	"			N/A			
Elapsed Timer	03079	"			N/A			
Bottom (of Motor Housing)	03064	"			N/A			

SUPPLEMENT I

ITEM	SAIC ID#	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE	CALIBRATION ID#	NOTES
HI-Vol (Sampler (Wedding)	09800	MS6-TSP	T.S.P.					
System #	09800	"	T.S.P.	0740880-559 UTS	7/10/91			
Timer	03051	"			N/A			
Elapsed Timer	03052	"			N/A			
Bottom (of Motor Housing)	03065	"			N/A			
LOCATION: 4522								
Pressure Transducer	09296		E3188003		12/15/90	12/15/91		Ringard = 11/15/90 to 11/15/91
LOCATION: 4522								
Analytical Balance	16516	Sartorius	--	G5315/Ringard /SAIC	9/11/90 11/9/90	9/11/91 11/9/91	-- 16516	
Multimeter	09065	Fluke	--	-- /Ringard /SAIC	12/20/90 12/20/90	6/20/91 12/90	-- 09065	
Orifice Calibrator	10734	--	50 MM20-1	D. Munns	7/1/91	7/1/92	--	
Laminar Flow Air Element	03096	--	50MM20-1	731020-D4/D. Munns /SAIC	1/14/91 1/91	1/14/92 1/92	-- 03096	

SUPPLEMENT I

ITEM	SAIC ID#	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE	CALIBRATION ID#	NOTES
Air Flow Element	03095	--	50 MJ10-11	731020-D1/D. Munns /SAIC	1/14/91 1/91	1/14/92 1/92	-- 03095	
Pressure Transmitter (Manometer)	03306	Merriam	DP200-I	D. Munns SAIC	1/14/91 1/14/91	1/14/92 1/92	-- 03396	
Pressure Transmitter (Manometer)	03307	"	"	D. Munns SAIC	1/14/91 1/91	1/14/92 1/92	-- 03307	
Oscilloscope	09068	Precision	100 MH2?	2416/Ringard /SAIC	20/12/90 12/90	20/6/91 6/91*	--	*Hold Tag: Hold For Test 12/21/90, S/N 2416
Analytic Balance	03310	Ainsworth	--	--/Vendor	11/9/90	11/9/91**		**NCR and Limited Work Authorization (Not For Quality Affecting Work)
Balance	03104	Mettler	PC-8000	--/Vendor	None	--**		"

VERIFICATION FOR CAR YM-91-064

Corrective action specified in the accepted response to CAR YM-91-064 was verified as follows:

Extent of Deficiency

This deficiency can be considered as an isolated case based on the conclusions reported in response to CAR dated July 17, 1991.

Remedial Action

It was verified that all remedial action specified in the approved response has been implemented. The verification included a review of the M&TE List (SP 2.4) and Operating Equipment List (SP 2.5) performed by C. Warren during the verification of remedial action for CAR YM-91-063. The result of the re-verification performed was documented in a report issued by J. B. Harper to J. H. Nelson dated July 24, 1991, Subject: CAR YM-91-064, a copy of which is in the files of QFR 91-016 and this CAR.

Corrective Action to Prevent Recurrence

T&MSS Standard Procedure SP 1.37, Revision 3, was reviewed and it was verified that Interim Change Notice, ICN #1, added an informational note to the procedure concerning the applicability for performing field verification of deficient items.

Verified that an Inter-office Memorandum was issued to the T&MSS QA Staff dated July 17, 1991, by James B. Harper, Subject: Field Verification of Corrective Action(s) for QFR/MCARS, instructing the QA staff as to when field verification of corrective action is considered necessary.

8/5/91