OFFICE OF QUALITY ASSURANCE AUDIT REPORT FOR

THE AUDIT OF THE

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

QUALITY ASSURANCE PROGRAM

AUDIT NUMBER 90-I-01

CONDUCTED OCTOBER 15 THROUGH 19, 1990 (WASHINGTON, D.C.)

AND

OCTOBER 22 THROUGH 26, 1990 (LAS VEGAS, NEVADA)

Prepared by: _____ Date: 11/20/90
Stephen R. Dana
Audit Team Leader

_____ Date: 11/20/90
Charles C. Warren
Audit Team Leader

_____ Date: 11/20/90
Martha J. Mitchell
Lead Technical Specialist

Approved by: _____ Date: 11/20/90
Donald G. Horton, Director
Office of Quality Assurance

ENCLOSURE

cc w/encl:
C. P. Gertz, HQ (RW-20) FORS
D. G. Horton, HQ (RW-3) FORS
T. H. Isaacs, HQ (RW-4) FORS
R. A. Milner, HQ (RW-40) FORS
F. G. Peters, HQ (RW-50) FORS
Samuel Rousso, HQ (RW-10) FORS
J. D. Saltzman, HQ (RW-5) FORS
D. E. Shelor, HQ (RW-30) FORS
Bob Clark, HQ (RW-3) FORS
R. J. Brackett, TRW, HQ (RW-3) FORS
J. W. Gilray, NRC, Las Vegas, NV
K. R. Hooks, NRC, Washington, DC
R. R. Loux, NWPO, Carson City, NV
S. W. Zimmerman, NWPO, Carson City, NV
E. V. Tiesenhausen, Clark County, NV
Phillip Niedjielski-Eichner, Nye County, NV
Tom Colandrea, EEI, San Diego, CA
J. J. George, CER Corporation, Arlington, VA
M. J. Meyer, CER Corporation, Arlington, VA
W. F. Haslebacher, Weston, Washington, DC
A. W. Spooner, Weston, Washington, DC
R. J. Herbst, LANL, Los Alamos, NM
H. P. Nunes, LANL, Los Alamos, NM
L. J. Jardine, LLNL, Livermore, CA
D. W. Short, LLNL, Livermore, CA
R. E. Lowder, MACTEC, Las Vegas, NV
M. A. Fox, REECo, Las Vegas, NV
R. F. Pritchett, REECo, Las Vegas, NV
R. L. Bullock, RSN, Las Vegas, NV
M. J. Regenda, RSN, Las Vegas, NV
J. J. Brogan, SAIC, Las Vegas, NV, 517/T-08
J. H. Nelson, SAIC, Las Vegas, NV, 517/T-04
C. H. Prater, SAIC, Las Vegas, NV, 517/T-06
A. M. Whiteside, SAIC, Golden, CO
T. E. Blejwas, SNL, 6310, Albuquerque, NM
R. R. Richards, SNL, 6310, Albuquerque, NM
D. H. Appel, USGS, Denver, CO
L. R. Hayes, USGS, Las Vegas, NV

bcc w/encl:
A. E. Cocoros, MACTEC, Las Vegas, NV, M/S 402
J. H. Rusk, MACTEC, Las Vegas, NV, M/S 402
C. C. Warren, MACTEC, Las Vegas, NV, M/S 402
A. I. Arceo, SAIC, Las Vegas, NV, 517/T-06
E. P. Bryant, SAIC, Las Vegas, NV, 517/T-26
J. E. Clark, SAIC, Las Vegas, NV, 517/T-12
N. D. Cox, SAIC, Las Vegas, NV, 517/T-06
S. R. Dana, SAIC, Las Vegas, NV, 517/T-06
J. B. Harper, SAIC, Las Vegas, NV, 517/T-38
W. V. Macnabb, SAIC, Las Vegas, NV, 517/T-04
J. S. Martin, SAIC, Las Vegas, NV, 517/T-06
R. L. Weeks, SAIC, Las Vegas, NV, 517/T-06
M. B. Blanchard, YMP, NV
James Blaylock, YMP, NV
R. B. Constable, YMP, NV
M. R. Diaz, YMP, NV
W. R. Dixon, YMP, NV
V. F. Iorii, YMP, NV
E. H. Petrie, YMP, NV
W. A. Wilson, YMP, NV

EXECUTIVE SUMMARY

The Quality Assurance (QA) audit of the Office of Civilian Radioactive Waste Management (OCRWM) QA Program and quality-related activities was conducted over a two-week period, the first week at OCRWM Headquarters (HQ) and the second week at the Yucca Mountain Site Characterization Project Office (Project Office).

In the opinion of the audit team, the OCRWM QA program is adequate for the initiation of quality-affecting activities. However, specific elements of the QA program were identified as either indeterminate (due to lack of implementation) or ineffective. The following is a summary of those elements of the OCRWM QA program judged by the audit team to be ineffective.

1. Criterion 2 (QA Program)—The area of management assessments at both HQ and the Project Office was determined to be ineffective because no management assessments have been performed as required.

   Training was considered to be ineffective at the Project Office. The controls established for training of Project personnel does not effectively ensure that personnel are adequately trained prior to performing quality-affecting activities.

   Because the matrix that cross-references OCRWM procedures and the Quality Assurance Program Description Document (QAPD) to the Quality Assurance Requirements Document requirements is not complete, this element of Criterion 2 was ineffective.

2. Criterion 3 (Design Control)—The process established to control the technical baseline at both HQ and the Project Office was ineffective. However, the status of the technical baseline documents was indeterminate.

3. Criterion 16 (Corrective Action)—The current deficiency reporting and tracking system at HQ was ineffective.

4. Criterion 17 (QA Records)—Because the records procedure does not contain a description of the Quality Records Center which is of fundamental importance to the protection of records, this element at HQ was ineffective.

5. Criterion 18 (Audits)—Because the required overview (verification) activities have not been adequately implemented at HQ, this element of the QA program was ineffective.

Based on the above, the audit team recommends that the following actions take place prior to the start of site characterization activities.

1. OCRWM should take whatever actions are necessary to correct elements of its QA program identified as ineffective. Subsequent to these actions, the Office of Quality Assurance should conduct the following surveillances to verify effectiveness of the QA program elements identified above as ineffective:

   - Control of the technical baseline (including the change control process). (HQ)
   - Corrective action system. (HQ)
   - Quality Records Center. (HQ)
   - Program Overview (audits and surveillances). (HQ)
   - Preparation and review of the Technical Requirements for the Yucca Mountain Project (YMP/CM-0007). (Project Office)
   - Sandia National Laboratories (SNL) activities relative to YMP/CM-0007. (Project Office)
   - Training. (Project Office)

2. Closure of the following deficiencies identified during the audit:

   Corrective Action Report (CAR) No.

   HQ-91-002
   HQ-91-007
   HQ-91-008
   HQ-91-009
   HQ-91-011
   YM-91-005
   YM-91-006
   YM-91-007
   YM-91-008
   YM-91-009

It was apparent to the audit team that OCRWM staff, at both HQ and the Project Office, had put forth a considerable effort to bring their program into compliance with the QA program requirements. Also, the staff should be commended for the considerable effort put forth to correct potential deficiencies identified during the audit.

As a result of this audit, 19 CARs (12 to HQ and 7 to the Project Office) were issued to OCRWM. It should be noted that during the course of the audit, OCRWM was able to correct 29 remedial deficiencies (11 at HQ and 18 at the Project Office) identified by the auditors. These 29 concerns and the actions taken to correct them are described in this report.

1.0 INTRODUCTION

This report contains the results of a Quality Assurance (QA) audit of activities conducted by the Office of Civilian Radioactive Waste Management (OCRWM). The audit was conducted at the OCRWM Headquarters (HQ) facility in Washington, D.C., from October 15 through 19, 1990, and at the Yucca Mountain Site Characterization Project Office (Project Office) facilities in Las Vegas, Nevada, from October 22 through 26, 1990.

2.0 AUDIT PURPOSE/SCOPE

The purpose of this audit was to evaluate OCRWM quality-affecting activities associated with the Mined Geologic Disposal System (MGDS). The audit focused on near-term new site characterization activities.

The scope of the audit was to verify the establishment of program level technical baseline documents and to verify adequacy of the OCRWM QA program. This was done by verifying implementation and effectiveness of the program in place, as well as verifying compliance with requirements.

The following program elements were audited to assess compliance with the OCRWM Quality Assurance Program Description Document (QAPD), Revision 3:

1.0 Organization
2.0 Quality Assurance Program
3.0 Design Control
4.0 Procurement Document Control
5.0 Instructions, Plans, Procedures, and Drawings
6.0 Document Control
7.0 Control of Purchased Items and Services
8.0 Identification and Control of Materials, Parts, Components, and Samples (Project Office)
12.0 Control of Measuring and Test Equipment (Project Office)
13.0 Handling, Storage, and Shipping (Project Office)
15.0 Control of Nonconforming Conditions
16.0 Corrective Action
17.0 Quality Assurance Records
18.0 Audits
20.0 Scientific Investigation Control

The audit scope included a review and evaluation of the following technical activities:

1. <u>SCP Section</u> — <u>Title</u>

   8.3.1.5.2.1 Characterization of the Quaternary Regional Hydrology

   8.3.1.17.4.2 Location and Recency of Faulting Near Prospective Surface Facilities

2. Sample Management Facility (SMF) operations.

3. Establishment of the technical baseline.

In addition, the above technical activities were evaluated to determine adequacy in the following areas:

1. Qualification of technical personnel.

2. Understanding of procedural requirements as they pertain to technical activities.

3. Adequacy of technical plans and procedures.

4. Development of study plans and any related work products.

3.0 AUDIT TEAM PERSONNEL AND OBSERVERS

Responsibility	Individual
Audit Team Leader	Stephen R. Dana
Audit Manager	James Blaylock
Lead Auditor	Charles C. Warren
Auditors	Amelia I. Arceo
	Robert Clark
	A. Edward Cocoros
	Neil D. Cox
	Mario R. Diaz
	James J. George
	John S. Martin
	Arthur W. Spooner
	Richard L. Weeks
	Ardell M. Whiteside
Lead Technical Specialist	Martha J. Mitchell

Technical Specialists	E. Paul Bryant
	Marc J. Meyer
	William Haslebacher
Observers	Kenneth Hooks (Lead) U.S. Nuclear Regulatory Commission (NRC)
	William Belke NRC
	Robert Brient Southwest Research Institute (SWRI)/NRC
	Jim Conway NRC
	John Gilray NRC
	Bruce Mabrito SWRI/NRC
	R. James Brackett TRW
	Thomas Colandrea EEI
	Phillip Niedjielski-Eichner Nye County, Nevada
	Englebrecht Von Tiesenhausen Clark County, Nevada
	Susan W. Zimmerman Nevada Waste Project Office (NWPO)

4.0 SUMMARY OF AUDIT RESULTS

4.1 Statement of Program Effectiveness

In the opinion of the audit team, the OCRWM QA program is adequate for the initiation of quality-affecting activities. However, OCRWM should take whatever actions are necessary to correct the following elements of the QA program identified as ineffective:

- Control of the technical baseline (including the change control process). (HQ)
- Corrective action system. (HQ)
- Quality Records Center. (HQ)
- Program Overview (audits and surveillances). (HQ)
- Preparation and review of the Technical Requirements for the Yucca Mountain Project (YMP/CM-0007). (Project Office)
- Training. (Project Office)

The specific elements of the QA program identified as either indeterminate (due to lack of implementation) or ineffective are noted below:

1. Criterion 1 (Organization)—The organizational structure required to implement this element is in place at both HQ and the Project Office. However, because the Quality Assurance Controls Document (QACD), Revision 1 (at HQ), was issued just prior to the audit exit, the overall effectiveness at HQ was indeterminate.

2. Criterion 2 (QA Program)—The area of management assessments at both HQ and the Project Office was ineffective because management assessments have not been performed as required. Deficiency Report (DR) No. 90-021 at HQ and Standard Deficiency Report (SDR) No. 481 at the Project Office document that management assessments have not been performed.

   Training was ineffective at the Project Office. The controls established for training of Project personnel does not effectively ensure that personnel are adequately trained prior to performance of quality-affecting activities.

   A matrix that cross-references OCRWM procedures and the QAPD, and Quality Assurance Requirements Document (QARD) requirements was not complete; therefore, this element was ineffective.

   Effectiveness of the graded QA process at both HQ and the Project Office could not be determined because the QACD, Revision 1, and three grading packages at the Project Office were not issued until just prior to the audit exit. Therefore, the overall effectiveness of this element was indeterminate.

3. Criterion 3 (Design Control)—The process, established to control the technical baseline at both HQ and the Project Office, was ineffective. However, the status of the technical baseline documents was indeterminate.

4. Criteria 4 and 7 (Procurement Document Control and Control of Purchased Items and Services)—The process for issuance of procurement documents and control of purchased services at HQ was determined to be effective. A complete evaluation of the overall effectiveness at the Project Office could not be performed because of a lack of implementation to Quality Management Procedure QMP-04-02, Revision 0, "Yucca Mountain Project Office Procurement Actions."

5. Criterion 5 (Plans, Procedures, Instructions, and Drawings)—With the exception of a few isolated concerns, this element was considered effective at both HQ and the Project Office.

6. Criterion 6 (Document Control)—This element was considered to be effective at HQ. During the audit the Project Office issued a letter (Gertz to Nelson, dtd. 10/25/90) delegating responsibility for issuing, tracking, and maintaining all controlled documents to Technical and Management Support Services (T&MSS) as a participant. Upon issuance of the letter, control of documents was no longer within the audit scope at the Project Office.

7. Criteria 8, 12, and 13 (Identification and Control of Materials, Parts, Components and Samples; Control of Measuring and Test Equipment; and Handling, Storage, and Shipping)—The audit team was unable to determine effectiveness for Criteria 8 and 13 due to the limited implementation at the time of the audit.

   Upon review of QA Grading Report No. RSE-007, Revision 0, "SMF Operations" (issued during the audit), the audit team verified that Criterion 12 had been graded as not applicable. Therefore, this element of the QA program was determined as not applicable to the scope of the audit.

8. Criterion 15 (Control of Nonconforming Items)—This criterion was determined as not applicable at HQ. The effectiveness of this element at the Project Office was indeterminate due to the issuance of Corrective Action Request (CAR) No. YM-91-004.

9. Criterion 16 (Corrective Action)—The current deficiency reporting and tracking system at HQ was ineffective. The corrective action program at the Project Office was effective. However, effectiveness of the trending program and the corrective action program per Quality Assurance Administrative Procedure QAAP 16.1, Revision 2 (issued just prior to the audit), was indeterminate due to lack of implementation.

10. Criterion 17 (QA Records)—This element at HQ was ineffective because procedure Implementing Line Procedure ILP-12.17.01, Revision 0, does not contain a description of the Quality Records Center (QRC). The HQ Central Records Facility (CRF) was determined to be outside the scope of this audit and was not evaluated.

    The CRF at the Project Office was effective. Effectiveness of the Local Records Center (LRC) to Branch Technical Procedure BTP-YMP-001, Revision 0, could not be determined because of limited implementation.

11. Criterion 18 (Audits)—Because the required overview (verification) activities have not been adequately implemented at HQ, this element of the QA program was ineffective.

    External audit coverage at the Project Office was effective. However, due to the lack of internal audits performed at the Project Office (addressed in CAR 90-01), this element, overall is marginally effective.

12. Criterion 19 (Computer Software)—This element of the QA program was not evaluated at the Project Office due to open SDR No. 449. All Project Office quality- affecting computer software activities are on hold until resolution and closure of the SDR. This criterion was determined as not applicable at HQ.

13. Criterion 20 (Scientific Investigation Control)—This element at both HQ and the Project Office was effective.

4.2 Summary of Programmatic Activities

1. Criterion 1—The auditors interviewed the following OCRWM personnel to determine compliance with requirements of the QAPD, Revision 3, Section 1.

   At HQ: the OCRWM Director; Office of Quality Assurance (OQA) Director; the Office of Systems and Compliance (OSAC) Associate Director; the Office of Programs and Resources Management (OPRM) Associate Director; and the Director of the Analysis and Verification Division.

   At the Project Office: the Project Manager; the Deputy Project Manager; the QA Division Director; the (Acting) Director of the Engineering and Development Division (E&DD); the Director of the Project and Operations Control Division (POCD); and the Director of the Regulatory and Site Evaluation Division (R&SED).

2. Criterion 2—At HQ the auditors interviewed D. Shelor, W. Lemeshewsky, J. Hale, S. Brocoum, and M. Mozumder. Personnel qualification records were reviewed for D. Shelor, J. Hale, B. Lemeshewsky, W. Stringfield, B. Dankar, R. Stein, J. Parker, M. Senderling, K. Mutrega, S. Brocoum, J. Kimball, M. Mozumder, S Van Camp, J. Stockey, K. Mihm, I. Atterman, B. Scott, P. Kumar, J. Richardson, T. Trong, H. Cadoff, H. Cleary, E. Benz, D. Michlewicz, D. Fenster, A. Spooner, F. Shaffer, C. Weber, C. Walenga, and N. Frank.

   At the Project Office the auditor reviewed and verified: (1) training plans; (2) letters (YMP:CGA-2216, YMP:CGA-3517, POCD:CGA-4435, and NNA-1990-3990) which substantiate that periodic evaluations of the training program have been performed; and (3) personnel qualification and training records for G. Dymmel, D. Harrison-Geisler, W. Dixon, J. White, R. Barton, R. Murthy, C. Fridrich, D. Dobson, J. Gardiner, G. Braun, J. Owens, R. Gates, L. Roy, R. Cameron, and J. Caldwell. Lead Auditor/Auditor qualifications files were verified for N. Cox, A. Arceo, F. Kratzinger, S. Dana, R. Klemens, R. Powe, R. Maudlin, C. Warren, R. Weeks, J. Martin, K. McFall, J. Blaylock, M. Diaz, R. Constable, E. Cocoros, and K. Tyger.

3. Criterion 3—At HQ the auditor reviewed QAAP-3.1, Revision 0; QAAP-3.5, Revision 0; and QAAP-3.7, Revision 0. The auditor reviewed and verified: (1) Technical Document Management Plan, Revision 3; (2) Waste Management System Requirements (WMSR), Volume I, Revision 1; (3) WMSR Volume III, Revision 0; and (4) WMSR Volume IV, Revision 1. The auditor interviewed D. Shelor, W. Lemeshewsky, and M. Senderling.

   At the Project Office the auditor reviewed QMP-03-09, Revision 0; QMP-06-04, Revision 0; and Administrative Procedure AP-6.1Q, Revision 1. The auditor reviewed and verified YMP/CM-0007, Revision 0 and 1. The auditor interviewed T. Petrie, R. Barton, J. White, J. Waddel, and G. Dymmel.

4. Criterion 4 and 7—At HQ the auditors reviewed and verified: (1) procurement packages for CER Corporation, KOH, and TRW; and (2) program guidance letters for affected organizations. The auditors interviewed J. Bresee.

   At the Project Office the auditors reviewed and verified the procurement package for T&MSS. The auditors interviewed W. Dixon.

5. Criterion 5—At HQ the auditor verified that Attachment V (standard format) contained in QAAP 5.1 and QAAP 5.2 meets the requirements of the QAPD, Revision 3, Section 5.

At the Project Office the auditor reviewed procedures QMP-17-01 and BTP-YMP-001 to verify that quantitative and qualitative acceptance criteria had been prescribed. Procedures QMP-02-09, AP-3.5Q, AP-3.3Q, and BTP-YMP-001 were reviewed for conformance to the QAPD, Revision 3, Section 5, Paragraph 5.0.

6. Criterion 6—At HQ the auditor reviewed procedure history files for QAAP 2.5, QAAP 18.2, and ILP-12-17-01, and the associated Document Review Sheets (DRSs) for each procedure. Minor changes processed for procedures QAAP 5.1, QAAP 6.1, and QAAP 16.1 were reviewed and verified for conformance to the definition in QAAP 5.1 and QAAP 5.2. Manuals (Nos. 1, 2, 5, 22, 44, 46, 96, 116, 122, 201, 204, 208, 229, 288) were reviewed for conformance to QAAP 6.1 requirements. The auditor verified that Document Control procedures include requirements stated in the QAPD, Revision 3, Section 6, and that controlled documents handled by DOE/RW-223, Revision 3, "Program Change Control Board," are listed in the controlled document register.

   At the Project Office the auditor reviewed history files for procedures QMP-02-09, AP-3.5Q, AP-3.3Q, and BTP-YMP-001. During the audit it was determined that control of documents has been delegated to T&MSS in its participant role.

8. Criterion 8—This criterion was applicable only to audit activities at the Project Office. All audit verification activities were performed at the SMF. Using requirements of the QAPD, Revision 3, Section 8, and BTP-SMF-001, Revision 0, the auditor verified job descriptions for each position at the SMF; and whether the facility access log was utilized. Sample Collection Reports were examined, along with their associated records, and bar code labels on sample containers were verified per BTP-SMF-007, Revision 0.

9. Criterion 13—This criterion was applicable only to audit activities at the Project Office. The auditors verified that BTPs have been written to meet the requirements of the QAPD, Revision 3, Section 13. The only quality-affecting samples that are located at the SMF are samples collected by the U.S. Geological Survey (USGS) for paleoclimatology studies.

10. Criterion 15—At the Project Office the auditor reviewed QMP-15-01, Revision 2. The auditor verified: (1) the Nonconformance Report (NCR) Log (110 NCRs have been assigned from 2/19/86 to 2/13/90), and (2) that conditional releases were not required for NCRs WMPO-110, 109, and 107, and a conditional release was accepted for NCR WMPO-101

    This criterion was determined as not applicable to activities at HQ.

11. Criterion 16—At HQ the auditor reviewed QAAP-16.1, Revisions 0 and 1. The auditor verified: (1) the CAR/DR/OBS Tracking Data Dump log; (2) DRs 89-002, 89-003, 80-004, 89-005, 89-006, 89-007, 89-008, 89-009, 89-010, 89-011, 89-012, 89-013, 89-014, 89-015, 89-017, 89-018, 89-019, 89-020, 89-021, 89-022, 89-023, 89-024, 89-025, 89-026, 89-027, 89-028, 89-029, 80-030, 89-031, 89-032, 89-033, 89-034, 89-035, 89-036, 90-001, 90-002, 90-003, 90-004, 90-005, 90-006, 90-007, 90-008, 90-009, 90-010, 90-011, 90-012, 90-013, 90-014, 90-015, 90-016, 90-017, 90-018, and 90-019 (untimely responses for 28 items, untimely response evaluation for 44 items, and untimely verification/ closeout for 23 items) (reference CAR No. HQ-91-008); and (3) CARs 89-001, 89-002, and 90-001.

    At the Project Office the auditor reviewed QMP-16-01, Revision 0, QMP-16-03, Revision 1, and QAAP-16.1, Revisions 0 and 1. The auditor verified: (1) Deficiency Evaluation Reports (DERs) 050, 051, 052, 053, 054, and 055; (2) CAR Logs for FY 1986 through 1991; (3) CARs 89-001, 90-001, 90-002, 90-003, 90-004, YM-91-001, YM-91-002, and YM-91-003; and (4) SDRs 309, 350, 352, 449, 459, 473, 474, 475, 476, 477, 481, 484, 489, 497, 498, 508, 509, 548, 550, 551, 568, 569, 570, 579, 580, 581, 582, 522, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 596, 598, and 599.

12. Criterion 17—At the Project Office the auditor reviewed BTP-YMP-001, Revision 0; BTP-RMD-002, Revision 1; and QMP-17-01, Revision 1. The auditor verified: (1) DOE/YMP/90-4, Revision 0 (individual record document accession numbers NNA.900829.0211 to NNA 900917.0147); QMP-04-02, Revision 0; QMP-06-04, Revision 1; QMP-07-04, Revision 1; QMP-10-03, Revision 1; QMP-17-01, Revision 2; and QMP-18-02, Revision 2, for listing of QA records generated through implementation of the documents; (2) one-of-a-kind documents (accession numbers NNA.880503.0016, NNA.881115.0016, NNA.881128.0011, and NNA.890901.0139) for proper maintenance at the security archives; (3) the records list for records generated as a result of Project activities (letter Nos. YMP:ECR-162, YMP:ECR-163, YMP:ECR-165, YMP:ECR-164, YMP:ECR-275, YMP:ECR-260, and YMP:ECR-274); the list of signatures and initials of personnel authorized to authenticate records (C. Gertz, E. Wilmot, D. Morgan, D. Dobson, C. Muntean, C. Aiello, and J. Mukherjee; (4) that QA records are suitably controlled prior to turnover by POCD, ED&D, R&SED, and the QA Division ; (5) that YMP/CM-0007 document records package was transmitted to the LRC; and (6) the Incoming and Outgoing Work Log and the Batch Tracking Log at the CRF. The auditor interviewed D. Dobson, S. Mattson, D. Horton, and D. Keller.

At HQ the auditor reviewed QAAP-17.1, Revision 0 and ILP-12.17.01, Revision 0. The auditor verified: (1) that procedures ILP-12.17.01, ILP-22.3.1, ILP-22.3.2, ILP-22.3.3, QAAP-2.1, QAAP-2.5, QAAP-2.6, QAAP-2.7, QAAP-3.1, QAAP-3.3, QAAP-3.5, QAAP-4.1, QAAP-16.1, QAAP-17.1, and QAAP-18.1 define the minimum QA records generated; (2) that the records dealing with review comments for the procedures in Item 1 (above) were legible, identifiable, accurate, and complete; (3) that a list was received by the QRC from RW-1, RW-2, RW-3, RW-10, RW-20, RW-30, RW-40, AND RW-50, which identifies personnel who are authorized to authenticate record packages; and (4) that QA records generated during implementation of the procedures identified in item 1 (above) are controlled from time of completion to time of storage. The CRF was determined as outside the audit scope; therefore, CRF activities were not verified.

13. Criterion 18—At HQ the auditor reviewed QAAP-18.1, Revision 1, and QAAP-18.2, Revision 1. The auditor verified: (1) the FY 90 audit schedule, dated 09/28/89; and (2) record packages for Surveillance Report (SR) Nos. SR-90-001, SR-90-002, SR-89-018, SR-89-017, and SR-89-016. (Reference CAR No. HQ-91-011).

    At the Project Office the auditor reviewed QAAP-18.1, Revision 1 and QMP-18-02, Revision 1. The auditor verified: (1) FY 90, Revisions 3, 4, and 5, and FY 91, Revision 0, audit schedules; (2) audit record packages for Audit Nos. 90-02, 90-06, and 90-07; (3) FY 90, Revision 0, and FY 91, Revision 1, surveillance schedules; and (4) surveillance record packages for Surveillance Nos. YMP-SR-90-039, YMP-SR-90-021, YMP-SR-90-034, YMP-SR-90-040, YMP-SR-90-037, and YMP-SR-90-031.

14. Criterion 20—See Section 4.3, Summary of Technical Activities, for a summary of this criterion.

4.3 Summary of Technical Activities

1. Study Plan Review

The study plan review process was technically evaluated during the audit at both HQ and the Project Office. This was done in conjunction with the programmatic audit of Criterion 20. The primary emphasis for the technical portion of the audit was the Midway Valley study plan prepared by SNL and the Calcite/Silica activity, which is part of a USGS Study Plan. As a reference, additional study plans were included in the technical evaluation. The following Study Plans were involved in the evaluation during the audit:

NOTE: The following abbreviations have been used to indicate the type of evaluation and the location:

T - technical evaluation
P - programmatic evaluation
HQ - Headquarters
PO - Project Office

8.3.1.17.4.2—Location and Recency of Faulting near Prospective Surface Facilities. [SNL, referred to as Midway Valley] (P&T, HQ; P&T, PO)

8.3.1.5.2.1—Characterization of the Quaternary Regional Hydrology [USGS Activity 5 of this study plan is "Studies of Calcite and Opaline-Silica Vein Deposits," referred to as Calcite/Silica] (P&T, HQ; P&T, PO)

8.3.1.15.1.2—Laboratory Thermal Expansion Testing. [SNL] (P, HQ; P&T, PO)

8.3.1.17.3.3.2—Ground Motion from Regional Earthquakes and Underground Nuclear Explosion [SNL] (P, HQ; P&T, PO)

8.3.1.5.1.4—Paleoenvironmental History of the Yucca Mountain Region [USGS] (P, HQ; P&T, PO)

8.3.1.2.2.1—Unsaturated Zone Infiltration [USGS] (P, HQ; P&T, PO)

8.3.1.2.2.7—Hydrochemical Characterization of the Unsaturated Zone [USGS] (P, HQ; P&T, PO)

8.3.4.2.4.1—Characterization of Chemical and Mineralogic Changes in the Post-emplacement Environment [Lawrence Livermore National Laboratory] (P, HQ; P&T, PO)

8.3.1.17.4.1—Historical and Current Seismicity [USGS] (P, PO)

Those study plans evaluated during the technical portion of the audit differed in some cases from those evaluated programmatically during the audit.

The procedures for Study Plan Review are AP-1.10Q for the Project Office and ILP-22.3.1 at HQ.

No significant difficulties or technical concerns were identified during the audit in this area. The technical team acknowledges the many hours spent in administrative coordination that was necessary to complete the review cycle for each study plan. The technical staff was knowledgeable of the activities planned in the studies, the procedures in use, and the review process. During the past year there has been considerable and consistent improvement in documentation of the review process and in the consistency of the technical review itself.

The documents that result from the review process are technically consistent from document to document and meet the Level of Detail Agreement (LODA) with the NRC. In discussion with the staff during the audit, there was considerable variation in what the commitment to the LODA is (i.e., whether the LODA is a requirement or simply guidance). If the LODA is a requirement, is the information needed for appropriate technical review in the document or is the level of detail attained through the review process? If the review process is radically changed, then these questions need to be addressed in the design of the new review process, or, potentially, the quality of the review will be compromised.

The verification process, which establishes the agreed upon comment resolutions, has improved along with other aspects of the review process. Strength in this area ensures that cases in which (1) the comment resolution does not appear to fully address the original comment or (2) where the final text change does not reflect the comment as resolved, are satisfactorily resolved and do not jeopardize the review.

The review process for study plans is effective as currently implemented. This is consistent with the evaluation performed during the programmatic portion of the audit.

2. Technical Baseline Document Development and Approval

Technical baseline document development and the review process were evaluated by the technical team at both HQ and the Project Office. The technical baseline documents evaluated or utilized as part of the audit at HQ were as follows:

- WMSR Volume I, Revision 0
- WMSR Volume I, Revision 1
- WMSR Volume III, Revision 0
- WMSR Volume IV, Revision 0
- WMSR Volume IV, Revision 1
- Waste Management System Description (WMSD), Revision 0
- Technical Document Management Plan, Revision 3, for WMSR documents

The documents listed below are the procedural control documents for the technical baseline:

- QAAP 3.1—Technical Document Review
- QAAP 3.5—Preparation of Technical Documents
- QAAP 3.6—Technical Document Input Control
- QAAP 3.7—Interface Control
- ILP-30.3.2—Study Plan Review

The review packages from the document reviews were also part of the information audited.

Documents utilized in the Project Office section of the audit were as follows:

- Technical Requirements for the Yucca Mountain Project (Midway Valley Trenching and Calcite/Silica Activities) (YMP/CM-0007), Revision 1. Note: this document (YMP/CM-0007) is the current technical baseline at the Project Office and is designed to be limited to the technical requirements only to the extent that is needed for the Midway Valley and Calcite/Silica activities.

- Plan for Development of the Midway Valley and Calcite/Silica Activity Requirements.

- Interface Memorandum of Understanding contract number DE-AC08-87NV10576.

- QMP-06-04, Revision 0, "Project Office Document Development, Review, Approval and Revision Control Process."

The appropriate document review packages were also part of the audited information.

The evaluation was impacted by the unavailability of the QACD, Revision 1, during the HQ portion of the audit, and the unavailability of the Grading Package for YMP/CM-0007. The Grading Package at the Project Office became available just prior to the audit exit. This situation did not invalidate or negate the effectiveness of the audit process.

The technical audit team is concerned that the QACD and the Grading Package impose different controls on the same document system at the two organizations. The review cycles and level of review control are different at the two locations.

The review process for YMP/CM-0007 at the Project Office was ineffective. Not all of the technical review criteria were used in the review process. No single reviewer could be expected to have the background and skills necessary to fully review the document. (Reference Car No. YM-91-009).

The technical audit team is concerned about the level of control of interfaces to the technical baseline as an entity. This includes the inputs and outputs at all levels of the baseline hierarchy. There was no master list of reference documents established for the WMSR documents, which prevents complete flow-down verification. There is also a concern for how elements from the U.S. Department of Energy (DOE) Orders enter the requirements system. As an example, DOE imposed systems engineering requirements from DOE Order 4700.1A in WMSR, Volume I.

The technical audit team is concerned with establishment and control of the organizational interfaces associated with the development and use of the technical baseline. This is most apparent at the Project Office, where sections of the baseline document have been prepared by a participant organization without separate acceptance review or acceptance criteria.

During staff interviews, the audit team encountered problems with the level of understanding of individual staff, relative to methods and procedures being used in development of the technical baseline. This problem was more prevalent at HQ. There was often a lack of understanding of how failure to comply with procedures would impact the technical product at both HQ and the Project Office. Both staff groups had conceptual problems with establishment of interfaces, how to appropriately verify flow down of requirements, and the importance of the control of inputs. Project Office staff had difficulty explaining how the full technical baseline at the Project Office would be developed from the existing document, and whether or not changes to the controls for the baseline would be required. If changes were made to the controls, there was little understanding of how these changes, once made, would have to be implemented.

The process that developed the technical baseline documents is ineffective and the status of the documents themselves is indeterminate until the identified adverse conditions are corrected. The design of the technical baseline as a system appears to be sufficient to provide the required information to other program and Project functions.

The technical audit team believes that technical baseline development requires rethinking and greater coordination between the two locations than has taken place. The engineering groups have taken immediate action in correcting the deficiencies identified, as is evidenced by the items corrected during the audit (reference Sections 6.2 and 6.3 of this report). This should be commended. In addition, a very positive action in the system engineering areas is the Systems Engineering Training Course developed for the Project. Technical training of a non-procedural nature, which is available to a broad spectrum of the technical staff, appears to be an important factor in implementing the technically-driven aspects of the project.

3. Sample Management Facility (SMF)

Activities at the SMF were evaluated during the Project Office section of the audit in the following areas:

- o Sample, item, and data control.
- o Measuring and test equipment control.
- o Handling, shipping, and storage.

The Project Office has responsibility for management and operation of the SMF, located at the Nevada Test Site. The T&MSS contractor is responsible for the curation and control of samples housed at the SMF. The operation of the SMF is described and controlled via SMF Branch Technical Procedures BTP-SMF-001 through 008. These procedures describe and control the various aspects of SMF activity in a logical fashion, without specific separation by quality assurance function as identified by the audit criteria. Support for the facility including calibration is provided by Reynolds Electrical and Engineering Company, Inc. (REECo).

Operation of the SMF was evaluated using the "vertical slice" method. The aim of the evaluation was to determine the status of implementation of the technical procedures and to determine that the implementing procedures (technically) do ensure that the controls imposed by the QAPD are met. At the time during which the audit of this facility began, the QA Grading Package covering the SMF activities had not yet been approved. However, this situation was corrected during the course of the audit. The technical audit team identified which controls were in place at the facility and the appropriateness of these controls to the activities performed.

Through discussions with SMF staff, it was determined that there has been little implementation of the procedures for samples identified as quality-affecting, with the exception of USGS surface sample splits that are maintained by the SMF. The sample barcode identification system is in general use for Project samples.

The Apache Leap prototype drilling activity is viewed as a positive step in debugging and testing of the procedures prior to doing quality-affecting work. The BTPs will be revised to reflect the lessons learned from the activity.

The primary area of weakness identified during the audit of the SMF was associated with the identification and control of organizational interfaces encountered during SMF operation. This includes the interface with REECo for transfer of drilled core to the SMF that takes place on the floor of the drill rig.

In summary, sample management at the SMF should be expected to function as designed, when implemented. The weakness associated with interface identification and control should be rectified prior to site characterization drilling.

From a technical standpoint, the SMF procedures, when fully implemented, should provide sufficient controls to provide unique sample identification and custodial accountability, to the associated records. The technical audit team concurs with the evaluation for the programmatic audit function, that the status should be considered indeterminate until implementation is attained.

Control of Measuring and Test Equipment (calibration) is limited to equipment such as balances. A balance, used as a sample, was uniquely identified and included in a calibration recall and periodic calibration system. The balance was currently in a calibrated condition, records for the calibration process were locally available, and the instrument was tagged "not to be used for quality-affecting work." This tagging is consistent with the currently approved QA Grading Package of the SMF that excludes Criterion 12 from the controls applied to the SMF activities. Maintaining such instruments in a calibrated condition constitutes good technical practice and should be commended. The audit team concurs with the decision to eliminate Criterion 12 from SMF controls.

It was determined that the technical controls for handling, storage, and shipping were consistent with those used in Criterion 8. Considerable effort has gone into establishing storage methods for the samples expected to be encountered at the SMF. The system, as indicated previously, has not been fully implemented or exercised and is indeterminate. However, the prognosis for successful implementation appears good.

4. Conclusion

The most widespread concerns determined by the technical audit team are in the following areas:

1. Technical procedural training is weak. Technical staff with heavy administrative duties should have general technical training opportunities to remain current and expand their areas of technical expertise.

2. The understanding, identification and control of interfaces in many areas is weak.

3. The QA Grading Package preparation and approval system is cumbersome. The time expended and the number of interactions required to produce a grading package has slowed the review and approval cycle.

4.4 Summary of Audit Findings

A total of 19 CARs (12 to HQ and 7 to the Project Office) were generated during the course of this audit. Information copies of the CARs are attached as Enclosure 2. A synopsis of CARs is presented in Section 6 of this report. Additionally, this synopsis includes 29 remedial deficiencies (11 at HQ and 18 at the Project Office) that were corrected during the course of the audit.

5.0 AUDIT MEETINGS

5.1 Pre-audit Conference

A pre-audit conference with key staff was conducted at 10:30 a.m. at HQ on October 15, 1990, and at the Project Office in Las Vegas, Nevada, on October 22, 1990. The purpose, scope, and proposed agenda for the audit were presented and the audit team and observers were introduced. A list of those attending is attached as Enclosure 1.

5.2 Persons Contacted During the Audit

(See Enclosure 1 for a list of those persons contacted during the audit).

5.3 Preliminary Post-audit Conference

A preliminary post-audit conference was conducted at HQ on October 19, 1990 and at the Project Office on October 29, 1990. The purpose of the preliminary post-audit conference was to present a synopsis of potential CARs to key staff at each location.

5.4 Post-audit Conference

The post-audit conference was conducted at 9:00 a.m. on October 31, 1990, at HQ in Washington, D.C. A synopsis of the preliminary CARs identified during the course of the audit was presented to the OCRWM Director and his staff. A list of those attending the post-audit conference is attached as Enclosure 1.

5.5 Audit Status Meeting

Audit status meetings were held with management representatives at 8:45 a.m. on each day of the audit at HQ and the Project Office. A status of how the audit was progressing and identification of discrepancies were discussed.

6.0 SYNOPSIS OF CORRECTIVE ACTION REQUESTS AND REMEDIAL DEFICIENCIES CORRECTED DURING THE AUDIT

6.1 Corrective Action Requests

YM-91-005 Documented evidence of a matrix that cross-references OCRWM procedures and the QAPD to the QARD requirements does not exist.

YM-91-006 The controls established for training Project personnel do not effectively ensure that personnel are adequately trained prior to performance of quality-affecting activities.

YM-91-007 The flow-down of requirements from the WMSR Volume IV to the MGDS Systems Requirements (SR), the MGDS Site Requirements Document (SRD), the Test & Evaluation Planning Basis (T&EPB), and the Surface-Based Testing Facilities Requirements Document (SBTFRD) is not apparent.

YM-91-008 Inputs to YMP/CM-0007, "Technical Requirements for the Yucca Mountain Project (Midway Valley Trenching and Calcite/Silica Activities)," Revision 1, are not always traceable.

YM-91-009 The review process for YMP/CM-0007, Revision 1, was deficient.

YM-91-010 At the time YMP/CM-0007, Revision 1, was completed and processed, QMP-03-09 was not issued for implementation. It was unclear as to what controls were applied to processing YMP/CM-0007.

YM-91-011 Interim Change Notices (ICNs) were classified as being a minor change, when, in fact, they do not meet the definition of a minor change.

HQ-91-001 Draft version OG of QAAP 2.2, "Verification of Personnel Qualification," was issued for interim use prior to formal controlled distribution and completion of the formal review process.

HQ-91-002 Potential interfaces was not approved per the Program Change Control Procedure with approval of WMSR Volume I, per QAAP 3.7, Revision 0.

HQ-91-003 Technical Adequacy Assessment Group (TAAG) comment sheets for WMSR Volume I, Revision 1, and Volume IV, Revision 1, are not signed by the TAAG Chair.

HQ-91-004 There does not appear to be a system for addressing comments resulting from the review of one volume of the WMSR, which affects other volumes.

HQ-91-005 QAAP 5.1, Revision 2, and QAAP 5.2, Revision 1, do not clearly delineate what constitutes a minor change.

HQ-91-006 During review of revisions for QAAPs 6.1 and 16.1, which were classified as minor changes, it was found that the revision record did not list all the changes that were accomplished during the revision of these QAAPs.

HQ-91-007 Control requirements for the WMSR and WMSD Technical Document Management Plans are inconsistent with the stated requirements.

HQ-91-008 The Deficiency Tracking report and the Monthly Action Due report have not been effective in conveying the status of open items to ensure timeliness of responses, response evaluations, or verification and close-out.

HQ-91-009 Procedure ILP-12.17.01 does not contain a description of the QRC. In addition, the storage facility does not meet the minimum requirements for a temporary storage facility.

HQ-91-010 Procedural requirements for Lead Auditors, Auditors, and Technical Specialists are not being implemented accordingly.

HQ-91-011 The required overview (verification) activities have not been adequately implemented.

HQ-91-012 The approved list of input sources for each WMSR document has not been provided by the Systems Engineering Branch Chief to the Configuration Management Branch Chief. Also, a controlled master list of input sources has not been generated.

6.2 Remedial Deficiencies Corrected During The Audit At HQ

1. The QACD did not provide a description of each office's applicable function or work definitions, nor did it identify the applicable QA program controls to be implemented for the present organizational structure. HQ corrected this deficiency by issuing Revision 1 to the QACD.

2. Evidence of Weston TAAG members reviewing the revised Volume III of the WMSR was not available. HQ corrected this deficiency by placing documentation in the records file. The document indicates that the second signature on TAAG review sheets represents concurrence by the reviewers that comments were resolved by the Technical Document Management Plan.

3. The Proficiency Review Report for a Weston individual, submitted with the WMSR Volume I, Revision 1, and Volume IV, Revision 1, TAAG documentation, is that of a licensing engineer. The review performed by the Weston individual was as a QA review, in that individual's capacity as a Senior Quality Engineer. HQ corrected this deficiency by generating a Proficiency Review Report for the individual as a QA Engineer, and included the document in the records package.

4. For the CER Corporation procurement, the Document Review Record (DRR) form submitted by RW-3 (for the QA review) contained mandatory comments that were not indicated as being resolved by RW-50. Additionally, although the mandatory comments were incorporated in the procurement documents, the reviewer (RW-3) did not indicate agreement with the resolution of these comments in the column on the DRR form provided for this purpose. HQ corrected this deficiency by having RW-50 respond to the mandatory comments and signing the DRR in the appropriate space. Also, RW-3 indicated (by initial and date) agreement with the resolution of the comments on the DRR form.

5. There was no documented evidence that the procurement process was conducted and documented as specified in QAAP 4.2, paragraphs 5.2.1, 5.2.2, and 5.3; and QAAP 7.1, paragraphs 5.1.1 a) through g), and 6.1. HQ corrected this deficiency by revising the remedial action for Deficiency Report (DR) 90-008.

6. A review of DRRs associated with ILP-12.17.01, Revision 0, provided evidence that the commentator had not signed off on the DRR indicating acceptance of the proposed resolution. HQ corrected this deficiency by having the commentator sign concurrence to the responses on the DRR.

7. Trend analysis had not been conducted to date. QAAP 2.9, Revision 0 (10/15/90), had revised the trending program and no reports had been issued under this new program. The Project Office recognized the lack of trend analysis and issued CAR No. YM-91-001 (10/19/90) to document this deficiency.

8. HQ (except RW-50) had not transmitted the QA Records List and the authorized records authentication lists to the QRC as QA records, per QAAP 17.1, Revision 0. HQ corrected this deficiency by transmitting the required lists to the QRC.

9. HQ QA had not transmitted copies of issued audit or surveillance schedules to the QRC as required by QAAP 18.2, Revision 1, and QAAP 18.3, Revision 0. HQ corrected this deficiency by transmitting the audit and surveillance schedules to the QRC.

10. The list of personnel qualified as Lead Auditors, required by QAAP 18.1, Revision 0, did not exist. HQ corrected this deficiency by issuing the list, which will be maintained by RW-3 with the Lead Auditor records.

11. DRRs for Study Plans 8.3.1.2.2.1, 8.3.1.2.2.7, 8.3.1.15.1.2, and 8.3.4.2.4.1 had 19 empty name and/or date spaces. BQ corrected this deficiency by completing the empty spaces.

6.3 Remedial Deficiencies Corrected During the Audit at the Project Office

1. A list of planned readiness reviews for FY 1990 were not submitted to the OCRWM Director as required by the QAPD, Revision 3, Paragraph 2.1.7. The Project Office corrected this deficiency by issuing a list of planned readiness reviews. (Reference letter YMP:CPG-540, Gertz to Bartlett, dtd. 10/25/90).

2. Quality Assurance Grading (QAG) reports for the SMF, QA, and the Sample Overview Committee (SOC) were not approved. The Project Office corrected this deficiency by issuing the above reports.

3. AP-5.13Q, Revision 1, "Readiness Reviews," conflicts with requirements of the QAPD, Revision 3, Paragraph 2.1.7. The Project Office corrected this deficiency by issuance of AP-5.13Q, Revision 2.

4. Resolution of one comment from the regulatory review of YMP/CM-0007, Revision 1 (Draft E), was not documented. The Project Office corrected the deficiency by documenting comment resolution for regulatory review on the Document Review Sheet.

5. No objective evidence was available to support transmittal of the review packages for YMP/CM-0007, Revision 1 (Draft E), to the POCD Director and the Project Site Manager. Per memo from J. M. Davenport to G. D. Dymmel, dated 10/29/90, the oversight in not transmitting the document was judged as not adversely affecting YM/CM-0007, Revision 1. The auditor agreed with the rationale provided in the memo.

6. QAG report EDD-001, Revision 1, for Quality Activities List (QAL) entry 1.2.1.2, "Systems Engineering," grades QA criteria for preparing YMP/CM-0007. Page 1 of the QAG report states that QA Criterion 3 is not applicable to the activity. However, Criterion 3 is applicable per the QAPD, Revision 3, Paragraph 3.1.1. The Project Office corrected this deficiency by revising QAG report EDD-001 to reflect Criterion 3 as applicable.

7. The individual who signed as having performed the management review of YMP/CM-0007, Revision 0, stated that he had not conducted the review. However, the Acting Director of E&DD had conducted the review, but documented the review via a memo. The Project Office transferred the review from memo form to Document Review Sheets.

8. Provisions for evaluating the effect of a revised QAG report on design-related documents, items, or activities are not addressed in program procedures as required by the QAPD, Revision 3, Section 3.1.8. The Project Office corrected this deficiency by revising AP-5.28Q (reference Steps 31 and 32).

9. Project Office Document Control was working to a Working Instruction which are applicable only for T&MSS as a participant activities. However, a letter from the Project Office delegating the responsibility for Document Control to T&MSS did not exist. The Project Office corrected this deficiency by issuing a letter (reference letter YMP:VFI-559, Gertz to Nelson, dated 10/25/90) delegating responsibility for Document Control to T&MSS as a participant.

10. BTP-SMF-005, Revision 0, Section 5.6 references Section 5.3.3 in the BTP; however, Section 5.3.3 does not exist. The Project Office corrected this deficiency by removing the incorrect reference in BTP-SMF-005, Revision 1.

11. Instant prints are used on an interim basis for sample identification until the samples are accepted by the receiving Principal Investigator. The photos were not treated as QA records and should have been exempted from the QA records requirements described in procedure BTP-SMF-006, Revision 0. The Project Office corrected this deficiency by removing the requirement to retain the photos as QA records in BTP-SMF-006, Revision 1.

12. BTP-SMF-001, Revision 0, requires that all signatures and initials of each SMF staff member appearing on any form that may support traceability of a sample or record to be on file at the SMF. Although, the list is maintained at the SMF as required, the list of names and initials is not captured as a QA record. The Project Office corrected this deficiency by revising BTP-SMF-001 to capture the list as a QA record.

13. The Sample Management Plan had not been reviewed for adequacy, completeness, and correctness; approved; and released for issuance per the QAPD, Revision 3, Appendix A, Section 8.1. The Project Office corrected this deficiency by revising the investigative action required for SDR No. 596.

14. An adverse condition was not documented concerning deficiencies noted within the NCR control and tracking system. The QA Division recognized problems within the NCR system (e.g., overdue responses, evaluations, and verifications) but did not document

the programmatic deficiency as required by the QAPD, Revision 3, Section 16. The Project Office recognized this deficiency during the audit and issued CAR YM-91-004.

15. Project Office auditor qualification files were not transmitted to the LRC or kept in one-hour fire rated file cabinets, nor are there duplicate copies stored in a remote location, per QMP-17-01, Revision 1. The Project Office corrected this deficiency by transmitting the files to the LRC.

16. QAAP 18.2, Revision 1, Section 6.5 does not include provisions for an Audit Team Leader (ATL) to sign an audit report, as required by the QAPD, Revision 3. The OQA Director corrected this deficiency by revising QAAP 18.2 to include the ATL as a signatory on the audit report.

17. An incorrect revision of the Work Breakdown Structure dictionary was entered in the Assessment Team (AT) Controlled List. The Project Office corrected this deficiency by correcting the AT Controlled List and a new Revision 4 was entered into the Document Control Center on October 25, 1990. (Reference AP-6.17Q, Revision 0, Paragraph 5.2.2).

18. The screening reviewer for Study Plan 8.3.1.17.3.3(2) did not complete Exhibit 4, Study Plan Review Checklist. The Project Office corrected this deficiency by having the screening reviewer complete the missing form.

7.0 REQUIRED ACTIONS

Responses to each CAR (delineated in Section 6.0) are due within the time frame stated in Block 10 of each CAR, as detailed in the CAR transmittal letter. Upon response, and satisfactory verification of all remedial and corrective actions, the CARs will be closed and OCRWM will be notified (by letter) of the closure.

ENCLOSURE 1

OCRWM AUDIT NO. 90-I-01
PERSONNEL CONTACTED

Name	Organization	Title	Contacted Pre-Audit	Contacted During Audit	Contacted Post-Audit
Arpia, Janet	DOE/OCRWM	OQA Training Coor.		X	X
Arceo, Amelia I.	SAIC/YMP	Auditor	X		
Bartlett, J. W.	DOE/OCRWM	Director		X	X
Barton, Robert V.	DOE/YMP	Dep. Dir. RSED	X	X	
Beall, G. Kenton	SAIC/T&MSS	Env. Field Op. Mgr.	X	X	
Beers, Robert H.	SAIC/T&MSS	Tech. Support Manager	X	X	
Belke, Bill	NRC	Observer	X		
Blanchard, Maxwell B.	DOE/YMP	RSED Div. Director	X	X	
Blaylock, James	DOE/YMP	QA Engineer	X		X
Bostian, Robert S.	SAIC/T&MSS	Asst. Project Manager	X	X	
Brackett, R. James	TRW	Observer	X		X
Brant, Harold H.	DOE/OCRWM	Div. Director			X
Bresee, J. C.	DOE/OCRWM	Dep. Asso. Director		X	X
Brient, Robert	SWRI/NRC	Observer	X		
Brocum, Stephen	DOE/OCRWM	OGD/Div. Director AVD	X	X	X
Brooks, Charles E.	DOE/OCRWM	RW-312	X		X
Bryant, E. Paul	SAIC/T&MSS	Technical Specialist	X		
Buckley, John	NRC	Observer			X
Carlson, James H.	DOE/OCRWM	RW-42			X
Cerny, Barbara	DOE/OCRWM	Director IRMD		X	X
Chandler, Douglas K.	SAIC/T&MSS	APM	X	X	
Clanton, Uel S.	DOE/YMP	Chief SIB	X	X	
Clark, Bob	DOE/OCRWM	Auditor	X		X
Clark, James E.	SAIC/YMP	QA Liaison	X		
Cline, K. Michael	Weston/OCRWM	Deputy APM	X	X	X
Cloninger, Michael O.	DOE/YMP	Br. Chief-Field Eng.	X	X	
Colandrea, Tom	EEI	Observer	X		X
Cocoros, A. Edward	MACTEC/YMP	Auditor	X		
Constable, Robert B.	DOE/YMP	Auditor	X		
Conway, Jim	NRC	Observer	X		X
Cox, Neil D.	SAIC/YMP	Auditor	X		
Dana, Stephen R.	SAIC/YMP	Audit Team Leader	X		X
Danker, William J.	DOE/OCRWM	Nuclear Engineer-OER	X		X
Desell, Linda J.	DOE/OCRWM	RW-322	X		X
Diaz, Mario R.	DOE/YMP	Auditor	X		
Dixon, Wendy R.	DOE/YMP	POCD Div. Director	X	X	
Dobson, David C.	DOE/YMP	RTB Branch Chief	X	X	
Dyer, J. R.	DOE/OCRWM	TAB	X	X	

OCRWM AUDIT NO. 90-I-01
PERSONNEL CONTACTED

Name	Organization	Title	Contacted Pre-Audit	Contacted During Audit	Contacted Post-Audit
Dymmel, George D.	DOE/YMP	Br. Chief-Systems	X	X	
Edwards, Roxanne	DOE/YMP	Systems Engineer	X	X	
Estella, John W.	SAIC/T&MSS	Staff Advisor	X	X	
Fenster, David F.	Weston/OCRWM	Geoscience Task Ldr.	X		
Frank, Norman C.	CER/OCRWM	QA Specialist-OQA	X	X	X
Friedman, Penny	Weston/OCRWM	APM			X
Gamble, Robert P.	Weston/OCRWM	Department Manager			X
George, James J.	CER/OCRWM	Auditor	X		X
Gertz, Carl P.	DOE/YMP	Project Manager	X	X	X
Hale, H. Jackson	DOE/OCRWM	OSC Division Director	X	X	X
Harper, James B.	SAIC/T&MSS	QA Manager	X	X	
Haslebacher, William F.	Weston/OCRWM	Technical Specialist	X		X
Hooks, Kenneth R.	NRC	Observer	X		X
Horton, Donald G.	DOE/OCRWM	OQA Director	X	X	X
Hughey, Cecil E.	CER/OCRWM	Dep. Proj. Mgr.-OQA	X	X	X
Iorii, Vincent F.	DOE/YMP	PCB Branch Chief	X	X	
Isaacs, Thomas H.	DOE/OCRWM	OCBM Assoc. Dir.	X	X	
Jackson, Robert E.	Weston/OCRWM	Program Manager		X	X
Johnson, Timothy W.	DOE/OCRWM	OQA			X
Jones, Susan B.	DOE/OCRWM	Physical Scientist	X	X	
Kanua, Marilyn	SAIC/T&MSS	Sr. Acting Advisor	X		
King, Ginger P.	DOE/OCRWM	E & I Div. Director			X
King, Jerry L.	SAIC/T&MSS	APM	X		
Lahoti, Ram	DOE/OCRWM	OQA Div. Director	X	X	X
Leahy, Judy	DOE/OCRWM	RW-50	X		
Lemeshewsky, W. A.	DOE/OCRWM	Engineer	X	X	X
Linehan, John	NRC	Project Director			X
Mabrito, Bruce	SWRI/NRC	Observer	X		
Macaluso, Corinne	DOE/OCRWM	Physical Scientist			X
MacNabb, William V.	SAIC/T&MSS	Dep. Progect Manager	X	X	
Martin, John S.	SAIC/YMP	Auditor	X		
Matthews, Sam C.	SAIC/T&MSS	CMD Manager	X	X	
Meyer, Marc J.	CER/OCRWM	Technical Specialist	X		X
Mitchell, Martha J.	SAIC/YMP	Lead Technical Spec.	X		X
Miller, Donald E.	CER/OCRWM	QA Specialist	X	X	X
Milner, Ronald A.	DOE/OCRWM	OST Actg. Assoc. Dir.	X		X
Minning, Richard	DOE/OCRWM	CMD Acting Director		X	X

OCRWM AUDIT NO. 90-I-01
PERSONNEL CONTACTED

Name	Organization	Title	Contacted Pre-Audit	Contacted During Audit	Contacted Post-Audit
Mozumdu, Mohammad	DOE/OCRWM	Physcl. Sci.-RW-22	X		X
Murthy, Ram B.	DOE/YMP	QRB Chairman	X	X	
Mutreja, Krish	DOE/OCRWM	RW-311	X		X
Nelson, John H.	SAIC/T&MSS	Project Manager	X		
Newbury, Claudia M.	DOE/YMP	Physical Scientist	X		
Niedzielski-Eichner, P.	Nye Co., NV	Observer	X		X
Parker, Gerald J.	DOE/OCRWM	RW-321	X		X
Peck, John H.	SAIC/T&MSS	Senior Integrator	X		
Peters, Frank G.	DOE/OCRWM	Deputy Director	X	X	X
Petrie, Edgar H.	DOE/YMP	E&DD Actg. Div. Dir.	X	X	
Phillips, Garth	DOE/YMP	Contracting Officer	X	X	
Prater, Cynthia H.	SAIC/YMP	Office Assistant	X	X	
Roberson, Gary D.	DOE/YMP	Physical Scientist	X		
Robison, A. C.	DOE/YMP	Special Assistant	X	X	
Rousso, Samuel	DOE/OCRWM	OPRM Assoc. Director	X	X	X
Saltzman, J.	DOE/OCRWM	OER Director		X	X
Senderling, Mark	DOE/OCRWM	Engineer		X	X
Shelor, Dwight E.	DOE/OSC	Associate Director	X	X	X
Simmons, Ardyth M.	DOE/YMP	Physical Scientist	X		
Skuchko, Sharon	DOE/OCRWM	OSC Program Analyst			X
Smith, Charles M.	DOE/OCRWM	Special Assistant	X		
Snow, A. Lowell	Weston/OCRWM	APM	X		X
Spooner, Arthur W.	Weston/OCRWM	Auditor	X		X
Stockey, Jane	DOE/OCRWM	Physcl. Scient.-RW-20	X	X	
Stringfield, W. A.	DOE/OCRWM	RW-313	X	X	X
Tiesenhausen, E. V.	Clark Co., NV	Observer	X		X
Treadwell, John	SAIC/T&MSS	APM	X		
Trebules, Victor	DOE/OCRWM	MQMD Act. Assoc. Dir.	X		X
Valentine, Deborah	DOE/OCRWM	Sr. Env. Prot. Spec.			X
Van Camp, Scott G.	DOE/OCRWM	Geologist-OGD			X
Verma, Tilak	NRC	QA Project Manager			X
Victor, Harley R.	Weston/OCRWM	Mgr. Proj. Management	X	X	X
Voegele, Michael D.	SAIC/T&MSS	Technical Director	X		
Voltura, Nancy A.	DOE/YMP	QA Specialist	X	X	
Wallau, Jr., R. H.	USGS/OCRWM	Liaison to OQA			X
Warren, Charles C.	MACTEC/YMP	Lead Auditor	X		X
Weber, Carl E.	Weston/OCRWM	QA Engineer-OQA	X	X	X

OCRWM AUDIT NO. 90-I-01
PERSONNEL CONTACTED

Name	Organization	Title	Pre-Audit	Contacted During Audit	Post-Audit
Weeks, Richard L.	SAIC/YMP	Auditor	X		
Whiteside, Ardell	SAIC/Golden	Auditor	X		
Wilmot, Edwin L.	DOE/YMP	Dep. Project Manager	X	X	X
Wilson, Winfred A.	DOE/YMP	Site Manager	X	X	
Zimmerman, Susan W.	St. of Nevada	Observer	X		X

ENCLOSURE 2

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

14CAR NO.: HQ-91-001
DATE: 11/09/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD, Revision 3	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-3	C. Bugbey

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Horton	N

5 Requirement:

Para. 6.1.1, states in part, "Documents that specify quality and/or technical requirements or prescribe activities affecting quality are prepared; reviewed for adequacy, completeness, and correctness; approved; and released for issuance and distribution, and revised in accordance with written procedure."

Para. 6.1.2, states in part, "Document issuance and distribution are controlled to ensure that correct, applicable, and current documents are available to the personnel performing prescribed activities, prior to commencing work..."

6 Adverse Condition:

Contrary to the above, a draft version (draft revision 0G) of QAAP 2.2, "Verification of Personnel Qualification," was issued for interim use prior to formal controlled distribution and completion of the formal review process.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Robert W. Clark	10/19/90	1☐ 2☒ 3☐	OQA James Blaylock for	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

ENCLOSURE 2

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

14CAR NO.: HQ-91-002
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAAP 3.7, Revision 0	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-30	W. Lemeshewsky/M. Senderling

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Shelor	N

5 Requirement:

a. Para. 6.1.4--the potential interface shall be concurred in by the organizations responsible for each part of the interface and approved by the Branch Chief, Systems Engineering.

b. Para. 6.1.5--the interface is controlled through the OCRWM Change Control procedures.

c. Para. 6.3.1--the interface form identifies and describes the potential interface and gives the overall purpose and scope of the intended task or item.

d. Para. 6.3.1 (b)--a brief description of the interface characteristics such as weight, dimensional data, flow rate, and quantity is included for the interface.

e. Para. 6.3.1 (d)--the information shall include the purpose of the interface form submittal,

6 Adverse Condition:

1. Contrary to the above requirements:

   a. Potential interfaces are not approved per the Program Change Control Procedure with approval of WMSR, Vol. I, in accordance with Para. 6.3.3 of QAAP 3.7, Rev. 0. The following adverse conditions exist in the presence of this review:

      The interfaces are not controlled through the OCRWM Change Control Process.

      The information does not include the rationale for the interface and when it is needed.

2. In addition, it was stated that Systems Engineering approval of the subject interfaces is contingent on concurrence by the organizations responsible for each part of the interface. However, external interfaces, which comprise 3 of the 5 identified interfaces, do not require

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Art Spooner	10/19/90	1☐ 2☒ 3☐	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: EQ-91-002
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

5 Requirements (continued)

including the rationale. Why is it needed? When it is needed?

f. Para. 6.3.3--approval of interfaces are accomplished per Program Change Control Procedure with approval of WMSM, Volume I and WSMD.

6 Adverse Condition (continued)

this concurrence (ref. interface control form step 8 concurrence). Therefore, the rationale for not approving these interfaces prior to approval of WMSR, Vol. 1 is unclear.

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

14CAR NO.: HQ-91-003
DATE: 11/09/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
WMSR TDMP, Revision 3	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-30	W. Lemeshewsky/M. Senderling

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Shelor	N

5 Requirement:

Para. 6.4.6.1 states in part, "...the acceptable resolution produced shall be documented on the Weston TAAG Comment Sheet and signed by the Weston TAAG Chairman and the reviewer and/or document preparer.

6 Adverse Condition:

Contrary to the above requirement, TAAG Comment Sheets for WMSR, Volume I, Revision 1, and Volume IV, Revision 1, are not signed by the TAAG Chairman.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Art Spooner	10/19/90	1☐ 2☒ 3☐	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

14CAR NO.: BQ-91-004
DATE: 11/09/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
WMSR IDMP, Revision 3	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-30	W. Lemesbewsky/M. Senderling

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Shelor	N

5 Requirement:

Para. 6.5.4 states in part, "...the Weston TAAG Chairman shall review comments to determine their extent and to evaluate potential conflicts."

6 Adverse Condition:

There does not appear to be a system for addressing comments resulting from the review of one volume of the WMSR which affects other volumes. Examples from the TAAG review of WMSR, Volume I, Revision 1, include: (1) Page 57 of P. Kumar's comments where comment resolution states that comments are relevant and will be incorporated in WMSR, Volume II; and (2) Page 61 of P. Kumar's comments where comment resolution states that comments are appropriate for inclusion in lower tier documents but not WMSR, Volume I.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Art Spooner	10/19/90	1☐ 2☐ 3☒	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

14CAR NO.: EQ-91-005
DATE: 11/09/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD, Revision 3	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-3	Carl Weber

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Horton	N

5 Requirement:

Quality Assurance Program Description Document (QAPD), Rev. 3, Section 6, Para. 6.1.1, states in part, "To avoid possible omission of a required review, the types of minor changes that are not subject to such review and approval, and the authority for such decision, is clearly delineated in approved procedures."

6 Adverse Condition:

Contrary to the above, QAAP 5.1, Rev. 2 and QAAP 5.2, Rev. 1, do not clearly delineate what constitutes a minor change. In lieu of this, the procedures delineate what constitutes a major revision.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
John S. Martin	10/19/90	1☐ 2☒ 3☐	OQA Jane Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

14CAR NO.: EQ-91-006
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAAP 5.1, Revision	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-3	Carl Weber

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Horton	N

5 Requirement:

QAAP 5.1, Rev. 2, Attachment VII, Revision Record, provides for the "Description of Proposed Revision and Rationale" for the proposed revision to be utilized in the evaluation of whether or not the proposed revision constitutes a major or minor change.

6 Adverse Condition:

Contrary to the above, during review of the revisions for QAAPs 6.1 and 16.1, which were classified as minor changes, it was found that the revision record did not list all the changes which were accomplished during the revision of these QAAPS.

7 Recommended Action(s):

Identify the remedial actions 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 conditions to those listed on the CAR. Identify these deficiencies and provide the measures

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
John S. Martin	10/19/90	1☐ 2☒ 3☐	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: HQ-91-006
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST (continuation sheet)

7 Recommended Action(s) (continued)

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.

14CAR NO.: HQ-91-007
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD Section 6.0	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-30	William Lemeshewsky

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Shelor	N

5 Requirement:

Para. 6.1.2, requires approved procedures for the release of controlled documents. Provisions to be included in the approved procedures are:

a. Identification and marking of documents, including documents released prior to completion of the approval process.

b. Use of receipt acknowledgment document transmittal forms.

c. Maintenance of controlled document distribution lists.

d. Marking, removal, or destruction of obsolete or superseded controlled documents.

6 Adverse Condition:

Control requirements for the WMSR and WMSD Technical Document Management Plans (Ref. QAAP 3.5) are inconsistent with the above requirements.

NOTE: This condition was previously reported on DR 89-0-036.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Art Spooner	10/19/90	1☐ 2☒ 3☐	OQA James B Daughtry	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: BO-91-007
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

5 Requirements (continued)

e. Maintenance of an index (controlled document list) giving revision status for controlled documents.

OFFICE
RADIOACTIVE W
U.S. DEPARTI
WASHI

CORRECTIVE

1 Controlling Document
QAPD, Revision 3 and QAAP-16.1, Revision 0

3 Responsible Organization
RW-3

10 Response Due
11/29/90

11 Responsibility for Co
D. Horton

5 Requirement:

QAPD, Rev. 3, Section 1 Organization:

Para. 1.1.1 responsibilities of Director, OCR

"g. Maintain awareness of quality assurance

Para. 1.1.2.1 responsibilities of Director, O

"j. Establish and maintain a Program Quality
communication of the status of the quali
trends, and significant conditions adver

6 Adverse Condition:

Based on the examples presented below, the CA
report have not been effective in conveying t
responses, response evaluations, or verificat

The 10/16/90 CAR/DR/OBS Tracking Data Dump wa
the 60 DRS/CARS listed.

A. Untimely responses for 28 items. (Based
Responses were received from 2-109 days
response for a significant deficiency tha

(DRs 90-08, 09, 10, 32, 33, 34, 11, 17, 1
07, 08, 11, 14, 15, 17, 19; CAR 90-01.)

7 Recommended Action(s):

Identify the remedial actions to be taken to
the cause of the condition and the planned co

8 Initiator
Ardell Whiteside

Date:
10/19/90

9 Severity Level -
1☐ 2☒ 3☐

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:

QAR _____ Date _____

DF CIVILIAN
ASTE MANAGEMENT
IENT OF ENERGY
GTON, D.C.

14CAR NO.: EQ-91-008
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

ACTION REQUEST

2 Related Report No.
Audit No. 90-I-01

Discussed With
D. Horton/R. Lahoti

rective Action

12 Stop Work Order Y or N
N

M

issues and problems and effect resolution."

QA:

Assurance information system to facilitate effective
ty assurance program; status of resolution of issues,
se to quality..."

R/DR/OBS tracking report and the monthly action due
he status of open items to assure timeliness of
ion and close-out.

s reviewed and the following conditions were noted for

on time from Response Due to Response Received)
after the due date for 28 items, which included one CAR
t was received 43 days after the due date.

8, 20, 21, 23, 31, 36; DR 90-01, 02, 03, 04, 05, 06,

correct the deficiencies noted in Block 6. Identify
rrective action to prevent recurrence.

13 Approved By: Date:

OQA James Blaylock 11/9/90

17 Closure Approved By:

OQA

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

CAR NO.: EQ-91-008
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

5 Requirements (continued)

QAAP-16.1, Revision 0, Para. 4.4 includes responsibilities for the Director, OQA, or designee to track the status of all CARs and DRs.

6 Adverse Condition (continued)

B. Untimely response evaluation actions for 44 items. (Based on time from Response Received to Accepted/Rejected)

NOTE: For the purpose of this deficiency, evaluations that occurred within 14 days of receipt of the response were considered acceptable.

Response evaluations ranged from 15-200 + days after receipt of response for 44 items, which included three CARs for significant deficiencies that noted 17, 19, and 23 days.

(DRs 89-01, -08 thru -13, -17; CARs 89-01, -02, and 90-01.)

C. Untimely verification/close-out actions for 23 items (Based on time from Corrective Action completion to close-out).

NOTE: For the purpose of this deficiency, close-outs that occurred within 30 days of completion of actions were considered acceptable.

Close-outs ranged from 31-337 days for 23 of 41 items.

(DRs 89-02, 03, 04, 06, 08 thru 11, 13, 15, 17, 24, 26 thru 29, 31 thru 34; 90-09, 10; CAR 89-01)

D. Only one item (DR-89-07) was voided. However, the DR was initiated in 3/89 and was not closed until 9/90. Therefore, the QA Evaluation of the cited problem was not timely.

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

14CAR NO.: HQ-91-009
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD, Revision 3	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-10	B. Cerny

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	S. Rousso	N

5 Requirement:

QARD, Rev. 3, Para, 17.6 states in part "Temporary storage, preservations, ...is performed in accordance with requirements applicable to the storage of records delineated in the QARD."

QARD, Rev. 4, Para. 17.0, states "The provisions of NQA-1, Basic Requirement 17 and supplemental 17S-1 shall apply."

ASME NQA-1, Supplement 17S-1, Para. 4.1 states in part, "Prior to storage of records, a written storage procedure shall be prepared and shall include a description of the storage facility."

6 Adverse Condition:

ILP 12.17.01 procedure does not contain a description of the storage facility.

Without this description, it is not possible to verify if the Quality Records Center (QRC) meets additional requirements found in Section 4 of Supplement 17S-1.

The storage facility at this time does not meet the minimum requirements for a temporary storage facility.

7 Recommended Action(s):

Identify the remedial actions 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 conditions to those listed on the CAR. Identify these deficiencies and provide the measures

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Mario R. Diaz	10/19/90	1☒ 2☐ 3☐	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: EQ-91-009
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST (continuation sheet)

7 Recommended Action(s) (continued)

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.

14CAR NO.: HQ-91-010
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAAP 18.1, Revision 0	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-3	R. Clark/R. Lahoti/D. Miller

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Horton	N

5 Requirement:

QAAP 18.1, Rev. 0, Para. 6.3.3 states in part: "Based on annual evaluations, the Director, OQA, may extend the certification...The Director, OQA, dated signature on Attachment 1, indicates results of the evaluations are satisfactory and the certification is extended for a period of one year from the date of the evaluation."

Para. 6.5.3 states:

"A file for each Lead Auditor, auditor, and technical specialist is established and maintained by the Director, OQA, and contains copies of the individual's resume, documentation relating to or supporting the individual's qualifications, educational degree(s), training course certificates, training attendance records, audit participation records and applicable examination results."

6 Adverse Condition:

Procedural requirements for Lead Auditors, auditors, and technical specialists are not being implemented accordingly.

- Recertification for Lead Auditors are not being documented.
- Files of Lead Auditor, auditor, and technical specialist dc not contain all required documentation.
- Objective evidence of the examination contents for Lead Auditors does not exist.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Mario R. Diaz	10/19/90	1☐ 2☒ 3☐	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: RQ-91-010
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

5 Requirements (continued)

Para. 6.6.1 states:

"The Director, OQA, develops and administers the examination for a Lead Auditor."

Para. 6.6.4 states:

"The Director, OQA, retains a record of the objective evidence of the examination contents."

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

14CAR NO.: EQ-91-011
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD, Revision 3	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-3	D. Horton

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Horton	N

5 Requirement:

A) QARD Rev. 3, Section 1 Organization, Para. 1.1.2.1: The responsibility of the Director, OQA, are to:

E. Overview Program quality assurance activities by conducting internal and external verifications..., such as assessments, readiness reviews, or audits..."

B) Section 2, Quality Assurance Program, Para. 2.1.10: "In addition to audits formal programmatic and technical surveillances are performed to provide time management information on program activities affecting quality.

C) Section 2, Quality Assurance Program, Para. 2.1.12: "Communication and information systems are established to ensure timely reporting, dissemination and tracking of quality assurance

6 Adverse Condition:

The required overview (verification) activities have not been implemented for OCRWM (EQ). (Requirement A)

o OCRWM (EQ) QA Division has not conducted internal or external audits. (Requirement E)

QAAP-18.2, Rev. 0, "Audit Program" was effective 3/27/89.

DR-90-14 was initiated 3/1/90, to identify that audits were not accomplished. Remedial actions were identified in the 5/7/90 response. Completion of corrective actions were forecast as 9/1/90. This DR is open.

NOTE: Tracking Log shows due date as 11/20/90 no extension or amended response on file.)

7 Recommended Action(s):

Identify the remedial actions 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 conditions to those listed on the CAR. Identify these deficiencies and provide the measures

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Ardell Whiteside	10/19/90	1☒ 2☐ 3☐	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: EQ-91-011
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST (continuation sheet)

5 Requirements (continued)

management information..."

D) Section 18, Audits, Para. 18.1.1: "Procedures...address accomplishment of the planning and scheduling...to ensure that Program-deliverable products and processes are evaluated commensurate with importance... Internal audits are scheduled to ensure that applicable elements of the QA program are audited at least once a year."

6 Adverse Condition (continued)

DR actions did not include an evaluation of important activities or applicable elements of the QA program that were addressed by other means (surveillances, reviews, etc.). The DR was deemed as not significant so the actions taken by CAR-90-01 did not apply to this condition.

- OCRWM (EQ) QA Division has not conducted surveillances since March 1990. (Requirement B).

  QAAP-18.3, Rev. 0, "Surveillance Program," was effective 3/27/89.

  Twenty surveillances were conducted until March 1990. None have been conducted since that time.

  OCRWM (EQ) QA Division did not fully implement the Trend Analysis Program. (Requirement A).

  QAAP-2.9 Rev. 0, "QA Program Status Reporting," was effective 10/2/89 with Rev. 1 effective 10/15/90. (See CAR No. YM-91-001)

- Present Deficiency Document reporting and tracking system is not accurate or effective (Requirement D).

  (See CAR No. EQ-91-008 from this Audit)

  Also refer to DR-90-011 issued 3/1/90 and closed 10/3/90.

  Discussion: A comprehensive review was conducted in February 1990 and issued reports were published in March 1990. Review 90-001 identified 15 DRs and 27 observations (some of which identified deficiencies or potential problems). The text of the report states that the audit procedure was used as a guidance. The DRs were issued but responses to observations were not required.

  Recent reorganization and resultant efforts taken have shown an improvement in certain areas.

7 Recommended Action(s) (continued)

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.

14CAR NO.: YM-91-005
DATE: 11/09/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD, Revision 3	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
Quality Assurance Division	Donald G. Horton

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	D. Horton	N

5 Requirement:

QAPD, Rev. 3, Para. 2.1.1 states in part:

"A matrix, which cross-references OCRWM procedures and the QAPD to the QARD requirements, is established and maintained by the Office of Quality Assurance."

6 Adverse Condition:

Documented evidence of a matrix that cross-references OCRWM procedures and the QAPD to the QARD requirements does not exist.

NOTE: The auditor was aware that this matrix was in the process of being developed based on the fact that the portion related to the YMPO was almost finished at the time of the Audit Exit Meeting. However, the document has not been approved as required by the implementing procedure.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiency noted in Block 6.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Mario R. Diaz	10/26/90	1☐ 2☐ 3☒	OQA James Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

14CAR NO.: YM-91-006
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD, Revision 3	Audit No. 91-I-01

3 Responsible Organization	4 Discussed With
Training	M. Anderson and W. Thomas

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	C. Aiello	N

5 Requirement:

QAPD, Rev. 3, Para. 2.1.9, states in part, "Personnel assigned to perform activities that affect the quality of an item or activity will receive appropriate indoctrination and training prior to performing work."

6 Adverse Condition:

The controls established for training Project personnel do not effectively assure that personnel are adequately trained prior to performance of quality-affecting activities.

- Qualification evaluation dates may not reflect or coincide with dates necessary for training.
- Additional training (after an individual becomes qualified) cannot be determined as having been accomplished on time. This may be due to the fact that a time limitation is not reflected or documented on the appropriate forms.
- Tracking mechanism to ensure necessary and adequate training is achieved does not exist.
- Training matrix seems to be an important part of the training program. However, it does not exist.

7 Recommended Action(s):

Identify the remedial actions 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

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Mario R. Diaz	10/26/90	1☐ 2☒ 3☐	OQA James Blaylock for	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: YM-91-006
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

6 Adverse Condition (continued)

7 Recommended Action(s) (continued)

conditions to those listed on the CAR. 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.

14CAR NO.: YM-91-007
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
EDD-001, Rev. 0, and YMP/CM-007, Rev. 1	Audit 90-1-01

3 Responsible Organization	4 Discussed With
Engineering & Development Division	G. Dymmel and J. Waddell

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	E. Petrie	N

5 Requirement:

QA Grading Report No. EDD-001, Page 4, Item F, states "The document shall cover all requirements necessary to establish the flowdown of requirements from source documents."

Page I-1 of Technical Requirements for the Yucca Mountain Project (YMP/CM-0007) states in part, "This document defines a basis traceable from the Waste Management Systems Requirements Document..."

6 Adverse Condition:

The flowdown of requirements from the WMSR Volume IV to, respectively, the MGDS System Requirements (SR), Site Requirments Document (SRD), Test & Evaluation Planning Basis (T&EPB), and Surface-Based Testing Facilities Requirements Document (SBTFRD), as shown in Figure I-1 of YMP/CM-0007 is not apparent. Examples are as follows:

1. Requirements in Section IV (SRD) should flow down from Section III (SR). Page IV-2 states, "All requirements in this section are based on the Site Characterization Plan...."

2. Requirements in Section V (T&EPB) should flow down from Section IV (SRD). The only references in Section V are to Neal, 1985, and the SCP. However, Page V-1 says the two figures in Section V are based on inputs from Section III (SR) and page V-5 says requirements to control testing are based on "[NEV]."

7 Recommended Action(s):

Identify the remedial actions 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 conditions to those listed on the CAR. Identify these deficiencies and provide the measures

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Marc Meyer	10/26/90	1☐ 2☒ 3☐	OQA James Blaylock for	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: YM-91-007
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

7 Recommended Action(s) (continued)

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.

14CAR NO.: YM-91-008
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
EDD-001, Revision 0	Audit 90-I-01

3 Responsible Organization	4 Discussed With
Engineering & Development Division	G. Dymmel and J. Waddell

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	E. Petrie	N

5 Requirement:

QA Grading Report No. EDD-001, Page 4, Items B and C states, "All inputs shall be documented. Use of inputs shall be documented and traceable."

6 Adverse Condition:

Inputs in Revision 1 of YMP/CM-0007, "Technical Requirements for the Yucca Mountain Project (Midway Valley Trenching and Calcite/Silica Activities)" are not always traceable. Examples are as follows:

1. The source of functional requirements on pages III-8, 10, and 11 is not apparent.
2. References on page IV-5 to Ross, 1987, and DOE, 1986, are not traceable.
3. Page IV-B-1 references 42USC9601 as the emergency planning and community Right-to-Know Act and a source of input. The reference is not traceable to the Act nor is it traceable to a requirement in Section III.
4. Page IV-B-1 references "N49602 Spang to Gertz 10/10/89" as a source of input. The letter does not exist. A letter dated 10/10/89 from Spang to the DOE Nevada Operations Office exists;

7 Recommended Action(s):

Identify the remedial actions 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 conditions to those listed on the CAR. Identify these deficiencies and provide the measures

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Marc Meyer	10/26/90	1☐ 2☒ 3☐	OQA James Blaylock for	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: YM-91-008
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

6 Adverse Condition (continued)

however, the letter number is N48602.

5. None of numerous references to "[NEV]" are traceable because no such source of input exists.

6. Requirements in Section IV, Paragraph 2.8, are not traceable.

7 Recommended Action(s) (continued)

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.

14CAR NO.: YM-91-009
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAPD, Revision 3; QMP-06-04, Revision 0	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
Engineering & Development Division	Jon White and George Dymmel

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	E. Petrie	N

5 Requirement:

QAPD, Para. 3.1.6, states in part, "Technical reviews are performed by any competent individual(s) or groups..."

QMP-06-04, Step 12, states, "Assign reviewer(s) by entering name(s) on Page 1 of DRS (name & discipline of the qualified, independent reviewer for technical reviews); provide reviewer(s) with review package and established review criteria. Attachment 7 provides examples for guidance in establishing criteria."

QMP-06-04, Step 13, states in part, "Review document as instructed in the review package."

6 Adverse Condition:

The following conditions are associated with review of the Technical Requirements for the Yucca Mountain Project (YMP/CM-0007):

1. The scope of expertise of the person who performed a technical review was not broad enough to cover the entire spectrum of characteristics requiring review. For example, the reviewer stated he did not perform a "flowdown" review because he had no systems engineering experience. The reviewer was unfamiliar with the fact that YMP/CM-0007 was to be based on WMSR requirements.

2. The reviewer was not familiar with technical review criteria in Attachment 7 to QMP-06-04. These were the only criteria provided the reviewer.

NOTE: The reviewer received no classroom instruction on QMP-06-04 and did not seek

7 Recommended Action(s):

Identify the remedial action(s) to be taken to correct the deficiencies noted in Block 6. Identify the condition and the planned action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Marc Meyer	10/26/90	1☐ 2☒ 3☐	OQA Jean Blaylock	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

CAR NO.: YM-91-009
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

6 Adverse Condition (continued)

clarification on criteria during the course of his review.

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

14CAR NO.: YM-91-010
DATE: 11/09/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QMP-06-04, Revision 1	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
Engineering & Development Division	G. Dymmel

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
11/29/90	E. Petrie	N

5 Requirement:

QMP-06-04, Rev. 1, states in part,"...that documents will be processed in accordance with QMP-03-09.

6 Adverse Condition:

Contrary to the above, at the time Rev. 1 of Technical Requirements for the Yucca Mountain Project (YMP/CM-0007) was completed and processed, QMP-03-09 was not issued for implementation. It is unclear as to what controls were applied to processing YMP/CM-0007.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
Art Spooner	10/26/90	1☐ 2☒ 3☐	OQA James Blaylock Jr.	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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

14CAR NO.: YM-91-011
DATE: 11/09/90
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QMP-06-04, Revision 1	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
Regulatory & Site Evaluation Division	Ram Murthy

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
12/03/90	D. Dobson	

5 Requirement:

QMP-06-04, Para 3.3 states:

"A minor change is an alteration to an approved document such as an organizational title change; a change to the alpha-numeric identifier of the document; minor wording changes for clarity; editorial, typographical, grammar, punctuation, or spelling corrections; where the basic content of the document does not change."

NOTE: Any other change is considered major.

6 Adverse Condition:

Contrary to the above, the following ICNs were classified as being a minor change when in fact they do not meet the definition of a minor change. ICN #1 to BTP-QRB-001, ICN #2 to AP-5.28Q, and ICN #4 to AP-5.28Q.

7 Recommended Action(s):

Identify the remedial actions 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 conditions to those listed on the CAR. Identify these deficiencies and provide the measures

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
John S. Martin	10/26/90	1☐ 2☒ 3☐	QQA James B Lloyd for	11/9/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	QQA _____

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

CAR NO.: YM-91-011
DATE: 11/09/90
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

7 Recommended Action(s) (continued)

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

ORIGINAL
THIS IS A RED STAMP

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

14CAR NO.: HQ-91-012
DATE: 11/21/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAAP 3.6, Revision 0	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-30	W. Lemeshewsky/M. Senderling

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
12/07/90	Dwight Shelor	N

5 Requirement:

Section 6.2.1 states, "The approved list of input sources, and revisions thereto, for each document shall be provided by the Branch Chief responsible for the technical document to the Branch Chief, CMB who shall maintain a controlled master list of input sources for the technical documents."

6.2.2 states, "The Branch Chief, CMB shall determine which Branch Chief has cognizance for the functional area relating to each specific input (for example, licensing inputs to the Licensing Branch, environmental inputs to the Environmental Compliance Branch), and shall so indicate on the controlled master list of input sources."

6 Adverse Condition:

1. The approved lists of input sources for each document has not been provided by the Systems Engineering Branch Chief to the Branch Chief, CMB.

   NOTE: The list of input sources for the WMSR Volume I, Revision 1 has been transmitted to the Branch Chief, CMB.

2. A controlled master list of input sources has not been generated.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
E. P. Bryant	11/19/90	1☐ 2☐ 3☒	OQA	11/20/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

WBS 1.2.9.3
QA

NOV 23 1990

John W. Bartlett, Director, Civilian Radioactive Waste Management,
BQ (RW-1) FORS

ISSUANCE OF CORRECTIVE ACTION REQUEST (CAR) BQ-91-012 RESULTING FROM OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT QUALITY ASSURANCE (QA) AUDIT 90-I-01

Enclosed is CAR BQ-91-012 generated as a result of QA Audit 90-I-01.

Please identify the corrective actions to be taken and implemented to correct the deficiencies. A CAR Continuation Sheet and instructions for completion have been provided. Send the original of your response to Nita J. Brogan, Science Applications International Corporation, Las Vegas, Nevada. Response to the CAR is due by December 7, 1990. Extensions to due dates must be requested in writing with appropriate justification prior to the due date.

If you have any questions, please contact either Catherine E. Hampton at (702) 794-7973 or FTS 544-7913, or Stephen R. Dana of Science Applications International Corporation at (702) 794-7176 or FTS 544-7176.

Donald G. Horton, Director
Office of Quality Assurance

Enclosure:
CAR BQ-91-012

cc w/encl:
N. J. Brogan, SAIC, Las Vegas, NV, 517/T-08

cc w/o encl:
D. E. Shelor, BQ (RW-30) FORS
Bob Clark, BQ (RW-3) FORS
R. J. Brackett, BQ (RW-3) FORS
J. W. Gilray, NRC, Las Vegas, NV
K. R. Hooks, NRC, Las Vegas, NV
R. R. Loux, NWPO, Carson City, NV
W. Zimmerman, NWPO, Carson City, NV
V. Tiesenhausen, Clark County, NV
hillip Niedjielski-Eichner, Nye County, NV
m Colandrea, EEI, San Diego, CA

CONCURR
RTG. SYM
YMP
INITIALS
DATE
11/21/90
RTG. SYM
YMP
INITIALS
DATE
11/21/90
RTG. SYM
INITIALS
DATE
RTG. SYM
INITIALS
DATE
RTG. SYM
INITIALS
DATE
RTG. SYM
INITIALS
DATE
RTG. SYM
INITIALS
DATE
RTG. SYM
INITIALS
DATE

bcc w/encl:
C. P. Gertz, YMP, NV

bcc w/o encl:
S. R. Dana, SAIC, Las Vegas, NV, 517/T-06
S. R. Dippner, SAIC, Las Vegas, NV, 517/T-08
M. B. Blanchard, YMP, NV
W. R. Dixon, YMP, NV
V. F. Iorii, YMP, NV
E. H. Petrie, YMP, NV
W. A. Wilson, YMP, NV

WORDPROCESSING TRACKING FORM

ORIGINATOR: Hampton

DOCUMENT NO: KI 1424

RECEIVED IN PSDO FOR DRAFT:

DATE: _____

TIME: _____

RETURNED TO ORIGINATOR:

DATE: _____

TIME: _____

RECEIVED IN PSDO FOR DRAFT:

DATE: _____

TIME: _____

RETURNED TO ORIGINATOR:

DATE: _____

TIME: _____

RECEIVED IN PSDO FOR FINAL:

DATE: 11-21-90

TIME: 10:30

RETURNED TO ORIGINATOR:

DATE: 11-21-90

TIME: 12:00

RECEIVED IN PSDO FOR FINAL:

DATE: _____

TIME: _____

RETURNED TO ORIGINATOR:

DATE: _____

TIME: _____

RECEIVED IN PSDO FOR FINAL:

DATE: _____

TIME: _____

RETURNED TO ORIGINATOR:

DATE: _____

TIME: _____

RECEIVED IN PSDO FOR FINAL:

DATE: _____

TIME: _____

RETURNED TO ORIGINATOR:

DATE: _____

TIME: _____

RECEIVED IN PSDO FOR FINAL:

DATE: _____

TIME: _____

RETURNED TO ORIGINATOR:

DATE: _____

TIME: _____

SPECIAL INSTRUCTIONS:

LETTER NO. 929

FORM LETTER

DATE 11-21-90

DOC. I.D# CEH:SRO:SRO:5744

DOE LETTER TRANSMITTAL FORM

To: Bartlett From: Starlon

Subject: Issuance of CAR. HQ-91-012 from OCRWM QA Audit 90-I-01

DOE Requestor: Hampton Action Item No.

SAIC Author: Dana Date __/__/__

SAIC Typist: Brogan Date __/__/__

Transmitted by: Dygpau Date __/__/__

ATTENTION: Helga

* * * * * * * * * * *

Received @ WMPO _____ Date __/__/__

Final Document: WMPO Letter # _____

Accession # _____

RETURN THIS FORM TO SAIC

* * * * * * * * * * *

(For SAIC Use Only)

Document Deleted _____ Date __/__/__

Department of Energy
Washington, DC 20585

WBS 1.2.9.3
QA

NOV 23 1990

John W. Bartlett, Director, Civilian Radioactive Waste Management,
HQ (RW-1) FORS

ISSUANCE OF CORRECTIVE ACTION REQUEST (CAR) HQ-91-012 RESULTING FROM OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT QUALITY ASSURANCE (QA) AUDIT 90-I-01

Enclosed is CAR HQ-91-012 generated as a result of QA Audit 90-I-01.

Please identify the corrective actions to be taken and implemented to correct the deficiencies. A CAR Continuation Sheet and instructions for completion have been provided. Send the original of your response to Nita J. Brogan, Science Applications International Corporation, Las Vegas, Nevada. Response to the CAR is due by December 7, 1990. Extensions to due dates must be requested in writing with appropriate justification prior to the due date.

If you have any questions, please contact either Catherine E. Hampton at (702) 794-7973 or FTS 544-7913, or Stephen R. Dana of Science Applications International Corporation at (702) 794-7176 or FTS 544-7176.

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

Enclosure:
CAR HQ-91-012

cc w/encl:
N. J. Brogan, SAIC, Las Vegas, NV, 517/T-08

cc w/o encl:
D. E. Shelor, HQ (RW-30) FORS
Bob Clark, HQ (RW-3) FORS
R. J. Brackett, HQ (RW-3) FORS
J. W. Gilray, NRC, Las Vegas, NV
K. R. Hooks, NRC, Las Vegas, NV
R. R. Loux, NWPO, Carson City, NV
S. W. Zimmerman, NWPO, Carson City, NV
E. V. Tiesenhausen, Clark County, NV
Phillip Niedjielski-Eichner, Nye County, NV
Tom Colandrea, EEI, San Diego, CA

bcc w/encl:
C. P. Gertz, YMP, NV

bcc w/o encl:
S. R. Dana, SAIC, Las Vegas, NV, 517/T-06
S. R. Dippner, SAIC, Las Vegas, NV, 517/T-08
M. B. Blanchard, YMP, NV
W. R. Dixon, YMP, NV
V. F. Iorii, YMP, NV
E. H. Petrie, YMP, NV
W. A. Wilson, YMP, NV

ORIGINAL
THIS IS A RED STAMP

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

14CAR NO.: EQ-91-012
DATE: 11/21/90
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
QAAP 3.6, Revision 0	Audit No. 90-I-01

3 Responsible Organization	4 Discussed With
RW-30	W. Lemeshewsky/M. Senderling

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
12/07/90	Dwight Shelor	N

5 Requirement:

Section 6.2.1 states, "The approved list of input sources, and revisions thereto, for each document shall be provided by the Branch Chief responsible for the technical document to the Branch Chief, CMB who shall maintain a controlled master list of input sources for the technical documents."

6.2.2 states, "The Branch Chief, CMB shall determine which Branch Chief has cognizance for the functional area relating to each specific input (for example, licensing inputs to the Licensing Branch, environmental inputs to the Environmental Compliance Branch), and shall so indicate on the controlled master list of input sources."

6 Adverse Condition:

1. The approved lists of input sources for each document has not been provided by the Systems Engineering Branch Chief to the Branch Chief, CMB.

   NOTE: The list of input sources for the WMSR Volume I, Revision 1 has been transmitted to the Branch Chief, CMB.

2. A controlled master list of input sources has not been generated.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in Block 6.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
E. P. Bryant	11/19/90	1☐ 2☐ 3☒	OQA	11/20/90

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

ENCLOSURE

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

CAR NO. _____
DATE: _____
SHEET: _____ OF _____

CORRECTIVE ACTION REQUEST
(continuation sheet)

REV. 10/90

The technical audit team believes that technical baseline development requires rethinking and greater coordination between the two locations than has taken place. The engineering groups have taken immediate action in correcting the deficiencies identified, as is evidenced by the items corrected during the audit (reference Sections 6.2 and 6.3 of this report). This should be commended. In addition, a very positive action in the system engineering areas is the Systems Engineering Training Course developed for the Project. Technical training of a non-procedural nature, which is available to a broad spectrum of the technical staff, appears to be an important factor in implementing the technically-driven aspects of the project.

3. Sample Management Facility (SMF)

Activities at the SMF were evaluated during the Project Office section of the audit in the following areas:

- o Sample, item, and data control.
- o Measuring and test equipment control.
- o Handling, shipping, and storage.

The Project Office has responsibility for management and operation of the SMF, located at the Nevada Test Site. The T&MSS contractor is responsible for the curation and control of samples housed at the SMF. The operation of the SMF is described and controlled via SMF Branch Technical Procedures BTP-SMF-001 through 008. These procedures describe and control the various aspects of SMF activity in a logical fashion, without specific separation by quality assurance function as identified by the audit criteria. Support for the facility including calibration is provided by Reynolds Electrical and Engineering Company, Inc. (REECo).

Operation of the SMF was evaluated using the "vertical slice" method. The aim of the evaluation was to determine the status of implementation of the technical procedures and to determine that the implementing procedures (technically) do ensure that the controls imposed by the QAPD are met. At the time during which the audit of this facility began, the QA Grading Package covering the SMF activities had not yet been approved. However, this situation was corrected during the course of the audit. The technical audit team identified which controls were in place at the facility and the appropriateness of these controls to the activities performed.

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

CAR NO. _____
DATE: _____
SHEET: _____ OF _____

CORRECTIVE ACTION REQUEST (continuation sheet)

(PREFERRED FORMAT)

CORRECTIVE ACTION RESPONSE:

1. **CORRECTIVE ACTION FOR DEFICIENT CONDITION #_____**

   A. Extent of Deficiency: (required for Severity Level 1 - also for Severity Level 2 if requested by OQA)

   [Document investigative action and identify the extent of the deficient condition.]

   B. Root Cause: (required for Severity Levels 1 & 2)

   [Determine and identify the root cause for the deficient condition.]

   C. Remedial Action: (action to correct the deficient condition - required for all CARs)

   [Provide concise statement of each specific remedial corrective action with name of responsible individual and scheduled completion date.]

   D. Corrective Action to Prevent Recurrence: (action taken to address the root cause and prevent recurrence of the deficient condition - required for Severity Levels 1 & 2)

   [Provide concise statement of each specific action with name of responsible individual and scheduled completion date.]

2. [Repeat 1 above for each deficient condition.]

Response Approved: _____ _____
Responsible Manager Date

REV. 10/90