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U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
OFFICE OF QUALITY ASSURANCE

AUDIT REPORT

OF

REYNOLDS ELECTRICAL AND ENGINEERING COMPANY, INC.
LAS VEGAS, NEVADA
AND
NEVADA TEST SITE

AUDIT YMP-94-04
MAY 2 THROUGH 6, 1994

Prepared by: JE Rodgers for Date: 7/12/94
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Approved by: RC Spence For Date: 7/15/94
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1.0 EXECUTIVE SUMMARY

As a result of Quality Assurance (QA) Audit YMP-94-04, the audit team determined that Reynolds Electrical and Engineering Company, Inc. (REECo) is satisfactorily implementing an effective QA program in accordance with the U.S. Department of Energy (DOE) Office of Civilian Radioactive Waste Management (OCRWM) Quality Assurance Requirements and Description (QARD), DOE/RW-0333P, Revision 0, for the Civilian Radioactive Waste Management Program and REECo implementing procedures for QA Program Elements 1.0, 2.0, 5.0, 6.0, 8.0, 10.0, 12.0, 13.0, 14.0, 15.0, 16.0, 17.0, and 18.0. QA Program Elements 4.0 and 7.0 were determined to have insufficient implementation since no quality-affecting items/services had been procured since the last audit of REECo in June of 1993. QA Program Element 9.0 was not evaluated due to no activity at this time.

There were no Corrective Action Requests (CAR) issued as a result of this audit. There were eight deficient conditions identified and subsequently corrected during the audit. These conditions are described in Section 5.5.2 of this report. Additionally, there were six recommendations resulting from the audit which are detailed in Section 6.0 of this report.

2.0 SCOPE

The audit was conducted to evaluate compliance to, and the effectiveness of, the REECo QA Program as described in the QARD and REECo implementing quality procedures.

Follow-up on previously issued CARs relating to the QA program elements audited was performed. Results of this follow-up are described in Section 5.5.3 of this report.

The QA program elements/requirements evaluated during the audit in accordance with the published audit plan are as follows:

QA Program Elements:

1.0 Organization
2.0 Quality Assurance Program
4.0 Procurement Document Control
5.0 Implementing Documents
6.0 Document Control
7.0 Control of Purchased Items and Services
8.0 Identification and Control of Items
9.0 Control of Special Processes
10.0 Inspection
12.0 Control of Measuring and Test Equipment

13.0 Handling, Storage, and Shipping
14.0 Inspection, Test and Operating Status
15.0 Nonconformances
16.0 Corrective Action
17.0 Quality Assurance Records
18.0 Audits

The following QA program elements/requirements were not reviewed during the audit because REECo has no activity for which these elements apply:

3.0 Design Control
11.0 Test Control
Supplement I, Software
Supplement II, Sample Control
Supplement III, Scientific Investigation
Supplement IV, Field Surveying

Technical Areas

The scope of this audit did not include any technical areas.

3.0 AUDIT TEAM AND OBSERVERS

The following is a list of audit team members, their assigned areas of responsibility, and observers:

Name/Title	QA Program Elements/Requirements
Frank J. Kratzinger, Audit Team Leader (ATL), Yucca Mountain Quality Assurance Division (YMQAD)/Quality Assurance Technical Support Services (QATSS)	
Amelia I. Arceo, Auditor, YMQAD/QATSS	15 and 17
Donald J. Harris, Auditor, YMQAD/QATSS	4 and 7
Raul A. Hinojosa, Auditor, YMQAD/QATSS	8, 12, and 13
Robert H. Klemens, Auditor, YMQAD/QATSS	1 and 2
Kenneth T. McFall, Auditor, YMQAD/QATSS	9, 10, and 14
Steve P. Nolan, Auditor, YMQAD/QATSS	16 and 18
John F. Pelletier, Auditor, YMQAD/QATSS	15 and 17
Richard L. Weeks, Auditor, YMQAD/QATSS	5 and 6
John Gilray, Observer, U.S. Nuclear Regulatory Commission (NRC)	
Bruce Mabrito, Observer, NRC/Southwest Research Institute	

4.0 AUDIT MEETINGS AND PERSONNEL CONTACTED

The preaudit meeting was held at the REECo office in the Bank of America Center in Las Vegas, Nevada, on May 2, 1994. A daily debriefing and coordination meeting was held with REECo management and staff, and daily audit team meetings were held to discuss issues and potential deficiencies. The audit was concluded with a postaudit meeting held at the REECo office in the Bank of America Center in Las Vegas, Nevada, on May 6, 1994. Personnel contacted during the audit are listed in Attachment 1 of this report. The list includes an indication of those who attended the preaudit and postaudit meetings.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Effectiveness

The audit team concluded that, in general, the REECo QA Program is adequate and is being satisfactorily implemented for the scope of this audit. Individually, QA Program Elements 1.0, 2.0, 5.0, 6.0, 8.0, 10.0, 12.0, 13.0, 14.0, 15.0, 16.0, 17.0, and 18.0 are satisfactorily implemented. QA Program Elements 4.0 and 7.0 were determined to have insufficient implementation since no quality-affecting items/services had been procured since the last audit of REECo in June of 1993. QA Program Element 9.0 was not evaluated due to no activity at this time.

5.2 Stop Work or Immediate Corrective Actions or Additional Actions

There were no Stop Work Orders or immediate corrective actions resulting from this audit, however, the following additional actions resulted from the audit.

The Requirements Traceability Network (RTN) Matrix for REECo was found to be missing appropriate references which are contained in REECo's implementing procedures but omitted from the RTN Matrix. REECo was given a list of proposed fixes to the RTN Matrix by the audit team and will forward the required changes for the RTN Matrix to YMQAD within 60 days of the postaudit meeting.

As a result of this audit, three surveillances were proposed to ensure satisfactory close-out of work being performed by REECo. These surveillances are as follows:

1. The processing of starter tunnel construction records during the verification process.

2. Verification of the closure to REECo CARs 94-005 and 94-006 for failure to take timely action to resolve the original deficiencies cited in Deficiency Notice (DN) 94-003 and DN 94-004.

3. Follow-up on REECo CAR 94-004 where a Stop Work was issued on material control.

5.3 QA Program Audit Activities

Details of the QA program audit activities are provided in Attachment 2. A list of objective evidence reviewed during the audit is provided in Attachment 3.

5.4 Technical Activities

No technical activities were included in the scope of this audit.

5.5 Summary of Deficiencies

The audit team identified eight deficiencies during the audit which were corrected prior to the postaudit meeting. A synopsis of the deficiencies corrected during the audit are detailed in Section 5.5.2.

5.5.1 Corrective Action Requests

There were no CARs issued as a result of this audit.

5.5.2 Deficiencies Corrected During the Audit

Deficiencies which are considered isolated in nature and only require remedial action, can be corrected during the audit. The following eight deficient conditions were identified and corrected during the audit:

1. Management Control Procedure (MC)-12.0, Revision 2, Paragraph 6.7.1.4 states, "Records generated by REECo which will become part of a Job Package (JP) record package shall be submitted to the Yucca Mountain Site Characterization Office (YMSCO) Document Records Center (DRC) according to reference 3.15 (Administrative Procedure [AP]-6.22Q). A duplicate of the completed form used to submit records to the DRC shall be sent to the Information Service Center (ISC)...." AP-6.22Q, Revision 0, Interim Change Notice (ICN) 1, Section 5.0, Step 9, 2nd Sentence, states, "JP Participants - Submit completed records to the DRC using the records package tracking number in accordance with AP-1.18Q...."

Contrary to the requirements, the records generated for the Rock Storage Pad Geomembrane Liner associated with JP 92-20 were submitted without using the records package tracking number. Furthermore, the records were identified on the Transmittal/Receipt Acknowledgement (TRA), (form YMP-091-R1, AP-1.18Q), as "Record" instead of "Segment." The records package was retrieved and retransmitted to the DRC identifying it as a Segment with the Tracking Number/Identifier DRC-026A on the TRA (form YMP-091-R1, AP-1.18Q) on 5/6/94. "Segment of JP 92-20" was annotated on the form.

2. MC-12.1, Revision 2, ICN 2, Paragraph 6.1.3.5 requires that record packages must include a Table of Contents that contains an inventory of the contents of the package by listing the individual records that constitute the package and indicating the page count for each individual record or group of records.

   Contrary to the requirement, the Table of Contents record package for REECo-YMP Surveillance Report SR-014-94 of REECo Engineering did not identify the Surveillance Plan on the Table of Contents. The record package was resubmitted to the ISC with the corrected Table of Contents which listed the Surveillance Plan and increased the number of pages from 8 to 9 on May 5, 1994 (Document Identification No. SR-014-94/94-003705).

3. MC-12.0, Revision 2, Paragraph 6.6.4.3 requires that the REECo Technical Project Officer (TPO) provide, by letter to the TPO of the participant organization responsible for operating the Las Vegas (LV), Local Records Center (LRC) and the Central Records Facility (CRF), a list of names of REECo personnel authorized access to DOE System 80 Records. The latest letter was generated by R. F. Pritchett on March 9, 1992 which included personnel not currently employed by REECo.

   Letter Number 580-01-453, dated May 6, 1994, with the Access List attached was issued by D. L. Koss, REECo TPO, to L. Dale Foust, TPO of the participant organization responsible for operating the LV LRC and the CRF.

4. MC-12.0, Revision 2, Paragraphs 6.2.1 and 6.6.4.2 require that the managers complete a Records Authorization Form (RAF), identifying the personnel within their organization and the records tasks they are authorized to perform; and those with authorized access to DOE System 80 Records.

Contrary to the requirements, the RAF for REECo personnel who are authorized to submit procurement records and who are authorized to access DOE System 80 Records was not completed. The RAF was completed by D. L. Koss, TPO for the Procurement and Property Management Department, on May 6, 1994, since the new department manager is not yet qualified to complete the form.

5. MC-09.1, Revision 4, Paragraph 6.2.1, sixth bullet, requires that the functional qualification level (by discipline) of personnel performing inspections be identified on inspection planning documentation.

   Contrary to the above requirement, inspection planning documents examined did not contain this information. The applicable form was revised to include the required information by ICN 1 prior to the postaudit meeting.

6. MC-09.1, Revision 4, Paragraph 6.8.3, requires that the inspector's level of qualification (I, II, or III) be included on the inspection documentation.

   The inspection checklists that were used in place of inspection reports for the lithium bromide storage tank tests did not include the inspector's level of qualification. REECo Quality Control (QC) personnel added the inspector's level of qualification to the applicable documentation prior to the postaudit meeting.

7. MC-06.3, Revision 1, Paragraph 6.4.5, requires that the recipient of controlled documents comply with the instructions provided on the transmittal for disposition of the document.

   Contrary to the above requirement, Field Change Request (FCR) 94/104 had not been posted against drawing YMP-025-1-MING-MG143, Revision 2, copy No. 101404.5. The FCR was posted against the drawing prior to the postaudit meeting.

8. MC-13.0, Revision 3, Paragraph 6.5.2.6, states that, "The auditor(s) using the QA Audit/Survey Checklist to perform his portion of the audit shall initial in the initials column next to the attribute to indicate his completion of the checklist." Exhibit III, Page 3 of 3, also states that for dispositions of N/A, the auditor is to provide an explanation in the Status Column.

Contrary to the above requirement, REECo Audit 001-93 checklist had some missing initials and several N/As were not sufficiently explained. The Lead Auditor was contacted and the checklist was corrected to the requirements prior to the postaudit meeting.

5.5.3 Follow-up of Previously Identified CARs

The below listed CARs previously issued to REECo during YMQAD Audits/Surveillances were reviewed to determine effectiveness of corrective actions.

1. CAR YM-93-055, issued on July 7, 1993, identified that supplier evaluations and testing were not performed for commercial grade items when required. Verified FCR 93/512 contained material dedication requirements for YMP-025-1-SP09, Section 02165 and 03361, dated September 15, 1993, and FCR 93/010, dated October 20, 1993, for bearing plates. Procedure MC-04.2, Receipt Inspection, Revision 1, was rewritten to incorporate the changes proposed in CAR YM-93-005. Supplemental Technical Inspection Reports (TIRs) addressing critical characteristics were generated to determine the adequacy of the inspection/test performed on quality-affecting Purchase Orders (POs) 1-QYP-01-3 and 37-YP-01-3. Verified the test requirements of the supplemental TIRs were in accordance with American Society for Testing Materials (ASTM) F432-91 Standard Specification for Rock Bolts and Accessories. The corrective action taken to disposition CAR YM-93-055 is considered to be effective.

2. CAR YM-93-057, issued on July 7, 1993, identified that documentation of samples tested does not provide for traceability to materials. Shotcrete Placement Logs were examined and found to indicate the Measuring and Test Equipment (M&TE) Calibration Number which provides traceability to the specific thermometer utilized. Logs for the following days were examined: 8/6/93, 8/17/93, 8/18/93, 8/20/93, 9/10/93, 9/13/93, 9/15/93, and 9/16/93. Corrective action is considered to be effective.

3. CAR YM-93-059, issued on July 7, 1993, identified that test result documentation of Fibercrete samples tested at seven days does not provide traceability that the mix design was for Fibercrete. Reviewed REECo transmittal No. 1A-03-191CMD to the Management and Operating (M&O) Contractor. The new package included Shotcrete Placement Logs that were traceable to acceptable Fibercrete test results and to POs that are traceable to verify that the

product placed and tested was Fibercrete. The corrective action taken to disposition CAR YM-93-059 is considered to be effective.

4. CAR YM-93-060, issued on July 7, 1993, identified that inaccurate and missing information was recorded on Shotcrete Placement Logs. The same Shotcrete Placement Logs identified in CAR YM-93-057 were examined to determine effectiveness of corrective action. For the examined logs, identification numbers were accurate, batch numbers were correct, drawing numbers were listed and all corrections were made in accordance with procedural requirements. Corrective action is considered to be effective.

5. CAR YM-93-084, issued on July 28, 1993, identified that AP-5.39Q was not being used when requesting work from the Raytheon Services Nevada Materials Test Laboratory. Reviewed Yucca Mountain Project Technical Field Work Request No. 93423, dated September 29, 1992, and REECo's QC Material Test Request Log. The corrective action taken to disposition CAR YM-93-084 is considered to be effective.

6. CAR YM-94-011, issued on December 14, 1993, identified that documentation of rock bolt installation was incorrectly completed. Verified that REECo procedure TC-501-SP-0011 was revised by ICN 1, dated February 3, 1994, to clarify the construction department sign-off on the Rock Bolt Installation and Testing Log. The corrective action taken to disposition CAR YM-94-011 is considered to be effective.

6.0 RECOMMENDATIONS

The following recommendations resulted from the audit and are presented for consideration by REECo management.

1. There should be a surveillance of the processing of construction records, either during the verification process of the open DNs, DN-94-017 and DN-94-021, or after these DNs are closed specifically to ensure that the problem about duplicate records is resolved.

2. The processing of JP records needs to be surveilled.

3. The records section of examined REECo procedures refers to "QA Records" and "Project Records." However, the QARD identifies lifetime and nonpermanent as the terminology to classify quality assurance records. Although REECo procedure MC-12.1, Revision 3, clearly distinguishes

between lifetime and non-permanent records, it is recommended that REECo adopt the same terminology as identified in the QARD for consistency.

4. REECo has a Controlled Document Center (CDC) database for tracking FCRs that are posted against drawings, specifications, Work Programs, Test Planning Packages (TPPs), and JPs. It is recommended that this system be adopted by the YMSCO to serve all Affected Organizations whose work is impacted by FCRs. The reports generated by this database provide the user with a summary of controlled documents and corresponding FCRs or a summary of FCRs and corresponding controlled documents. This is an effective method of communicating changes to controlled documents.

5. While reviewing Document Review Record (DRR) forms, it was not always clear as to what type of review was being conducted (i.e., technical, QA, or management). It is recommended that REECo add a block to the DRR form which would allow the type of review to be indicated.

6. REECo CAR CA-94-004 identified that the storage laydown areas on the Exploratory Studies Facility (ESF) Pad were not meeting requirements. It is recommended that for future storage laydown areas, REECo submit to the YMSCO a plan designating those areas for the appropriate type of storage planned.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit
Attachment 2: Audit Details
Attachment 3: List of Objective Evidence Reviewed During the Audit

ATTACHMENT 1

Personnel Contacted During the Audit

Name	Organization/Title	Preaudit Meeting	Contacted During Audit	Postaudit Meeting
Arnold, J.	REECo, Sr. Engineer		X	
Azhikakath, M.	REECo, Engineering	X		
Barker, M. C.	REECo, Trng. Admin.	X	X	X
Boyd, D.	REECo, Matl. Control Supv.		X	
Burnet, D.	REECo, Dept. Mgr.	X	X	X
Bryant, E. P.	REECo, Sr. QAE	X		
Costello, P.	REECo, Operational Supt.		X	
Davenport, C.	REECo, Sr. Staff Assistant			X
Doyle, J.	YMQAD, QA Specialist		X	
Erickson, G.	REECo, Supv. Cal. Lab		X	
Faiss, E. J.	REECo, Staff Assistant	X		X
Gardella, B.	REECo, Dept. Mgr.	X	X	
Gelman, A.	REECo, Survey Party Chief		X	
Glasser, W. J.	REECo, PQAM	X	X	X
Gratza, W.	REECo, Sr. QA Specialist	X	X	X
Greene, H.	YMQAD, Div. Mgr.	X		X
Hackbert, D. A.	REECo, Sr. QA Specialist	X	X	X
Hasson, B.	REECo, Sr. QA Specialist		X	
Hedlund, J.	REECo, Sr. Eng., CND		X	
Hodges, K. A.	REECo, Sr. QA Specialist		X	
Jerome, K.	M&O, Records Clerk		X	
Keating, J.	REECo, Senior Eng.		X	
Kehrmann, B.	REECo, Field Engineer		X	
Knight, D.	REECo, Pr. Eng.			X
Koss, D.	REECo, TPO	X	X	X
Leonard, T. M.	REECo, Dept. Mgr.	X	X	X
Limon, K. L.	REECo, IMD Mgr.	X	X	X
Mauser, E.	REECo, QA Spec. III		X	
McGoldrick, J.	REECo, Purchasing Agent			X
McMullen, A.	REECo, Grp. Leader ISC		X	
Moulder, M. D.	REECo, CDC Supv.	X	X	X
Norris, L.	REECo, Secretary II		X	
Patel, K.	REECo, Sr. Engineer		X	
Pugmire, W. C.	REECo, QC Sect. Chief	X	X	X
Reiter, E.	REECo, Sr. QA Specialist		X	
Ricks, S.	REECo, QA Specialist		X	
Robbins, L.	REECo, Admin. Records Coord.		X	

Personnel Contacted During the Audit

Name	Organization/Title	Preaudit Meeting	Contacted During Audit	Postaudit Meeting
Rodgers, T. E.	YMQAD, Sr. QA Specialist			X
Rommel, R. R.	REECo, Project Eng.		X	
Singer, S.	REECo, Project Mgr. Construction		X	
Sorensen, V.	REECo, Sr. Matl. Control Agent		X	
Sunday, R.	REECo, Procurement		X	
Waggoner, W.	M&O, QA		X	
Wasson, B. G.	REECo, Procurement	X		
Weintraub, S.	REECo, Staff			X
Westby, A.	REECo, Sr. QA Specialist		X	
Williams, A. C.	DOE, Gen. Eng.			X
Williams, B. C.	REECo, Office Assist. III		X	
Williams, E. K.	REECo, QA Spec. II		X	
Wilson, P. J.	REECo, Sr. QA Specialist	X	X	X
Wonderly, D.	REECo, Dept. Mgr.	X	X	X
Ziehm, S. A.	REECo, IMD S/C	X	X	X

Legend:

IMD S/C - Information Management Department
QAE - Quality Assurance Engineer

ATTACHMENT 2

Audit Details

The following is a summary of the REECo QA Program activities evaluated during the audit. The list of objective evidence reviewed and specific procedures audited is provided in Attachment 3.

1.0 ORGANIZATION

The evaluation of this QA program element was based on interviews with REECo management and QA personnel and examination of objective evidence to determine the degree of compliance with selected requirements from MC-01.0, MC-01.1, MC-01.2 and MC-01.3. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below.

Organization (QARD, Section 1.0)

Requirements:

- The QA Manager's position shall be the same or higher organization level as the highest line manager directly responsible for performing work subject to QARD requirements.
- The QA Manager's position shall be sufficiently independent of cost and schedule considerations.

Results:

Organizational charts were reviewed and the QA Manager was interviewed. QARD requirements have been adequately incorporated into REECo's implementing procedures.

Organization (MC-01.0)

Requirements:

- The responsibilities of the Program Quality Assurance Manager (PQAM) are to:
  - Assist line organizations, develop the QA program and overview work subject to QARD requirements.

- Represent REECo/YMP in all quality matters requiring internal and external interface between participating organizations and/or support contractors.

- Maintain a QA/QC reporting system, conducting special training, and certifying inspection and testing personnel.

- The Field QC Section reports directly to the PQAM and has the functional responsibility for inspections. Other responsibilities include:

  - Review, approval and control of all inspections checklists generated in accordance with the project/program requirements, in order to document results of inspections and tests performed.

  - Review and approve construction and inspection plans.

- The Quality Assurance Office (QAO) staff members have understanding and are knowledgeable of their responsibilities including stop work authority.

- The IMD Manager has knowledge and understanding of the responsibilities concerning records management.

- The CND Manager has knowledge and understanding of the responsibilities concerning surface and underground construction, operations and maintenance, and construction engineering sections.

- The Drilling Department Manager has knowledge and understanding of the responsibilities concerning drilling engineering, rig operations, and electrical/mechanical support.

- The Control Department (CLD) Manager has knowledge and understanding of the responsibilities concerning scheduling, estimating, cost and material control.

- The REECo Matrix Support Organization responsibilities were verified for the following:

  - Environment, Safety and Health
  - Operation and Maintenance
  - Support Services
  - Administration

Results:

Interviewed the PQAM, Field QC, and all of the line managers as indicated. Results were satisfactory.

Stop Work Authority (MC-01.1)

A CAR (CA-94-004) was written by REECo on Material Control and a Stop Work notice is in process.

Resolution of Disputes (MC-01.2)

This procedure has not been implemented since its effectivity date of January 28, 1992.

Delegation of Authority (MC-01.3)

Requirements:

- Department Managers are responsible for following the procedure in the preparation and distribution of delegation of authority memos.
- Letters delegating responsibility or authority are lifetime QA records.

Results:

The audit team interviewed department managers and reviewed letters delegating responsibility or authority. It was determined that the requirements of MC-01.3, Delegation of Authority, are being implemented for the preparation and distribution of Delegation of Authority Memos.

Summary for the QA Program Element:

The REECo implementing procedures were found to adequately incorporate QARD requirements based upon the sample selected for evaluation.

During the course of the evaluation, objective evidence in the form of organizational charts, and line of succession/delegation of authority letters were reviewed for compliance. In addition, interviews were held with all line managers to evaluate their knowledge and understanding of the implementing procedures associated with this QA element. The results of the evaluation indicated satisfactory compliance with the procedural requirements.

Based on the examination of the above requirements, implementation of QA Program Element 1.0, Organization, is satisfactory.

2.0 QUALITY ASSURANCE PROGRAM

The evaluation of this QA program element was based on interviews with REECo QA Organization Management and the examination of objective evidence to determine compliance with selected requirements taken from the following implementing procedures: MC-02.0, MC-02.1, MC-02.4, MC-02.4.1, MC-02.4.2, MC-02..4.3, MC-02.4.4, MC-02.4.5, MC-02.5, MC-02.8 and MC-13.2. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation and effectiveness are listed below:

Quality Assurance Program (QARD, Section 2.0)

Requirements:

- Affected Organizations shall issue a policy statement signed by senior line management directing mandatory compliance with the QA Program.
- Affected Organizations shall establish quality assurance implementing documents applicable to their scope of work that translate QARD requirements into work processes.

Results:

QARD requirements have been adequately incorporated into REECo's implementing procedures.

Quality Assurance Program (MC-02.0)

Requirements:

- REECo will prepare, control and maintain a QARD matrix for the REECo/YMP scope of work. This matrix will identify where in the REECo/YMP procedure system each QARD requirement is addressed.
- Revisions to the QARD shall be reviewed by the REECo/YMP QA office in order to ensure incorporation of changes which may affect the implementing procedures.

Results

The audit team reviewed the QARD Matrix to identify where in the REECo/YMP procedure system each QARD requirement is addressed. Results were satisfactory.

Determination of Importance (MC-02.1)

Requirements:

- A Quality Implementing Plan (QIP) shall be written for activities associated with each item identified on the Q List.
- An Activity Grading Worksheet (AGW) shall be generated and used to select the YMP QA controls that are to be implemented.

Results:

Two documents were reviewed. Results were satisfactory.

Training and Qualification (MC-02.4)

Requirements:

- Qualification and training of REECo personnel performing quality affecting work on the YMP will be done in accordance with MC-02.4.
- Resultant records and record packages shall be handled in accordance with requirements of DOE System 80.

Results:

Fifteen training files were reviewed. Results were satisfactory.

Management Assessment (MC-02.5)

Requirements:

- A management assessment is performed annually, as a minimum.
- TPO selects management assessment team and appoints the team leader.

Results:

No action has occurred this year to date.

YMP Indoctrination and Training (MC-02.4.1)

Requirements:

- The Training Administrator (TA) provides a system for maintaining documentation of indoctrination and training of personnel at REECo/YMP.

Results:

The TA prepares the Training Requirements Form (TRF) for REECo/YMP personnel and submits it to the requesting manager. Results were satisfactory.

Personnel Qualification and Certification (MC-02.4.2)

Requirements:

- Individual education and experience are verified by Human Resources. Verification Records are maintained.

Results:

The TA maintains verification of education and experience records. Results were satisfactory.

Required Reading (MC-02.4.3)

Requirements:

- Managers provide reading lists for their personnel on TRFs which are checked for completeness by the TA.

Results:

The TA maintains training records. Results were satisfactory.

Classroom Training (MC-02.4.4)

Requirements:

- The manager is responsible for identifying classroom training for personnel in his organization, and advising the TA by forwarding a completed TRF.

- The TA schedules classroom training and enrolls employees in classroom training courses.

- The TA maintains documentation of classroom training and submits records for filing.

Results:

Fifteen personnel files were reviewed and completed TRF files were checked for classroom training. Results were satisfactory.

Developing a Training Course (MC-02.4.5)

Requirements:

- The manager identifies classroom training requirements for the personnel in his/her department and forwards course development requests to the TA.

- The TA develops or coordinates the development of training courses.

Results:

Six Lesson Plan review forms and approval forms were evaluated. Results were satisfactory.

Preparation, Review and Approval of Quality Assurance Program Plan (QAPP) Change Notice (MC-02.8)

MC-02.8 is to be cancelled and replaced by the QARD requirement.

Surveillances (MC-13.2)

Requirements:

- The PQAM is responsible for assuring that surveillances of YMP activities are accomplished in accordance with MC-13.2, by trained and qualified personnel.

- The QAO is responsible for performing the surveillances, reviewing and evaluating the results, follow-up and tracking and resolution of deficiencies and closure.

Results:

Four surveillances were reviewed. Results were satisfactory.

Summary for the QA Element:

The REECo implementing procedures were found to adequately incorporate QARD requirements based upon the sample selected for evaluation. Based on the interview(s) conducted and review of objective evidence, the implementation of QA Program Element 2.0 is satisfactory.

4.0 PROCUREMENT DOCUMENT CONTROL
7.0 CONTROL OF PURCHASED ITEMS AND SERVICES

The evaluation of these QA program elements was based on interviews with REECo procurement and quality assurance management and staff. A sample of requirements from the QARD was selected for these QA program elements to verify adequate requirements methodology incorporation into REECo's implementing procedures. This was accomplished by a comparison of the written procedure text against what was provided by REECo in the QARD RTN Matrix. Examination of objective evidence to determine compliance with selected requirements was taken from MC-03.0, MC-03.1, MC-03.2, MC-03.2.1, MC-03.3, MC-04.2 and MC-06.2. The specific requirements selected for evaluation of adequacy, compliance and effectiveness are listed below.

Procurement Document Control (QARD, Section 4)

Requirements:

Procurement documents issued by each affected organization shall include the following provisions, as applicable to the item or service being procured.

Technical Requirements

- Identification or reference of the design bases.
- Identification of drawings, codes, standards, regulations, procedures, instructions, and their revision levels.
- Identification of test, inspections, or acceptance requirements that the purchaser will use to monitor and evaluate the performance of the supplier.

Quality Assurance Program Requirements

- Requirements for the supplier to have a documented QA program that implements applicable QARD requirements prior to the initiation of work.
- Requirements for the supplier to incorporate the appropriate QARD requirements into any subtier supplier issued procurement document.

- Purchaser may permit some or all work to be performed under the purchaser's QA program.

- Procurement documents shall specify the purchaser's implementing documents applicable to the supplier and provide those documents.

- Rights of access to supplier's facilities and records for inspection or audit by purchaser, OCRWM or designee.

- Provisions for establishing hold points in which work cannot proceed without authorization.

- Documentation required to be submitted for information, review, or acceptance, including submittal schedule or documents the supplier is to maintain with retention times and disposition requirements.

- Requirements for the supplier to report nonconformances with recommended use-as-is, or repair dispositions for the purchaser's approval.

- Identification of spare and replacement parts or assemblies with the appropriate technical and quality assurance data required for ordering.

Procurement Document Review and Approval

- Procurement document reviews shall be performed and documented prior to issuance.

- Procurement documents shall include appropriate provision to ensure that items and services meet governing requirements.

- Reviews shall ensure that all technical and quality assurance program requirements are included.

- Reviews shall be performed by personnel having pertinent information and adequate understanding of the requirements and scope of the procurement.

- Reviews shall include representatives from both the technical and QA organizations.

- Procurement documents shall be approved.

Procurement Document Change

- Changes shall be subject to the same degree of control as used in the preparation of the original procurement documents.

- Changes as a result of the proposal/bid evaluations or pre-contract negotiation shall be incorporated into the procurement documents. An evaluation of the changes for impact shall be completed before the contract is awarded.

Results:

QARD requirements are satisfactorily contained in the REECo implementing procedures.

Control of Purchased Items and Services (QARD, Section 7)

Requirements

- Supplier evaluation shall be performed before the contract is awarded to determine suppliers capability to provide items or services in accordance with procurement document requirements.

- Measures for evaluation shall include one or more of the following:

  - Supplier history
  - QA records
  - Facility survey/audit

- The proposal/bid evaluation shall determine the extent of conformance to the procurement document.

- The evaluation shall be performed by designated technically qualified organizations, including QA.

- The evaluation shall consider:

  - Technical considerations
  - Supplier personnel
  - Production capability
  - Past performance
  - Alternatives
  - Exceptions

- Supplier's QA program shall be accepted by the purchaser before work to the QARD is initiated.

- Supplier documents that are prepared or processed during work performed to fulfill procurement requirements are reviewed.

- Supplier generated document requirements include control, processing and acceptance of the documents.

- The method of accepting supplier furnished items shall include as appropriate:

  - Certificate of Conformance
  - Source verification, receiving inspection or post-installation test
  - Technical verification of the product
  - Surveillance or audit of the work
  - Review of objective evidence for conformance to requirements

- Documented evidence of acceptance of source verified items or services shall be furnished to the receiving destination.

- Inspection shall verify, as applicable, proper configuration; identification; dimensional, physical, and other characteristics; freedom of damage and cleanliness.

- Receiving inspection shall be coordinated with a review for adequacy and completeness of any supplier documentation submittals.

- Post-installation testing requirements shall be mutually established by the purchaser and the supplier.

- Supplier shall submit NCR to purchaser with recommended disposition for "use as is" or repair when:

  - Technical requirements are violated
  - Requirements documents approved by the purchaser are violated
  - Nonconformance cannot be reworked
  - Item does not conform to requirements but the function of the item is unimpaired

- After receipt of commercial grade items, the purchaser shall insure that:

  - Damage was not sustained during shipment.
  - The item received was the item ordered.
  - Inspection or testing is accomplished to the extent determined by the purchaser to ensure conformance with the manufacturer's published requirements.
  - Documentation was received and is acceptable.

Results:

The QARD requirements have been adequately incorporated into the REECo implementing procedures.

Supplier Quality Approval (MC-03.2.1)

Requirements:

- The applicable portions of the supplier's QA program shall be evaluated and approved prior to the supplier being issued a contractual document whenever one of the following conditions exist:

  - Item acceptance is based solely upon a supplier Certificate of Compliance.

  - Item acceptance is based partly on Source Verification (SV) Technical Inspection Report (TIR) or Post- Installation with some reliance upon the supplier's QA program implementation.

  - Item being procured is an engineered item.

  - As directed by REECo/YMP management on YMPO specifications.

- The measures for the evaluation and approval of procurement sources shall include one or more of the following:

  - Evaluation of the supplier's history that reflects current capability of providing identical or similar items.

  - Evaluation of the supplier's current QA program documents, supported by qualitative and quantitative objective evidence.

- Evaluation of the supplier's technical and quality capabilities through direct assessment of the facility, personnel, and QA program implementation.

- The QAO shall evaluate those portions of the supplier's QA program which are applicable to the scope of the procurement requirements to determine that the REECo/YMP procurement QA requirements will be met.

- The results of the QAO review shall be documented on a checklist or other form that specifies the applicable quality criteria and the supplier's conformance or nonconformance.

- The REECo/YMP Approved Supplier List (ASL) shall include the following minimum data for each approved supplier:

  - Supplier's full company name,

  - The full name and address of the supplier's facility that was evaluated,

  - The specific items or services that the supplier is qualified to provide,

  - Any limitations, restrictions, or source verification requirements that are placed upon the supplier,

  - The date of the supplier survey that was used to approve the supplier and the name of the company, if other than REECo/YMP, that performed the survey,

  - The title and revision of the supplier's QA program document that was evaluated and approved by the QAO,

  - The 10CFR50, Appendix B, criteria applicable to the supplier's QA program for the items or services being provided,

  - The date of the next scheduled audit or survey of the supplier's facility, and

  - The date of the next scheduled annual supplier performance evaluation.

Summary for the QA Program Elements

REECo has not procured any quality affecting items or services since the last YMQAD program audit performed of REECo in June of 1993. Therefore, except for

supplier quality approval, program implementation could not be evaluated at this time due to insufficient activity in this area.

5.0 IMPLEMENTING DOCUMENTS

The evaluation of this QA program element was based on interviews with REECo personnel responsible for implementation of program requirements; and examination of objective evidence to determine compliance with the requirements from MC-05.0, MC-05.1, MC-05.2 and MC-05.3. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation and of adequacy, compliance and effectiveness are listed below.

Implementing Documents (QARD, Section 5.0)

Requirements:

- Implementing documents include quantitative or qualitative acceptance criteria sufficient for determining that activities were satisfactorily accomplished.
- Documents that specify technical requirements, quality requirements or prescribe work shall be reviewed for adequacy, correctness and completeness, according to the requirements of Section 2.0, prior to approval and issuance.
- Effective dates are established for approved implementing documents.
- Implementing documents include quality verification points, as appropriate.
- Implementing documents shall include, as appropriate, methods for demonstrating that the work was performed as required.

Results:

The REECo implementing procedures were found to adequately incorporate QARD requirements based upon the sample selected for evaluation.

Instructions, Procedures and Drawings (MC-5.0)

Requirements:

- Procedures shall include a section in which quality assurance records generated as a result of implementation of the procedure were identified.
- Procedures included a history of changes, including the reason for the change.

- Changes to procedures shall be reviewed by the same organizations or technical disciplines affected by the procedure.

- The QA Office shall review changes to quality implementing documents that it previously reviewed.

- Mandatory review comments are documented and resolved before the document is approved.

- Examples of forms used as part of implementation of the procedure are identified in the procedure as either "Sample Format" or "Mandatory Use Form".

Results:

The evaluation of these requirements was accomplished by examination of objective evidence listed in Attachment 3. All examined procedures identified the required QA records and included a history of changes and reason for change. Review records for selected MC and TC implementing procedures indicated appropriate organizations completed reviews and all comments were dispositioned in accordance with procedural requirements. Forms identified in procedures were properly labeled. There were no deficiencies identified.

Preparation, Review & Approval of MC Procedures (MC-05.1)

Requirements:

- Approved MC's shall be signed by the PQAM.

- Each issued and approved MC shall include the following information: purpose and scope, applicability, references, definitions, responsibilities, procedure, records and exhibits.

- QA shall review quality implementing documents that translate QARD requirements into work processes.

- A log of ICNs is maintained by CDC.

- There are no more than five ICNs outstanding against a given procedure.

- Procedures are reviewed by responsible organizations for possible revision every three years.

Results:

Selected MC Procedures were examined and found to comply with the above requirements. The PQAM signed all procedures, the required information was included, and procedures were reviewed by QA. The log, which is maintained by CDC, of all internally controlled documents indicated that there were no more than five ICNs outstanding against any procedure. All sampled procedures had been reviewed within the past three years. There were no deficiencies identified.

Preparation, Review and Approval of Technical Control (TC) Procedures (MC-05.2)

Requirements:

- Procedures identify, as applicable, items, materials, activities, or processes which require inspection, control or verification.
- TC Procedures or documentation generated as a result of the procedure included or referenced appropriate qualitative and quantitative acceptance criteria.

Results:

Selected TC Procedures were examined and found to meet the requirements stated above. There were no deficiencies identified.

Preparation, Review and Approval of Work Procedures (MC-05.3)

Requirements:

- A log of Work Procedure (WP) numbers is maintained by the CDC.
- WPs include the following information: purpose and scope, applicability, definitions, responsibilities, general statements, Work Site Instructions, References, exhibits, records and appendixes.

Results:

At the time of this audit, one quality affecting WP was in affect. Both requirements listed above were being met. There were no deficiencies identified.

Summary for the QA Program Element

The REECo implementing procedures were found to adequately incorporate QARD requirements based upon the sample selected for evaluation. Based on interviews

conducted and examination of objective evidence, the implementation of QA Program Element 5.0 is satisfactory.

6.0 DOCUMENT CONTROL

The evaluation of this QA program element was based on interviews with REECo personnel responsible for implementation of program requirements, and examination of objective evidence to determine compliance with the requirements from MC-06.0, MC-06.1, MC-06.2, MC-06.3, and MC-06.5. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of adequacy, compliance and effectiveness are listed below.

Document Control (QARD, Section 6.0)

Requirements:

- Documents that specify technical requirements, quality requirements, or prescribe work shall be controlled in accordance with this section.
- Documents that specify technical requirements, quality requirements or prescribe work shall be reviewed for adequacy, correctness, and completeness, according to the requirements of Section 2.0 prior to approval and issuance.
- The organizational position responsible for approving the document for release shall be identified.
- Implementing documents shall describe the process to control expedited changes according to the following requirements:

    1. The level of management with the authority to make expedited changes shall be identified.
    2. The time limits for processing expedited changes through normal change process shall be specified.
    3. An evaluation of the work shall be performed if the normal review process results in a change that is different from the expedited change.

Results:

The REECo implementing procedures were found to adequately incorporate QARD requirements base upon the sample selected for evaluation.

Document Control (MC-6.0)

- Controlled documents are identified on a Master Index which is generated by the CDC.

- Superseded documents are removed or marked "Superseded".

Results:

The Master Index, dated April 28, 1994, was examined. Controlled copies for selected individuals were examined to determine procedural compliance. All examined documents were up-to-date and if the previous revision of a controlled document was present, it was marked "Superseded". There were no deficiencies identified.

Control and Distribution of Controlled Documents (MC-06.1)

Requirements

- The CDC logs and tracks the following information in the Controlled Document Tracking System (CDTS): date document received in the CDC, Document Identification (ID) number, Interim Change Notice number, document title, temporary control status, expiration date for temporary control status, revision number, approval date, effective date (if applicable), originator, date transmittal returned and periodic review date.

- Documents to be controlled are identified on a Master Index.

- Each controlled document is stamped "controlled" on the cover page or first page.

- Recipients of controlled documents destroy or mark document as directed by the transmittal.

- The CDC keeps hardcopy files, as a minimum, of current revision of the controlled document, Document Distribution List (DDL), DRR and draft of document.

Results:

The CDC has very good control of the distribution of controlled documents. A comparison of the Master Index of controlled documents with the information in the CDTS indicated perfect correlation. Examined MC Procedures, TC Procedure and Work Procedure (WP) were listed on the Master Index, stamped "controlled", and examined controlled documents were kept up-to-date. Document Issuance

Authorization, DDL, DRR and a draft of the document were maintained by CDC. There were no deficiencies identified.

Control of Supplier Submittals (MC-06.2)

Requirements

- The MCS completes and retains a Supplier Submittal Review form.
- Submittals that are acceptable to REECo are stamped by the MCS with appropriate stamp.
- The action code on the Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificate of Compliance (SDT) form indicates the approval or rejection status of the submittal.

Results:

Files containing the records for three specifications were examined and found to be in compliance with requirements. Supplier Submittal Review forms were present and complete, and appropriate stamp to indicate acceptance was present, and action codes were present. There were no deficiencies identified.

Externally Controlled Documents (MC-06.3)

Requirements

- The CDC stores and keeps a copy of externally controlled-generated documents.

Results:

The CDC Supervisor provided a copy of the log of externally controlled documents. Drawings, specifications and JPs listed in Attachment 3 were sampled from the log and verified to be maintained by the CDC. Sampled documents were controlled in accordance with the procedure and were up-to-date.

Expedited Changes (MC-06.5)

As of the date of this audit, this procedure was not implemented; however, it was verified that individuals authorized to approve expedited changes have been identified in a memorandum to file.

Summary for the QA Program Element

The REECo implementing procedures were found to adequately incorporate QARD requirements based upon the sample selected for evaluation. One deficiency was identified and corrected during the audit as described in Item 7, Section 5.5.2 of this report. In addition, one recommendation was identified as described in Item 5, Section 6.0 of this report. Based on interviews conducted and examination of objective evidence, the implementation of QA Program Element 6.0 is satisfactory.

8.0 IDENTIFICATION AND CONTROL OF ITEMS

The evaluation of this QA program element was based on interviews with REECo QA, Material Control, and Construction personnel and by examination of objective evidence to determine compliance with selected requirements from REECo implementing procedure MC-04.5. In addition, a sample of selected requirements from the QARD was selected to verify incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below.

Identification and Control of Items (QARD, Section 8)

Requirements:

- Identification is maintained on the items or in a manner which ensures that item identification is established and maintained.
- Items are identified from the time of initial fabrication, or receipt, up to and including installation and end use.
- Item identification methods include use of physical markings. If physical markings are either impractical or insufficient, other appropriate means are employed such as physical separation, labels, or tags attached to containers, or procedural control.
- Item identification methods ensure that traceability is established and maintained in a manner that allows an item to be traced to applicable design or other specifying documents.
- Item traceability documentation ensures that the item can be traced at all times from it's source through installation or end use.
- If items have limited operating or shelf life specified, methods have been established that preclude using the item beyond the shelf or operating life.

Results:

The QARD requirements for QA Program Element 8.0 are adequately incorporated into the REECo implementing procedures selected for review.

Material Identification (MC-04.5)

Requirements:

- The manufacturer/supplier item identification markings are verified at the point of receiving.
- Any tracking or traceability markings to be applied by REECo are applied at the time of receipt inspection.
- Item identification markings, when used, are clear, visible, legible, not detrimental to the function or life of the item, transferred to each part of the item when the item is subdivided, and are not obliterated or hidden when the item is subdivided, and are not obliterated or hidden by surface treatments or coatings, or after installation unless other means of identification are substituted.
- Items found during receipt inspection that do not meet the procurement requirements for identification are tagged, segregated and an NCR is issued to document the deficiency.

Summary of the QA Program Element

The evaluation of this QA Program Element was limited to the examination of quality related materials and items located at the ESF pad area. The identification and storage of the items examined had previously been identified by REECo as being deficient and the REECo QA department has issued a CAR (REECo CAR No. CA-94-004). As a result, the implementation of this QA program element is considered to be in compliance with the project QA program and applicable procedures and is being satisfactorily implemented.

9.0 CONTROL OF SPECIAL PROCESSES

There is presently no implementation of this QA Program Element at REECo. Therefore, this program element was not audited during this audit.

10.0 INSPECTION

The evaluation of this QA program element was based on interviews with REECo QA and QC personnel and examination of objective evidence to determine the degree of compliance with selected requirements from MC-09.0, MC-09.1, and MC-09.2. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below.

Inspection (QARD, Section 10.0)

Requirements:

- The inspection status of an item shall be identified according to Section 14.0.
- The capabilities of a candidate for certification shall be initially determined by an evaluation of the candidate's education, experience, and training; and either examination results or capability demonstration. The evaluation shall be performed to the requirements of the applicable functional level, and education and experience required of this section.
- On-the-job training, with emphasis on hands-on experience gained through actual performance of inspections and test, shall be included in the training program.
    a. On-the-job training for personnel qualification shall be performed under the direct observation and supervision of a qualified person.
    b. The documented verification of conformance shall be performed by the qualified person and not by the person being administered on-the-job training.
- Additionally, Level II personnel shall have demonstrated capabilities in:
    a. Inspection or test planning.
    b. Supervising or monitoring the inspections or tests.
    c. Supervising and certifying lower-level personnel.
- Level III personnel shall have Level II capabilities for the corresponding category or class. In addition, Level III personnel shall also be capable of evaluating the adequacy of specific programs used to train, qualify and certify the personnel.

- The requirements for education and experience shall be considered with recognition that other factors commensurate with the scope, complexity, or special nature of the inspections or tests affect the assurance that a person can competently perform a particular task. Other factors that demonstrate capability in a given job and the basis for their equivalency shall be documented.

- The responsible organization shall identify any special physical characteristics needed for performance in each functional level (category or class) including identifying the need for initial and subsequent visual acuity and other physical examinations

- The qualification of inspection and test personnel shall be certified in writing by the responsible organization. The certification shall document the:

  a. Name of the certifying organization.

  b. Results of periodic evaluations.

- Reevaluation shall be by evidence of continued satisfactory performance or re-determination of required capability in accordance with the qualification requirement specified for the job as described in this section.

- Documentation of personnel qualifications shall be established, kept current, and maintained by the responsible organization. This documentation shall contain the information required for the initial qualification and the maintenance of qualification.

- Documentation for each person shall be maintained and updated according to the following requirements.

  a. Removal of a person from performing in an area of certification when the responsible organization determines that the capabilities of the individual are not in accordance with the qualification requirements specified for the job as described in this section. This shall be documented at the time of removal.

  b. Reinstatement of certification for the qualified area when the required capability has been demonstrated as described in this section. This shall be documented at the time of reinstatement.

  c. This shall be updated every three years.

Results:

Based on interviews with REECo personnel and examination of REECo documentation, it is determined that REECo's procedures adequately reflect the requirements of the QARD.

Inspection Program (MC-09.0)

Requirements:

- Personnel who conduct inspections shall be qualified and certified in accordance with Reference 3.3. Personnel performing inspections using special processes; i.e., non-destructive testing, are qualified in accordance with Reference 3.5.

- Nonconformances identified during inspections shall be handled in accordance with Reference 3.4.

- Modifications, repairs, or replacements of items performed subsequent to final inspection shall require reinspection or retests to the same code, specification or standard, as appropriate, to verify acceptability.

Results:

Based on interviews and examination of objective evidence including Rock Bolt Installation Inspection Reports, this procedure is being adequately implemented.

Inspection Planning and Performance (MC-09.1)

Requirements:

- Inspection planning shall be performed, documented and include:

  - Identification of each work operation when inspection is necessary to insure quality and identification of implementing documents that will be used to perform the inspection.

  - Identification of the characteristics to be inspected.

  - Identification of inspection or process monitoring methods to be employed.

  - Inspection and process monitoring shall be conducted when control is inadequate with only one method.

- Provision for the final inspection shall be planned to arrive at a conclusion regarding conformance of the item to specified requirements.
- Identification of the functional qualification level (by discipline) of personnel performing inspections.
- Identification of acceptance criteria.
- Identification of sampling requirements.
- Statistical sampling methods, when used for acceptability of a group of items, shall be based on recognized practices.
- Methods to record inspection results.

• Selection and identification of the measuring and test equipment to be used to perform the inspections to ensure that the equipment is calibrated and is of the proper type, range, accuracy, and tolerance to accomplish the intended function.

• Inspection Checklists (ICs) shall be prepared using Exhibits I and II. This format provides for the documentation of both in-process and final inspections as well as an indicator of inspection status.

• Upon completion of the review, the IC shall be assigned a control number, a revision level, and logged in the IC Control Log. The Quality Control Section Chief (QCSC) shall sign and date the IC signifying that all comments have been resolved and the IC is acceptable for issuance.

• The IC Control Log shall include, as a minimum, the IC control number and revision.

• Revisions to ICs shall contain the same control number with the next consecutive revision number.

• The QCSC shall assure that all inspection personnel performing inspections for acceptance of items or activities are qualified and certified in accordance with Reference 3.7 and appropriately indoctrinated to the requirements of this procedure.

• If during the review of the IC prepared to perform specific inspections, the inspector determines that a specific attribute on the IC is not applicable to the work scope, the inspector shall mark "N/A" on the IC or Inspection Report (IR) and initial and date the entry.

- Upon completion of the above reviews, the inspector shall sign and date the IC to indicate that the IC adequately covers that particular scope of work.

- Upon completion of each inspection attribute identified on the IC, the inspector shall document the results (accept or reject) either on the IC or on the IR as directed by the IC. As a minimum, the information identified on Exhibit III shall be included on the IC, IR, or a combination of both.

- Items which are identified as not meeting specified requirements and cannot be corrected through normal work activities shall be documented on an NCR.

- The IR shall, as a minimum, include that applicable information identified on Exhibit III of this procedure and the words "Reinspection per NCR #," if applicable, or identify the governing document.

Results:

Based on interviews with REECo personnel and examination of objective evidence including inspection plans and inspection checklists this procedure is being adequately implemented.

Training, Qualification, and Certification of Inspection and Test Personnel (MC-09.2)

Requirements:

- The designated Level III shall complete an appropriate evaluation checklist (Exhibits III, IV, and V) for each candidate dependent on the desired certification level

- Personnel considered for certification shall receive training to become familiar with the principles and practices of the inspection and testing program and level of certification required.

- Visual Examination - All inspection and test personnel shall receive an annual eye examination.

- The qualification of inspection personnel shall be certified in writing by the PQAM or his designee. The certification shall include:

  a. Employer's name.

  b. Identification of the person being certified which includes the employee number.

c. Activities certified to perform within the given discipline.

d. Level of capability.

e. Basis used for certification that includes such factors as:

- Education, experience, indoctrination, and training (when necessary) and

- Either test results (where applicable); and/or results of capability demonstration.

f. Results of physical examination (when required).

g. Signature of individual responsible for such certification.

h. Date of certification and expiration date.

- Candidates considered for certification shall be certified to perform activities within one or more inspection disciplines listed below and shall have the necessary education and experience stated herein to insure understanding of the principles associated with inspection and testing.

a. Civil/Structural (e.g., concrete, soils, structural steel)

b. Mechanical/Piping (e.g., dimensional)

c. Electrical (e.g., cable trays and supports, spacing, termination)

d. Welding (visual only per code)

e. Receipt Inspection (when performed to a Technical Inspection Report)

- The designated Level III shall evaluate the job performance of inspection and test personnel annually.

- EXHIBIT II, Inspection and Testing Level II

- One year satisfactory performance as a Level I in corresponding inspection/testing category, or

- High school graduate plus three years of related experience in equivalent inspection or testing activities, or

- Completion of college-level work leading to an associates degree in a related discipline, plus one year of related experience in equivalent inspection or testing activities, or

- Graduation from a four year college, plus six months of related experience in equivalent inspection or testing activities.

- EXHIBIT II, Inspection and Testing Level III

  - Six years of satisfactory performance as a Level II in the corresponding inspection/test category, or

  - High school graduate plus ten years of related experience in equivalent inspection or testing activities; or high school graduate plus eight years of experience in equivalent inspection or testing with at least two years as a Level II and with at least two years associated with a nuclear facility, or

  - Completion of college-level work leading to an associates degree and seven years of related experience in equivalent inspection or testing activities with at least two years of this experience associated with nuclear facilities or sufficient training to be acquainted with the relevant quality aspects of a nuclear facility, or

  - Graduation from a four year college, plus five years of related experience in equivalent inspection or testing activities with at least two years of experience associated with nuclear facilities or sufficient training to be acquainted with the relevant QA aspects of a nuclear facility.

Results:

Based on interviews with REECo personnel and examination of objective evidence, including documentation of inspector training and qualifications, this procedure is being adequately implemented.

Summary for the QA Program Element:

The REECo implementing procedures were found to adequately incorporate QARD requirements based upon the sample selected for evaluation. Two deficiencies were identified and corrected as described in Items 5 and 6, Section 5.5.2 of this report. Based on the interviews conducted and review of objective evidence, including inspector qualifications and certifications, inspection planning, execution, and reporting, the implementation of QA Program Element 10.0 is considered satisfactory.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

The evaluation of QA Program Element 12.0 was based on interviews with the REECo Calibration Laboratory Supervisor, REECo QA, QC. Construction and Drilling personnel and by the examination of objective evidence to determine the degree of compliance with selected requirements from MC-10.0. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below.

Control of Measuring and Test Equipment (QARD, Section 12)

Requirements:

- Measuring and test equipment(M&TE) is calibrated, adjusted, and maintained at prescribed intervals against reference calibration standards having traceability to nationally recognized standards. If no nationally recognized standards or physical standards exist, the basis for calibration shall be documented.
- The calibration standards have a greater accuracy than the required accuracy of the measuring and test equipment being calibrated.
- The method and interval of calibration for each device is defined, based on the type of equipment, stability characteristics, required accuracy, intended use, and other conditions affecting measurement control.
- Calibrated measuring and test equipment is labeled, tagged or otherwise suitably marked or documented to indicate due date or interval of the next calibration.
- Calibrated measuring and test equipment is uniquely identified to provide traceability to its calibration data.
- The use of measuring and test equipment is documented and the documentation identifies the processes monitored, data collected, or items inspected or tested since the last calibration.

Results:

The QARD requirements for QA Program Element 12.0 are adequately incorporated into the REECo implementing procedures.

Measuring and Test Equipment (MC-10.0)

Requirements:

- All tools, gauges, instruments, devices or systems used to calibrate, measure, gauge, or inspect for obtaining data which will verify conformance to specific requirements or established characteristics are included in the category of M&TE.

- When calibration standards with a greater accuracy than required of the M&TE being calibrated do not exist or are unavailable, this is documented as well as the justification that using calibration standards with an accuracy equal to the required accuracy are adequate for the requirements.

- The M&TE selected are of the proper type and are capable of providing the proper range, tolerance, and accuracy such that the desired results are obtained.

- The following information is entered into the M&TE Tracking Log:

  a. M&TE item description

  b. M&TE serial number

  c. M&TE model number

  d. PTL (unique identification number)

  e. Date calibrated

  f. Calibration due date

  g. Date the M&TE was used

  h. Where the M&TE was used

- A calibration label is affixed to the M&TE, identifies the M&TE by PTL identification number and has the next calibration due date entered on the label.

- For M&TE consistently found out of tolerance, an evaluation is made by the Primary Standard and Calibration Laboratory (PSCL) to determine if repair, modification, replacement or a shorter calibration interval is appropriate.

- An evaluation is performed and documented on the Out-of-Tolerance Notification for previously calibrated M&TE found out of tolerance.

- The Calibration Report contains the following information:

  a. Identification of the M&TE calibrated.

  b. Traceability to the standard(s) used for calibration.

  c. Calibration data.

  d. Identification of the individual performing the calibration.

  e. Date of calibration and the calibration due date.

  f. Results of the calibration and statement of acceptability.

  g. Reference to any actions taken in connection with out of tolerance or nonconforming M&TE.

  h. Identification of the implementing document (including revision level).

Summary for the Program Element:

The evaluation of this QA program element was based on the examination of seventeen M&TE records for PSCL calibrated equipment as well as for PSCL equipment used in the calibration process. In addition, selected pieces of M&TE were examined for verification of items such as calibration tags. The M&TE records and instruments were found to be in compliance with procedural and programmatic requirements and the implementation of Program Element 12.0 is considered to be satisfactory.

13.0 HANDLING, STORAGE AND SHIPPING

The evaluation of this QA program element was based on interviews with REECo QA, Material Control, and Construction personnel and by examination of objective evidence. Implementation was evaluated utilizing REECo procedures MC-04.3 and MC-04.0. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specified requirements selected for evaluation of compliance and effectiveness are listed below.

Handling, Storage, and Shipping (QARD, Section 13)

Requirements:

- For critical, sensitive, perishable, or high value articles, specific implementing documents for handling, storage, cleaning, packaging, shipping, and preservation have been prepared and used.

- If required for particular items, special equipment (such as containers, shock absorbers, and accelerometers) and special protective environments (such as inert gas and specific moisture and temperature levels) are specified and maintained.

- If special equipment and environments are used, provisions have been made for their verification.

- Operators of special handling and lifting equipment are experienced or trained to use the equipment.

- Measures have been established for marking and labeling for the packaging, shipping, handling and storage of items as necessary to adequately identify, maintain and preserve the item.

Results:

The REECo implementing procedures were found to adequately incorporate the QARD requirements for QA Program Element 13.0 .

Handling, Storage and Shipping (MC-04.3)

Requirements:

- After verification of the receipt and identification of equipment and/or materials in accordance with procedure MC-04.1, Material Receiving, the Supply/Just-in-time Superintendent (S/JITS) shall provide for proper handling as specified in the procurement documents, design specifications, and/or manufacturer's recommendations; otherwise that good commercial practice is used.

- Special handling tools and equipment or hoisting and rigging apparatus is inspected prior to use and properly maintained in accordance with approved procedures.

- Storage areas which have been established provide for drainage and are away from the immediate construction area.

- Interim worksite storage for ESF Title II items provide four secured segregated areas for items (1) requiring inspection, (2) nonconforming items, (3) QA items accepted for construction, and (4) non-QA items accepted for construction.

- The CND shall identify care and maintenance requirements from review of design specifications and manufacturer's and/or supplier's recommendations and generate and maintain Care and Maintenance Instructions (CMI) including instructions, performance frequency, and the CMI Log.

- The CND shall indicate in the Reference section of the CMI, the Quality Classification of the item(s); i.e. QA, QA; NA, Quality-Affecting Commercial Grade (QACG), etc.

- The custodian is responsible for the care and maintenance of the equipment/materials being stored in his or her area as prescribed by the CMI. The responsible maintenance organization; i.e., supply, CND, or other designated organization, has generated the Equipment/Material Summary Maintenance Form to be used as a planning tool to ensure that care and maintenance is performed as scheduled.

- Required traceability documents are referenced and retrievable by purchase order number.

Results:

The evaluation of implementation and compliance with this procedure was based on the observation of quality related materials and items stored at the ESF Pad. This was due to the fact that there are no quality related items in the procurement pipeline. There are problems of identification and traceability related to these items; however, REECo has identified these problems and has issued CAR CA-94-004 to document them. As a result, the implementation of this procedure is considered to be in compliance with the QA Program and applicable procedures and is considered satisfactory.

Material Control (MC-04.0)

Requirements:

- Detailed receipt inspection is performed in accordance with MC-04.2, Receipt Inspection.

- Nonconforming materials are tagged and physically segregated in a designated "HOLD" area, pending resolution of the nonconformance or return of the material to the supplier.

- Documentation which establishes traceability of the material is completed and delivered to the Material Control Section by the Logistical Support Department.

- The User installs the material at the location shown on the authorized JP, the relevant Title II drawings and specifications, and other installation documents.

- The User references the traceability documents by purchase order number and any other information as required by specification or installation procedure.

Results:

The evaluation of implementation and compliance with this procedure was based on interviews with cognizant REECo personnel and by observation of the release of material from the Nonconforming Material storage area by QC to Construction. There are procedural deficiencies which have been identified by REECo QA and which REECo CAR CA-94-004 is tracking. As a result, the implementation of this procedure and the REECo QA program is considered to be in compliance with the Project QA program and applicable procedures and is considered to be satisfactory.

Summary for the QA Program Element:

The evaluation of QA Program Element 13.0 was based on interviews with REECo QA, QC, Material Control and Construction personnel and to observation of the storage of quality related items at the ESF construction pad. The few quality related items that were observed at the ESF construction pad were left-over material from the construction of the ESF Starter Tunnel. The identification and storage of these left-over items has been identified by REECo as being deficient and the REECo QA Department has issued CAR CA-94-004. Since the conditions have been identified and are being tracked by the REECo QA Department, the results of the audit for QA Program Element 13.0 are considered to be satisfactory.

14.0 INSPECTION, TEST, AND OPERATING STATUS

The evaluation of this QA program element was based on interviews with REECo QA and QC personnel and examination of objective evidence to determine the degree of compliance with selected requirements from TC-581-TP-0002, TC-581-WP-0003, TC-581-SP-0007, and TC-581-SP-0011. In addition, a sample requirement from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below.

Inspection, Test, and operating Status (QARD, Section 14.0)

Requirement:

Indicating Status - The status of required inspection and tests of items shall be indicated when necessary to preclude inadvertent by-passing of such inspections and tests.

Results:

The REECo implementing procedures were found to adequately incorporate the QARD requirement for QA Program Element 14.0.

Testing of Underground Rock Bolt Ground Support (TC-581-TP-0002)

Requirements:

- Water usage for drilling will be monitored in accordance with Reference 3.8.
- Record required information from drilling and installation for all bolts installed on the Rock Bolt Installation and Testing Log (RBITL) in accordance with Reference 3.9.
- Pull tests will be performed in each distinct type of rock, or as directed by the Architect/Engineer (A/E). In-place pull tests will be performed on cement/resin grouted bolts selected by the A/E on 20 out of the first 100 bolts installed and five out of every 100 installed thereafter until directed by the A/E to stop in-place pull testing.

Results:

Based on interviews and examination of objective evidence including Rock Bolt Installation Inspection Reports, this procedure is being adequately implemented.

Drilling and Blasting for Underground Construction Activities (TC-581-WP-0003)

Requirements:

- The drill round shall be laid out by the survey crew in accordance with the applicable drawings and specifications. (See References 7.2 through 7.34.) The survey work shall be accomplished in accordance with Reference 7.36 and 7.36.1. HOLD POINT for Construction Department (CND), QC, and A/E.
- Drill the blast holes to the required size, line, and grade as indicated on the applicable drawings and specifications. HOLD POINT for CND, QC, and A/E.
- Blast hole loading and tie in complete. HOLD POINT for Construction Department Operations Supervisor (CNDOS), QC, and A/E.
- Round okay for initiation. HOLD POINT for CNDOS
- Inspect the blast area and the muck pile for undetonated explosives. HOLD POINT for CNDOS
- Visually inspect the blast results for conformance to the drawings and specifications. HOLD POINT for CNDOS, QC, and A/E

Results:

Based on interviews and examination of objective evidence including Drill and Blast Log Sheets which incorporated evidence of hole and witness point compliance, this procedures is being adequately implemented.

Starter Tunnel Shotcrete (TC-581-SP-0007)

Requirements:

- Apply bonding coat to surface of the rock prior to placement of shotcrete to facilitate bonding and reduce possibility of shrinkage cracking. (HOLD POINT for inspection of surface preparation including reinforcement by QC.)

- Curing compounds will not be applied on any surface which additional shotcrete is to be bonded unless positive measures are taken to remove curing compounds completely prior to the additional application. (HOLD POINT for inspection of surface finish and verification of curing time by QC.)

Results:

Reviewed Shotcrete Inspection Reports for implementation of HOLD POINTS. This procedure is being adequately implemented.

Exploratory Studies Facility Ground Support (TC-581-SP-0011)

Requirements:

- Ensure holes are clean and free of cuttings after the drilling cycle. (HOLD POINT for inspection of location and dimensional inspection of reworked bolt holes for pattern bolts by QC. WITNESS POINT for inspection of pattern bolt holes by A/E.)

- Continue with cement grout bolt drilling and installation until all required pattern bolts have been installed. (HOLD POINT for inspection of permanent cement grout pattern bolt installation by QC.)

- Bolt each lattice girder section in place with support from ReeCo survey for line and grade using Split Set or cement/resin grouted bolts. (HOLD POINT for inspection of lattice girder installation by QC and A/E.)

Results:

Reviewed Drill and Blast Log Sheets and inspection reports for implementation of HOLD POINTS. This procedure is being adequately implemented.

Summary for the QA Program Element:

Based on the interviews conducted and review of objective evidence, the implementation of QA Program Element 14.0 is considered satisfactory.

15.0 NONCONFORMANCES

The evaluation of this QA program element was based on interviews with the REECo QC Section Chief and other QA/QC personnel, and examination of objective evidence to determine compliance with procedure YAP-15.1Q and MC-11.4. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below:

Nonconformances (QARD, Section 15.0)

Requirements:

- Nonconformance documentation shall clearly identify and describe the characteristics that do not conform to specified criteria.
- Nonconformance documentation shall be reviewed and recommended dispositions of nonconforming items shall be proposed.
- Recommended dispositions shall be evaluated and approved.
- Nonconforming items shall be identified by marking, tagging, or other methods that do not adversely affect their end use.
- The disposition of an item to be reworked, or repaired shall contain a requirement to reexamine (inspect, test, or nondestructive examination) the item to verify acceptability.

Results:

The REECo implementing procedures were found to adequately incorporate the QARD requirements based upon a selected sample size selected from the RTN matrix for evaluation and verification of the QARD requirements.

Control of Nonconformances (YAP-15.1Q)

Requirements:

- An NCR is initiated when a nonconforming item is identified.
- The cognizant supervisor of the Affected Organization is notified of the nonconforming condition.
- A "Hold" tag is applied to the item to prevent further processing, installation, or inadvertent use of the item.
- An NCR Log and Tracking System (supplied by the YMPO) is used to track YMP related NCRs.
- Upon receipt of an NCR that has been invalidated or notification of validation, the NCR Coordinator updates the NCR log.
- The Dispositioner evaluates the nonconformance and determines the actions necessary to resolve the nonconforming condition, specifies the action required in Block 4 (Disposition Evaluation) of the NCR.
- The disposition factor requirements delineated in sections 6.1.1 through 6.1.7 have been complied with when dispositioning items.
- The Specifying Organization QA:
  - Reviews the disposition for concurrence
  - Performs a review for reportability in accordance with Attachment 9.4.
  - Determines the need for additional corrective action and if appropriate initiates corrective action.
  - Forwards the NCR to the organization responsible for performance of the disposition and sends a copy to the NCR Coordinator.
- The performing organization completes the required actions in accordance with the approved disposition by signing and dating Block 7 of the NCR, and forwarding the NCR to the performing organization QA.

- The Performing Organization QA or Specifying Organization QA:
  - Verifies that all actions required by the disposition have been completed.
  - Transmits a copy of the NCR to the NCR Coordinator and the original NCR to the Specifying Organization.
- The NCR Coordinator:
  - Updates the NCR working file with a copy of the NCR,
  - Updates the NCR Log as to the status of the NCR.
- The Specifying Organization QA signs and dates the NCR, Block 8, Final Review, indicating acceptance of the review and transmits the completed NCR to the NCR Coordinator.
- The NCR Coordinator updates the NCR Log and if the NCR crosses organizational boundaries, forwards a copy to YMQAD for trending.
- The NCR Coordinator transmits the original NCR to the LRC/DR Center in accordance with appropriate implementing documents.
- If a revision to an NCR is required, a revision number is placed inside a delta adjacent to the revision on all pages. All other processes are completed as originally designated.
- NCRs are maintained as QA records.

Results:

A selected sample of NCRs listed on the NCR Log, that were identified by REECo in accordance with YAP 15.1Q, were reviewed. Three of the selected NCRs were open and red hold tags were verified attached to the nonconforming items in the field. The records for three closed NCRs were verified to have been submitted to the LRC and retrieved through the CRF using the Records Information System (RIS). Two NCRs were closed on 4/21/94 and were not yet indexed in the RIS. Copies of the 11 open NCRs identified by REECo in accordance with AP-5.27Q were found in the file of open NCRs kept by REECo QC, but were not reviewed during this audit. These NCRs are being tracked by the M&O in accordance with its implementing procedure MGP-15-1. No deficiencies were identified in the review of NCRs. REECo's implementation of their activities and responsibilities under the YAP 15.1Q were satisfactory.

Trending (MC-11.4)

Requirements:

- The data from the deficiency reporting documents are entered into a tracking and trending data base and as a minimum include.
  - Report types
  - Report Number
  - Issue or identification date
  - Responsible organization
  - Deficient item
  - Subject of deficiency
  - Apparent or root cause
- The QAO issues a quarterly trend evaluation report showing the result of the trend evaluation to cognizant YMP management.
- The QAO initiates a CAR or DN when an adverse trend is identified.
- The quarterly trend reports are submitted as QA Records.

Results:

Four quarterly trend evaluation reports were reviewed. One of the reports, the 1993 Third Calendar Quarter Trend Report, indicated a negative trend. Two Corrective Action Reports were initiated to identify the negative trend. The trend reports and associated documentation were submitted as QA Records and were verified in the RIS. No deficiencies were identified. REECo's implementation of MC-11.4 was satisfactory.

Summary for the QA Program Element:

Based on interviews and review of objective evidence, the implementation of QA Program Element 15.0 is satisfactory.

16.0 CORRECTIVE ACTION

The evaluation of this QA program element was based on interviews with REECo QA personnel and examination of objective evidence to determine the degree of compliance with selected requirements from MC-11.0, MC-11.1, and MC-11.3. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below.

Corrective Action (QARD, Section 16.0)

Requirements:

- Conditions adverse to quality shall be documented and reported to the appropriate levels of management responsible for the conditions and to the QAO for tracking.
- Responsible Management shall investigate and document the investigation of conditions adverse to quality.
- The QAO shall concur with the proposed remedial action to ensure that QA program requirements are satisfied.
- Criteria for determining a significant condition adverse to quality shall be established.
- Trend evaluation shall be performed in a manner and at a frequency that provides for prompt identification of adverse quality trends.
- The QAO shall establish criteria for determining adverse quality trends.

Results:

The REECo implementing procedures were found to adequately incorporate QARD requirements.

Deficiency Notices (MC-11.1)

Requirements:

- The log of DNs generated shall contain the following minimum information:
  - DN number
  - Originators name/department
  - Date evaluated
  - Responsible organization
  - Response due date
  - QAO acceptance date
  - Estimated completion date
  - Closure date and comments
- The QAO shall evaluate DNs to determine their validity; whether a significant condition adverse to quality exists; and whether it might be a material condition.

- The responsible organization shall, upon receipt of the DN, take immediate actions to remedy the adverse conditions.
- The responsible organization shall respond by the response due date.
- The QAO shall evaluate the proposed corrective action to ensure that the required actions have been properly addressed.
- The corrective actions shall be completed by the estimated completion date.
- The QAO shall notify the responsible organization, in writing, for overdue responses.
- The QAO shall verify that the corrective action(s) have been completed.
- The QAO is responsible for submitting the records package.

Results:

Based upon a random sample of REECo DN's as noted in Attachment 3 to this report, the implementation of MC-11.1 is considered satisfactory.

Corrective Action (MC-11.3)

Requirements:

- The QAO shall document the significant condition, determining whether a Stop Work Condition exists, and transmit to the responsible/cognizant manager and their upper management.
- The QAO shall evaluate to ensure that root cause was identified and that the actions taken were adequate to resolve the condition and prevent reoccurrence.
- The QAO shall perform verifications of corrective action(s), document the objective evidence reviewed to determine status, and sign/date to signify acceptance.

Results:

Based upon a random sampling of CARs generated by REECo as noted in Attachment 3 to this report, the implementation of MC-11.3 was determined to be satisfactory.

Problem Identification and Control (MC-11.0)

Requirements:

- Significant conditions adverse to quality shall be evaluated by the QAO to determine the possible existence of a Stop Work Condition.
- Significant conditions adverse to quality shall have the root cause identified.
- The QAO shall periodically analyze CARs for quality trends.

Results:

Based upon a review of the trend reports identified in Attachment 3, the implementation of MC-11.0 is considered satisfactory.

Summary for the QA Program Element:

One recommendation was identified as described in Item 6, Section 6.0 of this report. Based upon the interviews with REECo QA personnel and the review of objective evidence as noted in Attachment 3 to this report, the implementation of QA Program Element 16.0 is considered satisfactory.

17.0 QUALITY ASSURANCE RECORDS

This QA program element was evaluated based on the review of objective evidence to determine compliance with selected requirements taken from implementing procedures MC-12.0 and MC-12.1. In addition, a sample of requirements from the QARD was selected to verify adequate incorporation into REECo's implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below:

Quality Assurance Records (QARD, Section 17.0)

Requirements:

- An individual or organization shall be assigned the responsibility for receiving QA Records.
- QA Records shall be protected from damage, deterioration, or loss when received.
- Legibility and completeness of QA Records shall be verified.

- Documents that provide evidence of the quality of items on the Q-List shall be classified as lifetime QA Records.

- Personnel training and qualification documents for individuals executing QA program requirements shall be classified as lifetime QA Records.

- Individuals creating QA Records shall ensure that the QA Records are, legible, accurate, and complete.

- Corrections shall include the initials or signature of the person authorized to make the correction and the date the correction was made.

- QA Records shall be temporarily stored in a container or facility with a fire rating of 1 hour, or dual storage shall be provided.

Results:

The REECo implementing procedures were found to adequately incorporate the QARD requirements.

Records Management Program (MC-12.0)

Requirements:

- The managers complete a RAF, identifying the personnel within their organization and the records tasks they are authorized to perform.

- Personnel authorized to authenticate QA Records are qualified to do so as described in MC-2.4.2,. Personnel Qualification and Certification.

- Records and records packages are be legible and complete.

- Records and record packages (QA and Non-QA) to be generated , supplied, submitted, and maintained are specified and identified in procedures, plans, instructions, or other REECo documents.

- Documents that meet the following requirements are classified as QA records

  - Personnel training and qualification documents for individuals executing QA requirements.
  - Documents considered Implementing Documents.
  - Documents that provide objective evidence that the QA program has been properly executed.

- Record packages contain a Table of Contents and are arranged in a systematic manner.

- QA Records and record packages are authenticated.

- DOE System 80, qualification, training and certification records and record packages are marked PRIVILEGED.

- Corrections to "Records/Record Packages" are made by personnel authorized to do so on the RAF.

- Access to records is controlled.

- Managers identify personnel authorized access to DOE System 80 records or personnel from within their organization by checking the appropriate box on the RAF. A copy of this form is sent to the TA and to the Information Management Department (IMD).

- The REECo TPO provides by letter to the TPO of the participant organization responsible for operating the LV LRC and the CRF a list of names of REECo personnel authorized access to DOE System 80 Records.

- DOE System Records are maintained in locked cabinets. Access to computer records is by password only.

- The IMD maintains microfilm copies of these records separately from the rest of the microfilm and stores the microfilm in locked cabinets. Theses microfilm reels and microfilm boxes are labeled on "2" sides INFORMATION RELEASE RESTRICTED in black ink on a pink background.

- The TA and the IMD restrict access to those allowed access by paragraph 6.6.4 and those authorized on the RAF.

- All completed records and records packages are submitted to the LV/LRC through the ISC. Record Sources transmit all records and record packages to the ISC. This may be done by any of the following methods.

  - Sending them through the ISC for distribution.
  - Copying the ISC and/or the TPO as a recipient.
  - Sending a copy directly to the ISC for records retention purposes.
  - Providing a copy to their Records Administrator who will transfer the copy to the ISC.

- Procedures are submitted to the LV LRC by the CDC through the ISC as described in reference 3.6 "MC 06.0, Document Control."

- Record Package segments generated by REECo that will become part of a record package completed by another affected organization are submitted to the records system by the completing affected organization. REECo Record Sources transmit a duplicate copy of these record package segments to the ISC. The ISC does not submit these duplicates to the LV/LRC.

- Records generated by REECo which will become part of a JP record package are submitted to the YMSCO, DRC according to reference 3.15, "Job Package Completion and Records." A duplicate of the completed form used to submit records to the DRC is sent to the ISC.

- Completed QA records and record packages are submitted to the LV/LRC no later then 10 working days after authentication.

- The RAFs are treated as QA records.

Results:

Construction Department records are in the process of being reviewed and corrected to resolve the procedure/record deficiencies in Shotcrete Placement Logs and Starter Tunnel Drill and Blast Logs, Identified by REECo QA in DN-94-017 and DN-94-02. The QC records are currently being reviewed by QC inspectors for submittal to the DRC. All deficiencies relating to MC 12.0 were isolated in nature and only require remedial action. Results were satisfactory

Records Management For Records Sources (MC-12.1)

Requirements:

- Records and Record Packages are complete.

- QA records and record packages are authenticated by authorized personnel by stamping, signing, or initialing and dating the record or record package.

- Record packages include a Table of Contents. The Table of Contents inventories the contents of the package by listing the individual records that constitute the package and indicating the page count for each individual record or group of records.

- Correction of records prior to submittal to the LV/LRC are corrected by scribing a single line through the incorrect information using black ink and entering the correct information. The correction indicates the date, initials or signature of the person who is authorized to make the corrections.

- The LV LRC is immediately notified of any serious errors in previously processed records or record packages. The corrected modified or supplemented records are submitted and identified to the LV/LRC through the ISC in accordance with paragraph 6.2.3.1.

- Materials destined to become QA records are protected against loss, damage, destruction, or degradation of data until they have been authenticated. Once authenticated, QA records are protected in one hour Underwriter's Laboratory (UL) or equivalent fire rated safes or containers.

Results:

Bases on the evaluation of objective eveidence listed in Attachment 3, implementation of MC-12.1 is satisfactory.

Summary for the QA Program Element:

Four deficiencies were identified and corrected during the audit as described in Items 1-4, Section 5.5.2 of this report. In addition four recommendations were identified as described in Items 1-4, Section 6.0 of this report. Based on interviews and review of objective evidence, the implementation of QA Program Element 17.0 is satisfactory.

18.0 AUDITS

The evaluation of this QA program element was based upon interviews with REECo QA personnel and examination of objective evidence to determine the degree of compliance with selected requirements from MC-13.0 and MC-13.1. In addition, a sampling of requirements from the QARD was selected to verify adequate incorporation into REECo implementing procedures. The specific requirements selected for evaluation of compliance and effectiveness are listed below:

Audits (QARD, Section 18.0)

Requirements:

- Regularly scheduled internal audits shall be supplemented by additional audits of specific subjects when necessary to provide an adequate assessment of compliance of effectiveness.

- An audit team shall be identified before beginning each audit. The audit shall include representatives from the QA organization and any applicable technical organizations.

- Internal audits shall be scheduled to begin as early in the life of the work as practical and shall be scheduled to continue at intervals consistent with the schedule for accomplishing the work.

- In the case of internal audits, personnel having direct responsibility for performing the work being audited shall not be involved in the selection of the audit team.

- Audits shall include technical evaluation of the applicable procedure, instructions, activities and items.

- Nonconformances identified during an audit shall be controlled by the audited organization according to the requirements of Section 15.0.

Results:

The REECo implementing procedures for QARD Section 18.0 were found to contain some minor anomalies which were shown as incorrect on the submitted matrix. The matrix indicated incorrect paragraph references but did cover the QARD requirement elsewhere in the procedure. A listing of the correct paragraph reference was given to REECo management for their correct input to the matrix. Submittal of a corrected reference matrix will be required. REECo management indicated that this will be done according to the list supplied by YMQAD.

Audits (MC-13.0)

Requirements:

- The PQAM is responsible for approving audit schedules assigning qualified audit personnel to conduct audits, reviewing and approving audit reports, and assuring that corrective action follow-up has been conducted.

- Applicable elements of the YMP QA program shall be audited at least annually or at least once during the life of the activity.

- As a minimum, audits of each applicable section of a QA program shall be conducted within one year from the date of the previous audit of the activity.

- The PQAM shall periodically review and revise the audit schedule as necessary to assure coverage to be maintained and current.

- The PQAM shall approve the audit schedule.

- The Lead Auditor shall prepare and complete the QA Audit/Survey Plan in accordance with the instructions for Exhibit III.

- The Lead Auditor shall approve the audit checklist.
- The Auditor(s) shall document the objective evidence reviewed, and whether or not the checklist attribute is acceptable or unsatisfactory, and that each attribute has been initialed to indicate completion.
- The audit reports shall be issued by the PQAM within 30 calendar days of completion of the audit.
- A log of audits conducted shall be maintained by the QAO and contain all required information.
- The QAO is responsible for submitting the required records.

Results:

Based upon the objective evidence reviewed and noted on Attachment 3 to this report, the implementation of MC-13.0. was found to be satisfactory.

Auditor Qualification (MC-13.1)

Requirements:

- Competence of personnel for performing the various audit functions shall be developed.
- The PQAM shall certify and document to the individual' s training files their qualification as an auditor.
- The PQAM shall document to the individual's training file their qualification as a Technical Specialist.
- Prospective Lead Auditors shall have verifiable evidence that a minimum of ten-credits have been accumulated.
- The prospective Lead Auditor shall participate in at least one audit under the supervision of a YMP Lead Auditor prior to qualification.
- Qualification and certification of lead auditors shall be documented.

- Lead Auditors shall maintain their proficiency through one or more of the following:

  - Regular active participation in the audit process.
  - Review and study of codes, standards, etc.
  - Participation in training programs.

- The annual assessment shall be conducted during January of each year and be documented on the individuals training file, on Exhibit II.

- The following QA records are generated by this procedure

  - Auditor Qualification Records
  - Technical Specialists Qualification Records
  - Lead Auditor Evaluations
  - Lead Auditor annual Evaluation Record.

Results:

Based upon a review of objective evidence as indicated in Attachment 3 to this report, the implement of MC-13.1 was considered satisfactory.

Summary for the QA Program Element

The REECo implementing procedures were found to adequately incorporate QARD requirements. One deficiency was identified and corrected during the audit as described in Item 8, Section 5.5.2 of this report. Based upon the interviews conducted and the review of objective evidence, the implementation of QA Program Element 18.0 is considered satisfactory.

ATTACHMENT 3

OBJECTIVE EVIDENCE

QA Program Element 1.0, Organization:

Procedures:

Compliance with the following procedures was reviewed:

DOE-RW/0333P, Revision 0, QARD, Section 1.0
MC-01.0, Revision 3, Organization
MC-01.1, Revision 0, Stop Work Authority
MC-01.2, Revision 0, Resolution of Disputes
MC-01.3, Revision, 0, Delegation of Authority

Objective Evidence Reviewed:

REECo/YMP Organization Chart, dated 5/2/94
REECo/YMP Division, dated 4/1/94
REECo/YMP Quality Assurance Department, dated 4/1/94
REECo/YMP Information Management Department, dated 4/1/94
REECo/YMP Drilling Department, dated 4/1/94
REECo/YMP Construction Department, dated 4/1/94
REECo/YMP Project Control Department, dated 4/1/94

Construction and Inspection Plan:

CIP-94-0001

Line of Succession Letters:

B. R. Gardella, dated 3/21/94
W. Pugmire, dated 4/4/94
D. Wonderly, dated 4/694

QA Program Element 2.0, Quality Assurance Program:

Procedures:

Compliance with the following procedures was reviewed:

DOE-RW/0333P, Revision 0, QARD, Section 2.0
MC-02.0, Revision 3, Quality Assurance Program
MC-02.1, Revision 1, Determination of Importance
MC-02.4, Revision 0, Training and Qualification
MC-02.4.1, Revision 2, YMP Indoctrination and Training
MC-02.4.2, Revision 2, Personnel Qualification and Certification
MC-02.4.3, Revision 1, Required Reading
MC-02.4.4, Revision 1, Classroom Training
MC-02.4.5, Revision 2, Developing a Training Course
MC-02.5, Revision 0, Management Assessment
MC-02.8, Revision 1, Preparation, Review, and Approval of QAPP Change Notices
MC-13.2, Revision 1, Surveillances

Objective Evidence Reviewed:

Quality Implementing Plan:

QIP-DIV-93-002, Revision 0

Activity Grading Work Sheet:

AGW-DIV-93-001, Revision 0

Individual Training Files and Records Reviewed for the following personnel:

J. D. Geimer, N. R. Bennett, J. Constable, W. Gratza, D. L. Knight, J. M. Arnold, M. Moulder, C. Olson, A. McMullen, L. Roggins, S. Ziehm, C. Mathews, D. Key, E. Mouser and E. Williams

The following records from the above files were verified for completeness:

Indoctrination and Training
Training Requirements Forms
Qualification Records
QR Packages
Verification of Experience and Education
Required Reading Notices

Surveillance Plans:

SR-014-94
SR-002-94
SR-013-94
SR-007-94

Surveillance Report Log:

Covers reports issued from 2/12/92 through 4/29/94

Lesson Plans Reviewed:

Title	Course #	Approval date
Material Logistics	LP-93-005	10/28/93
Document Control Procedure Training	LP-92-001	09/25/92
Nonconformance Control	LP-93-004	06/29/93
CA 94-001, CA 94-002 Action	LP-94-002	04/21/94
Instructor Qualification Training	TR-002	01/16/90
YMP Orientation/Indoctrination	OR-92-001	10/19/92

QA Program Element 4.0, Procurement Document Control
QA Program Element 7.0, Control of Purchased Items and Services

Procedures:

The following implementing procedures were evaluated to determine if adequate instructions on the methodology to implement the QARD requirements were present:

DOE-RW/0333P, Revision 0, QARD, Sections 4.0 and 7.0
MC-03.0, Revision 2, Procurement
MC-03.1, Revision 1, ICNs 1 & 2, Purchasing Requisitions and Purchase Order Processing
MC-03.3, Revision 2, Source Verification
MC-03.2.1, Revision 0, ICN 1, Supplier Quality Approval
MC-03.2, Revision 1, Source Selection and Evaluation
MC-06.2, Revision 0, ICNs 1 & 2, Control of Vendor Submittals
MC-04.2, Revision 1, ICNs 1 & 2, Receipt Inspection

Compliance with the following procedure was reviewed:

MC-03.2.1, "Supplier Quality Approval"

Objective Evidence Reviewed:

Computer Data Base of QA reviewed purchase documents, Lotus 1-2-3, file name:

93PRW-WK3	E-PR-Log-WK3
E-JIT-Log-WK3	S-Cont-Log-WK3

Material Control Log dated 4/28/94 (Listing of YMP/REECo Procurements)

Supplier Quality Approvals:

QA Audit/Survey Report, REECo-SO2-93
Ruska Instrument Corporation, dated 7/21/93
Initial Evaluation Plan, dated 6/11/93
Supplier Evaluation Report SER-93-002, dated 7/8/93
Supplier QA/QC Program Manual/Document Evaluation (checklist), dated 6/1/93
QA Audit/Survey Report, REECo-SO1-94
EG&G Energy Measurement, dated 11/5/93
REECo YMP QA Audit/Survey Plan-SO1-94, dated 10/1/93
Initial Supplier Evaluation Plan, dated 10/1/93
Supplier Evaluation Report SER-94-001, dated 4/25/94
QA Audit/Survey Checklist, dated 10/4/93
Technical Specialist Comments, dated 10/6/93
Supplier QA/QC Program/Manual/Document Evaluation, dated 10/1/93

Reynolds Electrical & Engineering Company, Inc., Yucca Mountain Project Approved Suppliers List (ASL) DOC No. 586-ASL-1, issue No. 94-2, date of issue 2/23/94

QA Program Element 5.0, Implementing Documents

Procedures:

Compliance with the following procedures was examined:

DOE-RW/0333P, Revision 0, QARD, Section 5.0
MC-05.0, Revision 2, Instructions, Procedures and Drawings
MC-05.1, Revision 2, Preparation, Review & Approval of Management Control Procedures
MC-05.2, Revision 2, Preparation, Review & Approval of Technical Control Procedures
MC-05.3, Revision 0, Preparation, Review and Approval of Work Procedures

Objective Evidence Reviewed:

Management Control Procedures:

MC-07.0, Revision 2 Work Stop
MC-07.1, Revision 0 Work Planning
MC-09.0, Revision 2 Inspection Control
MC-09.0, Revision 2,- ICN-1
MC-09.1, Revision 4 Inspection Planning and Performance
MC-10.0, Revision 1 Measuring and Test Equipment
MC-11.0, Revision 2 Problem Identification and Control
MC-11.4, Revision 4 Trending

Technical Control Procedures:

TC-515-CP-DIM-1, Revision 0, Depth Micrometers
TC-515-CP-GEN-1, Revision 1, Measuring and Test Equipment-General
TC-580-SP-0003, Revision 0, Shotcrete Nozzelman Certification
TC-581-SP-0001, Revision 2, Water Use, Control and Accountability
TC-581-SP-0006, Revision 1, Survey Instrument Repeatability Tests
TC-581-SP-0007, Revision 2, Starter Tunnel Shotcrete
TC-581-SP-0010, Revision 0, Operation of Initial Tank Tracer Injection System
TC-581-SP-0010-ICN-1
TC-581-SP-0010-ICN-2
TC-581-SP-0011, Revision 3, Exploratory Studies Facility Ground Support
TC-581-SP-0017, Revision 0, Surveying Operations for the Starter Tunnel
TC-581-TP-0002, Revision 1, Testing of Underground Rock Bolt Ground Support
TC-581-TP-0002-ICN-2

Work Procedures:

TC-581-WP-0003, Revision 1 Drilling and Blasting for Underground Construction Activities

Document Review Records for:

MC-06.3, Revision 1
MC-07.0, Revision 2
MC-07.4, Revision 1
MC-09.1, Revision 4
MC-11.0, Revision 2
TC-581-TP-0002, Revision 1
TC-581-SP-0012, Revision 0
TC-581-SP-0017, Revision 0
TC-581-SP-0006, Revision 1
TC-581-WP-0003, Revision 1

QA Program Element 6.0, Document Control

Procedures:

Compliance with the following procedures was examined:

DOE-RW/0333P, Revision 0, QARD, Section 6.0
MC-06.0, Revision 3, Document Control
MC-06.1, Revision 3, Control and Distribution of Controlled Documents
MC-06.2, Revision 0, Control of Supplier Submittals
MC-06.3, Revision 1, Externally Controlled Documents
MC-06.5, Revision 0, Expedited Changes

Objective Evidence Reviewed:

Controlled Copy Numbers (internal documents):

Copy 3 - M. Moulder
Copy 33 - S. Singer
Copy 36 - D. Koss
Copy 38 - R. Rommel
Copy 109 - K. Hodges

Controlled Documents Examined:

MC-02.0, Revision 3, Quality Assurance Program
MC-02.1, Revision 1, Determination of Importance
MC-02.2, Revision 1, Regulatory Compliance for Reporting Defects
MC-02.4.1, Revision 4, YMP Indoctrination and Training
MC-02.5, Revision 0, Management Assessment
MC-03.1, Revision 1, Purchasing Requisition and Purchase Order Processing
MC-07.0, Revision 2, Work Control
MC-07.6, Revision 0, Tracers, Fluids and Materials Reports
MC-11.2, Revision 3, Nonconformance Control
MC-11.3, Revision 1, Corrective Action
TC-581-SP-0007, Revision 2, Starter Tunnel Shotcrete

Drawings:

Copyholder Number - 101404.1

BAB000000-01717-2100-20001, Revision 0
BAB000000-01717-2100-20002, Revision 0
BAB000000-01717-2100-20003, Revision 0
BABA00000-01717-2100-20011, Revision 0

BABA00000-01717-2100-20088, Revision 0
BABBAD000-01717-2100-22410, Revision 0
BABBAF000-01717-2100-24151, Revision 0

Copyholder Number - 101404.15

BABB00000-01717-2100-20010, Revision 1
BABBD0000-01717-2100-20028, Revision 1
BABB00000-01717-2100-24000, Revision 0
BABBA0000-01717-2100-24005, Revision 1
BABBDA000-01717-2100-24060, Revision 0
BABBDA000-01717-2100-24070, Revision 0
BABBDA000-01717-2100-24072, Revision 0

Copyholder Number - 101404.4

YMP-025-1-MING-MG121, Revision 2
YMP-025-1-MING-MG122, Revision 1
YMP-025-1-MING-MG123, Revision 3
YMP-025-1-MING-MG125, Revision 2
YMP-025-1-MING-MG126, Revision 2
YMP-025-1-MING-MG128, Revision 2
YMP-025-1-MING-MG135, Revision 2
YMP-025-1-MING-MG139, Revision 2
YMP-025-1-MING-MG142, Revision 2
YMP-025-1-MING-MG143, Revision 2

Copyholder Number - 101404.5

YMP-025-1-MING-MG143, Revision 2

Specifications:

Copyholder Number - 101404.1

BAB000000-01717-6300-16050, Revision 2
BAB000000-01717-6300-16110, Revision 2
BAB000000-01717-6300-16195, Revision 2

Copyholder Number - 101404.15

BAB000000-01717-6300-01400, Revision 1
BAB000000-01717-6300-01600, Revision 1
BAB000000-01717-6300-02225, Revision 1
BAB000000-01717-6300-02230, Revision 0

BABBA0000-01717-6300-06410, Revision 0
BABBA0000-01717-6300-07900, Revision 0
BABBA0000-01717-6300-08330, Revision 0
BABFCA000-01717-6300-14555, Revision 2
BABBA0000-01717-6300-15140, Revision 0
BABBA0000-01717-6300-15855, Revision 0

Work Procedures:

TC-581-WP-0003, Revision 1	Drilling and Blasting for Underground Construction Activities

Job Packages:

JP 92-2, Revision 2	JP 93-02, Revision 0
JP 93-02A, Revision 1	JP 93-05, Revision 1

Supplier Submittal Review forms (associated with the following specifications):

YMP-025-1-SP09-02310-VD-1-0
YMP-025-1-SP09-02310, Revision 1
YMP-025-1-SP09-02165, Revision 1

Authorization Memorandums:

Construction Personnel authorized to approve Expedited Changes - dated 6/11/93
QAD individuals authorized to approve Expedited Changes - dated 5/21/93

Master Index of Controlled Documents - dated 4/28/94

QA Program Element 8.0, Identification and Control of Items
QA Program Element 13.0, Handling, Storage, and Shipping

Procedures:

Compliance with the following procedures was reviewed:

DOE-RW/0333P, QARD, Sections 8.0 and 13.0
MC-04.5, Revision 1, Material Identification

MC-04.3, Revision 1, Handling,Storage, and Shipping
MC-04.0, Revision 1, Material Control

Objective Evidence Examined:

P.O. No. 1-QYP-01--3
Line item no.1 , rockbolts

P. O. No. 70-YP-01-3
Line item no.1, fence fabric(partial roll)

P.O. No. 1-QYP-01-3,
Line item unmarked, anchors

P.O. No. 1-QYP-01-3
Line item 06, couplings
Line item unmarked, beveled washers
Line item unmarked, resin epoxy (in cans)
Line item unmarked, PVC inserts

Other items:

Keyhole plates, P.O. No. unmarked, line item no. unmarked

QA Program Element 10.0, Inspection

Procedures:

Compliance with the following procedures was reviewed:

MC-09.0, Revision 0, "Inspection Program"
MC-09.1, Revision 4, "Inspection Planning and Performance"
MC-09.2, Revision 1, "Training, Qualification and Certification of Inspection and Test Personnel"

Objective Evidence Examined:

Inspection Plans:

Rock Bolt Ground Support
ESF Ground Support
Lithium BromideTesting
Shotcrete Inspection

Qualification and certification records for the following inspection and test personnel:

Qualification Records:

E. Mauser, 11/29/92
E. Williams, 4/15/93
S. Ricks, 7/19/93
D. Busick, 4/15/93
S. Loftfield, 3/29/93
J. Geimer, 3/29/93

YMP Education and Experience Verification Records:

E. Mauser, 11/16/92
E. Williams, 4/9/93
S. Ricks, 7/12/93
D. Busick, 4/8/93
S. Loftfield, 3/16/93
J. Geimer, 3/16/93

Position Titles:

E. Mauser, 10/1/89
E. Williams, 10/1/89
S. Ricks, 10/1/89
D. Busick, 8/1/83
S. Loftfield, 8/1/83
J. Geimer, 8/1/83

Inspection and Test Personnel Record of Certification:

E. Mauser, 2/22/93
E. Williams, 11/2/93, 4/14/93
S. Ricks, 11/2/93, 7/19/93
D. Busick, 4/14/93, 11/2/93
S. Loftfield, 2/24/93
J. Geimer, 4/14/93, 11/2/93

Level II / Level III Evaluation Checklists:

E. Mauser, Level III, 2/22/93
E. Williams, Level II, 4/13/93, 11/1/93
S. Ricks, Level II, 7/1/93, 11/1/93
D. Busick, Level II, 4/13/93, 11/1/93
S. Loftfield, Level II, 2/24/93
J. Geimer, Level II, 4/14/93, 11/1/93

Annual Visual Requirements records:

E. Mauser, 11/8/93
E. Williams, 6/16/93
S. Risks, 6/28/93
D. Busick, 6/16/93
S. Loftfield, 6/16/93
J. Geimer, 6/16/93

Inspection Checklists for Lithium Bromide Storage Tank Tests:

QC0108, 5/7/93	QC0122, 6/30/93
QC0109, 6/3/93	QC0123, 7/1/93
QC0110, 6/4/93	QC0124, 7/6/93
QC0111, 6/7/93	QC0125, 7/6/93
QC0112, 6/10/93	QC0167, 9/27/93
QC0113, 6/15/93	QC0166, 9/22/93
QC0114, 6/17/93	QC0165, 9/16/93
QC0115, 6/22/93	QC0163, 9/9/93
QC0121, 6/24/93	QC0162, 9/7/93
QC0161, 9/5/93	QC0160, 9/2/93

Inspection Reports for Lattice Girder Installation:

Girder Station	Vertical or Horizontal	Date	Bolt#s
0+03	V	8/5/93	5-8, 41-44
0+00	V	8/5/93	5-8, 41-44
0+00	V	5/27/93	9-40
0+03	V	5/27/93	9-40
0+05	H	5/27/93	1-16
0+08	V	8/5/93	5-8, 41-44
0+08	V	5/27/93	9-40
0+10	H	5/27/93	1-4, 13-16
0+18	V	8/5/93	5-8, 41-44
0+18	V	5/27/93	9-16, 37-40
0+18	V	5/28/93	17-36
0+10	H	5/28/93	5-12
0+13	V	8/5/93	5-8, 41-44
0+13	V	5/27/93	9-40
0+15	H	5/27/93	1-4, 13-16
0+15	H	5/28/93	5-12
0+20	H	5/27/93	1-4, 13-16

0+20	H	5/28/93	5-12
0+23	V	8/5/93	5-8, 41-44
0+23	V	5/28/93	17-36
0+23	V	5/27/93	9-16, 37-40
0+25	H	5/27/93	1-4, 13-16
0+25	H	5/28/93	5-12
0+28	V	8/5/93	5-8, 14-44
0+28	V	5/27/93	9-12
0+28	V	5/28/93	13-20, 29-40
0+28	V	5/28/93	21-28
0+30	H	5/27/93	1-4, 13-16
0+30	H	5/28/93	5-12
0+33	V	8/5/93	5-8, 41-44
0+33	V	5/27/93	9-12
0+33	V	5/28/93	13-20, 29-40
0+33	V	5/29/93	21-28

Drill and Blast Log Sheets (including Rock Bolt Installation Inspection Reports):
See objective evidence for QA Program Element 14.0.

QA Program Element 12.0, Control of Measuring and Test Equipment

Procedures:

Compliance with the following procedures was reviewed:

DOE-RW/0333P, Revision 0, QARD, Section 12.0
MC-10.0, Revision 1, Measuring and Test Equipment

Objective Evidence Examined:

The following equipment was verified and checked:

PTL STD 22A	Torque cell with indicator
PTL STD 22B	Torque cell with indicator
PTL STD 37	Pressure gauge, panel 0 to 60 psig
PTL STD 38	Pressure gauge , panel 0 to 600 psig
PTL STD 40	Pressure gauge, 0 to 100 psig
PTL STD 66	Thermometer, digital -40 to + 1999 degrees F
PTL STD 70	Thermometer, digital -40 to + 1999 degrees F
PTL STD 110	Pressure controller calibrator, 0 to 100 psig, 0 to 1000 psig
Y103	Wire cloth sieve
Y105	Wire cloth sieve
Y10117	Gauge 0 to 30
Y10669	Balance, triple beam,
Y10673	Temperature gauge, -40 to 160 degrees
Y10716	Sieve tray 2.0 inches
Y10798	Scale,(platform)0-131 LBS

Y10900	Thermometer, (glass) -5 to 400 degrees C
Y10901	Thermometer, (glass) -10 to 400 degrees

QA Program Element 14.0, Inspection, Test and Operating Status

Procedures:

Compliance with the following procedures was reviewed:

DOE-RW/033P, QARD, Section 14
TC-586-SP-0001, Revision 1, "Sampling Lithium Bromide (LiBr) Tracer"
TC-581-TP-0002, Revision 1, "Testing of Underground Rock Bolt Ground Support"
TC-581-WP-0003, Revision 1, "Drilling and Blasting for Underground Construction Activities"
TC-581-SP-0007, Revision 2, "Starter Tunnel Shotcrete"
TC-581-SP-0011, Revision 3, "Exploratory Studies Facility Ground Support"

Objective Evidence Examined:

Nonconformance Reports:

YMPO-94-1
YMPO-94-2
YMPO-94-3

Shotcrete Inspection Reports:

Number	Date	Number	Date
930622-1	6/22/93	930727	7/27/93
930623	6/24/93	930806	8/6/93
930624-1	6/24/93	930807-1	8/7/93
930624-2	6/28/93	930807-2	8/7/93
930628-3	6/28/93	930807-3	8/9/93
930702-1	7/2/93	930809-1	8/9/93
930720-3	7/20/93	930809-2	8/9/93
930721-1	7/21/93	930809-3	8/9/93
930721-2	7/21/93	930810-1	8/10/93
930722-1	7/22/93	930810-2	8/10/93
930722-2	7/22/93	930817	8/17/93
930723-1	7/23/93	930818-1	8/18/93
930726-1	7/26/93	930818-2	8/18/93
930729-2	7/26/93	930819-1	8/19/93
930729-3	7/26/93	930819-2	8/19/93

Cement Grout Bolt Installation Inspection Reports:

Bolt or ring number	Date	Bolt or ring number	Date
25.0 C	8/26/93	25.4 L	8/24/93
25.5 L	9/23/93	25.1 R	8/26/93
25.6 L	9/23/93	25.2 R	8/25/93
25.7 L	9/23/93	25.3 R	8/25/93
25.1 L	7/28/93	25.4 R	8/25/93
25.2 L	7/28/93	26.0 C	7/28/93
25.3 L	8/27/93		

Drill and Blast Log Sheets (including Rock Bolt Installation Inspection Reports) for rounds and dates:

Round	Date	Round	Date
NB, CB, SB-001	7/31/93	NB, CB, SB-014	8/18/93
NB, CB, SB-002	8/2/93	NB, CB, SB-015	8/31/93
NB, CB, SB-003	8/2-3/93	NB, CB, SB-016	9/1/93
NB, CB, SB-004	8/3/93	NB, CB, SB-017	9/2/93
NB, CB, SB-005	8/4/93	NB, CB, SB-018	9/2/93
NB, CB, SB-006	8/11/93	NB, CB, SB-019	9/3/93
NB, CB, SB-007	8/11/93	NB, CB, SB-020	9/3/93
NB, CB, SB-008	8/12/93	NB, CB, SB-021	/97/93
NB, CB, SB-009	8/13/93	NB, CB, SB-022	9/7/93
NB, CB, SB-010	8/13/93	NB, CB, SB-023	9/8/93
NB, CB, SB-011	8/14/93	NB, CB, SB-024	9/8/93
NB, CB, SB-012	8/16/93	NB, CB, SB-025	9/9/93
NB, CB, SB-013	8/16/93		

QA Program Element 15.0, Nonconformances

Procedures:

Compliance with the following procedure was reviewed:

DOE-RW/0333P, Revision 0, QARD, Section 15.0
YAP-15.1Q, Revision O, ICN 1, Control of Nonconformances
MC-11.4, Revision 1, Trending

Objective Evidence Examined:

NCR Logs dated 4/19/94, 5/3/94

Nonconformance Reports:

NCR Number	Date Initiated	Status/Date Closed	Disposition/Comments
YMPO-94-0001#	12/1/93	Closed 1/26/94	Conditional Release/Use-As-Is*
YMPO-94-0002+	12/9/93	Closed 4/21/94	Conditional Release/Use-As-Is*
YMPO-94-0006	2/2/94	Closed 2/7/94	Use-As-Is*
YMPO-94-0010+	2/17/94	Closed 4/21/94	Conditional Release/Use-As-Is*
YMPO-94-0024@	3/17/94	Closed 3/31/94	Use-As-Is*
YMPO-94-0031#	4/27/94	Open	Reject/Scrap $
YMPO-94-0032	4/27/94	Open	Conditional Release* $
YMPO-94-0035	4/27/94	Open	Not completed $

Notes:

- # Revision 1
- + REECo DN 93-025 indicated in Block 6
- @ REECo DN 93-030 indicated in Block 6
- * Technical Justifications were provided in Block 4 for each Conditional Release and Use-As-Is dispositions.
- $ Hold Tags were verified attached to items

NCRs retrieved at the Local Records Center:

NCR Number	Accession Number
YMPO-94-0001	NNA.940502.0118 Correction to NNA.940221.0098
YMPO-94-0006	NNA.940502.0120 Correction to NNA.940221.0097
YMPO-94-0024	NNA.940411.0044

REECo NCRs written in accordance with AP 5.27Q and now being tracked by the M&O in accordance with CRWMS MGP-15.1, Revision 0 are listed below:

NCR-93-022 NCR-93-026 NCR-93-046 NCR-93-049
NCR-93-053 NCR-93-054 NCR-93-056 NCR-93-057
NCR-93-058 NCR-93-059 NCR-93-060

CRWMS MGP-15.1, Revision 0, Control of Nonconforming Items

Trend Reports	Date	Document ID	Accession Number
1993 Second Calendar Quarter	7/9/93	93-005611	NNA.930727.0045
1993 Third Calendar Quarter	10/4/93	93-008261	NNA.931020.0007

1993 Fourth Calendar Quarter	1/6/94	94-000151	NNA.940204.0062
1994 First Calendar Quarter	4/4/94	94-003052	NNA.940502.0002

Quality Program Status Reports:

Date	Document ID
7/3/93	93-005612
10/4/93	93-008260
1/5/94	94-000111
4/5/94	94-002991

Corrective Action Reports issued to identify negative trends:

CA-94-001, 10/22/93
CA-94-002, 10/22/93

QA Program Element 16.0 Corrective Action

Procedures:

Compliance with the following procedures was reviewed:

DOE-RW/0333P, Revision 0, QARD, Section 16.0
MC-11.1, Revision 2, Deficiency Notices
MC-11.0, Revision 2, Problem Identification and Control
MC-11.3, Revision 1, Corrective Action

Objective Evidence Examined:

Deficiency Notices:

DN-94-003
DN-94-006
DN-94-004
DN-94-007
DN-94-011
DN-94-017
DN-94-018
DN-94-022
DN-94-026
DN-94-030
DN-94-033

DN Log, dated 4/29/94
DN Transmittal letter, dated 4/1/94, #585-94-012
DN Transmittal letter, dated 4/5/94, #586-94-010

Corrective Action Requests:

CAR-94-001
CAR-94-002
CAR-94-004
CAR-94-005
CAR-94-003
CAR-93-002
CAR-93-005
CAR-93-006

Trend Reports:

First Quarter 1994, dated 4/4/94
Fourth Quarter 1993, dated 1/6/94

Trend Report Submittal:

Fourth Quarter 1993, dated 1/18/94, #586-94-002
Third Quarter 1993, dated 10/6/93, #586-93-027
First Quarter 1994, dated 4/13/94, #586-94-011

QA Program Element 17.0, Quality Assurance Records

Procedures:

Compliance with the following procedure was reviewed:

DOE-RW/0333P, Revision 0, QARD, Section 17.0
MC-12.0, Revision 2, Records Management Program
MC-12.1, Revision 2, ICN 4, Records Management for Records Sources

Objective Evidence Examined:

Records Authorization Forms:

YMP QA Department, 8/18/93, 6/10/92, 5/6/93, 4/21/93
Procurement & Property Management, 5/6/94

Qualification Records of Personnel authorized to Authenticate records:

Name	Evaluated by	Date
Robert R.Rommel	T. M. Leonard	6/21/91
David Wonderly	C. J. Mason	5/11/93
Thomas M. Leonard	R. F. Pritchett	6/21/91
Kristina L. Limon	R. F. Pritchett	2/14/92
Jon P. Hedlund	T. M. Leonard	5/3/93
Dave Hackbert	W. Glasser	6/21/91
Catheryn Davenport	T. M. Leonard	4/26/93
Marjorie Moulder	K. L. Limon	4/24/92
John P. McGoldrick	Steve Stroub	7/1/91

Record and Records Packages reviewed:

Accession Number	Document ID/Date	Authenticated by	Description
NNA.930520.0088	93-003678 5/11/93	Connie Barker	Personnel file for Jon P. Hedlund
NNA.930525.0126	93-003928 5/17/93	Connie Barker	Personnel file for K. L. Limon
NNA.930525.0124	93-003926 5/17/93	Connie Barker	Personnel file for T. M. Leonard
NNA.930525.0118	93-004010 5/18/93	Connie Barker	Personnel file for D.M.Wonderly
NNA.930720.0022	93-005534 7/9/93	Connie Barker	Personnel file for R.R.Rommel
NNA.920601.0042	92-003837 3/9/92	R. F. Pritchett	DOE System 80 Access List
NNA.931020.0007	93-008261 10/4/93	W. J. Glasser	1993 Third Calendar Quarter Trend Evaluation Report
NNA.930727.0045	93-005611 7/9/93	W. J. Glasser	1993 Second Calendar Quarter Trend Evaluation Report
NNA.940204.0062	94-000151 1/6/94	W. J. Glasser	1993 Fourth Calendar Quarter Trend Evaluation Report
NNA.940502.0002	94-003052 4/4/94	W. J. Glasser	1994 First Calendar Quarter Trend Evaluation Report

REECo Procedures verified for records and record packages to be generated:

TC-581-SP-007, Revision 2, Starter Tunnel Shotcrete
TC-581-WP-003, Revision 1, Drilling and Blasting for Underground Construction Activities
MC-13.2, Revision 1, Surveillances
MC-02.4.2, Revision 2, Personnel Qualification and Certification
MC-11.4., Revision 1, Trending
MC-12.1, Revision 2, ICN 3, Records Management for Record Sources
MC-05.1, Revision 2, Preparation, Review, and Approval of Management Control Procedures
MC-05.2, Revision 2, Preparation, Review, and Approval of Technical Control Procedures

MC-05.3, Revision 0, Preparation, Review, and Approval of Work Procedures
MC-07.0, Revision 2, Work Control

DOE System 80 Qualification Access List, Letter # 580-01-270, dated 3/9/92 from R. F. Pritchett to L.D. Foust, Accession Number NNA.92061.0042
DOE System 80 Qualification Access List, Letter # 580-01-453, dated 5/6/94 from D.L. Koss to L.D. Foust.

Microfilm reels verified for Privileged Records:

REECo Tracking Numbers 930922.0361 and 940215.0035

Records Submittal Forms:

Transmittal Number	Date	Transmitted By
587-94-003	1/31/94	M. D. Moulder, 9 procedure packages
587-94-009	3/29/94	M. D. Moulder, 9 procedure packages
584-93-028	5/17/93	A.L. McMullen, 3 training packages
584-93-029	5/20/93	A.L. McMullen, 25 training packages
584-93-042	7/13/93	A.L. McMullen, 19 training packages
586-94-010	4/5/94	A.L. McMullen, 9 QA record/record package
586-94-011	4/13/94	A.L. McMullen, 3 QA record/record package

Corrected Records:

Document ID SR-014-94, Dated 5/3/94, Surveillance Report SR-014-94, submitted as Document ID 94-003705
Accession Number NNA.930922.0361, REECo YMP Document Review Records (DRRs) for MC-06.3, Rev. 1
Accession Number NNA.940215.0035, REECo YMP DRRs for TC-581-SP-0001, Rev. 2

Corrections Prior to Submittals:

Training Requirements Form for Joseph A. Catozzi by Connie Barker, 1/14/94
Construction and Inspection Plan 93-0004, 2/11/93 corrected by R. R. Rommel, 2/24/93
Inspection Monitoring Report 3/18/93 for CIP 93-0004 corrected by E. Mouser, 3/19/93
Inspection Monitoring Report 3/19/93 for CIP 93-0004 corrected by E. Mouser, 10/6/93
Inspection Monitoring Report 3/22/93 for CIP 93-0004 corrected by E. Mouser, 10/4/92
Inspection Monitoring Report 3/23/93 for CIP 93-0004 corrected by E. Mouser, 10/4/93

Record, dated 11/19/93, Rock Storage Pad Geomembrane Liner, resubmitted as Record Package Segment, dated 5/6/94, Rock Storage Pad Geomembrane Liner, dated 5/6/94, Tracking Number DRC-026A, Job Package 92-20

Job Package 92-20 Revision 0, ESF North Portal Pad & Facilities, issued 10/29/92
Job Package 92-20 Revision 1, ESF North Portal Pad & Facilities, issued 1/10/94

In-process Construction Records at the FOC and Field Trailers for Job Package 92-20, Revision 0.

Drill and Blast Logs:

Date	Drill and Blast Round Number	Blast Location
4/13/93	NP-PD003	North Portal Sta. 0+10
4/29/93	NP-PD012	North Portal Sta. 61
8/4/93	NS-001, SS-001	North Portal Sta. 0+00
5/24/93	NS-004, SS-005	North Portal Sta. 0+15
6/3/93	NS-014, SS-014	North Portal Sta. 0+65
7/8/93	PD-026	North Portal Sta. 1+55
6/21/93	NS-021, SS-021	North Portal Sta. 1+10
7/31/93	NP-CB-01	North Portal Sta. 0+00
8/11/93	NP-CB-006 NB-006, SB-006	North Portal Sta. 0+44
9/1/93	NP-CB-016 NB-016, SB-016	North Portal Sta. 1+06
9/3/93	NP-CB-020 NB-020, SB-020	North Portal Sta. 1+44
9/7/93	NP-CB-021 NB-021, SB-021	North Portal Sta. 1+54

Shotcrete Placement Logs:

Date	Shift
9/16/93	Grave
9/17/93	Day
9/17/93	Grave
9/10/93	Grave
9/13/93	Day
8/6/93	Swing
7/23/93	Day
7/21/93	Swing
7/19/93	Day
7/2/93	Swing
6/25/93	Swing
6/23/93	Swing
6/9/93	Swing
5/10/93	Day

Deficiency Notice (DN) 94-017, issued 2/9/94, Shotcrete Placement Logs do not meet procedure and/or record requirements
Deficiency Notice (DN) 94-021, issued 2/25/94, Starter Tunnel Drill and Blast Logs were not completed correctly

In-process QC Records at the FOC and Field Trailers for Job Package 92-20, Revision 0.
Construction and Inspection Plan
Inspection Checklists
Inspection Reports

QA Program Element 18.0, Audits

Procedures:

Compliance with the following procedures was verified:

DOE-RW/0333P, Revision 0, QARD, Section 18.0
MC-13.0, Revision 3, Audits
MC-13.1, Revision 3, Auditor Qualifications

Audit Schedules:

Fiscal Year 1993, Revision 2
Fiscal Year 1994, Revision 0

Audits Reviewed:

REECo 001-93, Training and Qualification
REECo 002-94, Training and Qualification
REECo 003-94, Work Control
REECo 004-94, Work Control
REECo 009-93, Measuring and Test Equipment

Lead Auditors and Auditors Reviewed:

Position Description, Verification of Education and Experience, Annual Evaluations, Certifications:

D. A. Hackbert, Lead Auditor (LA)	6/17/92	1/20/94
E. S. Reiter, LA	6/21/91	1/20/94
P. J. Wilson, LA	6/17/92	1/19/94
K. A. Hodges, LA	10/21/93	1/19/94
W. J. Gratza, LA	6/15/91	1/19/94
Bob Hasson, Auditor (A)	4/14/94	
J. C. Constable, A	6/1/93	
P. E. Bryant, A	4/14/94	

Technical Specialists:

G. Erickson
Performed on Audit -0193 as a Technical Specialist prior to his orientation being documented. REECo initiated D/N 93-001 dated 1/7/93 to document this deficiency.

Audit Log, dated 4/29/94