

FEB 18 1994

Mr. Dwight E. Shelor, Associate Director
 for Systems and Compliance
 Office of Civilian Radioactive Waste Management
 U.S. Department of Energy
 1000 Independence Avenue, SW
 Washington, D.C. 20585

Dear Mr. Shelor:

SUBJECT: MINUTES OF THE NOVEMBER 16, 1993, QUALITY ASSURANCE MEETING

I am transmitting the enclosed minutes of the November 16, 1993, quality assurance (QA) meeting. The meeting attendees included representatives from the U.S. Nuclear Regulatory Commission; U.S. Department of Energy (DOE); Civilian Radioactive Waste Management System Management and Operating Contractor (M&O); Edison Electric Institute; U.S. Geological Survey; CER Corporation; the State of Nevada; Clark County, Nevada; and Nye County, Nevada.

At this meeting, DOE presented information on the following topics: (1) an update on the status of implementation of new Quality Assurance Requirements and Description document for the Civilian Radioactive Waste Management Program (QARD); (2) an update on the M&O Design Control Improvement Plan; (3) an overview of quality control inspection activities for the Exploratory Studies Facility (ESF); (4) corrective actions from previous audits of DOE Office of Environmental Restoration and Waste Management, Waste Management Projects, Vitrification Projects Division (EM-343); (5) update on the FY94 audit schedule; (6) the Site Characterization Plan (SCP) issues hierarchy and controls for resolution of SCP issues; (7) an update on QA overview of site characterization field activities; (8) progress in graded QA and the new Q-List; (9) root-cause analysis and corrective actions for Reynolds Electrical & Engineering Company, Inc. (REECo) surveying; and (10) an update on DOE's software QA. The NRC staff presented summaries of observations of recent DOE audits and surveillances and discussed the status of QA open items. The Nye County representative discussed the QA planning for the county's proposed independent drilling program at the Yucca Mountain site.

During the meeting DOE stated that the QA programs were in a transition period and being conducted under a mixture of both the old and the new QARDs. The audit of the REECo support of the Yucca Mountain Site Characterization Project, scheduled for December 1993, should be performed under the new QARD. DOE also stated that a draft Mined Geological Disposal System Design Process Guidelines Manual was scheduled for completion. Copies were provided to the State and to the NRC in December.

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 PDR WASTE
 WM-11 PDR

102.7
 WM-11
 NME 1/1

Mr. Dwight E. Shelor

If you have any questions regarding this letter or the enclosed meeting minutes, please contact Ken Hooks of my staff at (301) 504-2447.

Sincerely,

for

Original Signed by _____
Joseph J. Holonich, Director
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated *See Rpt.*

- cc: R. Loux, State of Nevada
- T. J. Hickey, Nevada Legislative Committee
- J. Meder, Nevada Legislative Counsel Bureau
- R. Nelson, YMPO
- M. Murphy, Nye County, NV
- M. Baughman, Lincoln County, NV
- D. Bechtel, Clark County, NV
- D. Weigel, GAO
- P. Niedzielski-Eichner, Nye County, NV
- B. Mettam, Inyo County, CA
- V. Poe, Mineral County, NV
- F. Mariani, White Pine County, NV
- R. Williams, Lander County, NV
- L. Fiorenzi, Eureka County, NV
- J. Hoffman, Esmeralda County, NV
- C. Schank, Churchill County, NV
- L. Bradshaw, Nye County, NV

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NAME	PBrooks/dh	<i>ppb</i>	KHooks	<i>ppb</i>	JHolonich	<i>ppb</i>
DATE	2/16/94	<i>ppb</i>	2/17/94	<i>ppb</i>	2/18/94	<i>ppb</i>

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*Rec'd with letter dtd.
2/18/94*

MINUTES OF THE NOVEMBER 16, 1993, QUALITY ASSURANCE MEETING

A meeting of the staff of the U.S. Nuclear Regulatory Commission and representatives of the U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM), to discuss items of mutual interest with regard to quality assurance (QA), was held at the NRC Headquarters in Rockville, MD on November 16, 1993. Representatives of the State of Nevada, Nye County, and Clark County participated in the meeting. An attendance list is included as Attachment 1.

At this meeting, DOE presented information on the following topics: (1) an update on the status of implementation of new Quality Assurance Requirements and Description document for the Civilian Radioactive Waste Management Program (QARD); (2) an update on the Civilian Radioactive Waste Management System Management and Operating Contractor (M&O) Design Control Improvement Plan; (3) an overview of quality control inspection activities for the Exploratory Studies Facility (ESF); (4) corrective actions from previous audits of DOE Office of Environmental Restoration and Waste Management, Waste Management Projects, Vitrification Projects Division (EM-343); (5) update on the FY94 audit schedule; (6) the Site Characterization Plan (SCP) issues hierarchy and controls for resolution of SCP issues; (7) an update on QA overview of site characterization field activities; (8) progress in graded QA and the new Q-List; (9) root-cause analysis and corrective actions for Reynolds Electrical & Engineering Company, Inc. (REECo) surveying; and (10) an update on DOE's software QA. The NRC staff presented summaries of observations of recent DOE audits and surveillances and discussed the status of QA open items. The Nye County representative discussed the QA planning for the county's proposed independent drilling program at the Yucca Mountain site.

The meeting began with opening remarks followed by introduction of the attendees. Following the introductions, DOE presented an update on the status of implementation of the QARD. All procedures under the new QARD may be completed by the end of the calendar year. DOE stated that implementation has begun in the transition period between cancellation of the old QARD and adoption of the new QARD. The process has taken time because participants must develop a matrix of the QARD requirements versus where in the supplier's QA procedures the requirement is covered. Attachment 2 provides a summary of progress toward completing procedures and the implementation status of the QARD.

Next, the DOE provided an update on the M&O Design Control Improvement Plan, summarized in Attachment 3. Thirty-six of fifty-four action items to achieve improvement had been completed at the time of the meeting. A Procedure Review Team plans to make trial runs to review procedures. A Quality Improvement Team is looking at design control and field change control. Copies of a draft Mined Geological Disposal System Design Process Guidelines Manual, scheduled for completion in November, and subject to revision, will be provided to the State and to NRC.

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A discussion of quality control inspection activities for the ESF followed. The approach to quality control activities, the role of the construction and inspection plan, the technical control procedure, the inspection checklist, methods of inspection and the records package were discussed. Job packages now identify quality versus non-quality work. Starter tunnel excavation was described as an example of a QA item completed to date. Attachment 4 summarizes the overview of ESF quality control inspection activities.

NRC's update on open items from its observations of DOE audits and surveillances was next on the agenda. One of the five open items the NRC had presented in the July meeting, namely the weaknesses reported in NRC's Observation Audit Report 93-07 on the audit of the M&O Las Vegas Nevada Office has been closed by letter dated September 17, 1993 from Shelor to Holonich. The remaining four items noted as weaknesses in NRC Observation Audit Reports were noted as still open. They are, first, a request for DOE to keep NRC staff informed of the corrective actions to be taken by EM-343 to prevent a recurrence of the Waste Acceptance Product Specifications for Vitrified High-Level Waste Forms being developed without a procedure. A second open item pertained to the Savannah River Site Defense Waste Processing Facility (DWPF) documenting deviations as Observations rather than as Deviation Corrective Action Reports and DWPF had no list of items and activities covered by the QA program scope of work. The third open item concerned the lack of a list of items and activities covered by the EM-343 QA program scope of work. The fourth open item relates to the lack of prescribed and documented criteria for conducting technical evaluations. Summaries presented in Attachment 5 are excerpts from publicly available NRC reports.

NRC's update on observations of recent audits and surveillances of DOE participants followed. Summaries of the following observation reports were presented: REECo in Las Vegas and the Nevada Test Site (NTS), Nevada (YMP-93-12); the Civilian Radioactive Waste Management System (M&O) in Las Vegas, Nevada (Internal audit 93-NSA-02); Raytheon Services Nevada, Las Vegas and NTS, Nevada (YMP 93-13); Lawrence Livermore Laboratory-Yucca Mountain Project (YMP-93-14), Livermore, California; EM-343 (Internal audit 93EA-VP-AU-001); and the M&O in Vienna, Virginia and Las Vegas, Nevada (Surveillance No. HQ-SR-93-07). The NRC also reported its observation of QA Audit No. 93-1 of its Federally Funded Research and Development Center, the Center for Nuclear Waste Regulatory Analyses in San Antonio, Texas. Usually, NRC has found that audit teams are performing adequate audits. Attachment 6 contains summaries of the NRC observation reports.

DOE then discussed the status of Corrective Action Requests (CARs) issued to EM-343 in 1993. See Attachment 7. All CARs are to be closed before acceptance of the EM-343 QA program. No changes in the audit schedule for the current calendar year are expected. The State expressed concern as to which audit will be chosen as the baseline audit when auditing against the new QARD and how the equivalency of the old and new QARDS will be documented.

The Site Characterization Plan (SCP) Issues Hierarchy was the subject of the next discussion. NRC noted that it was looking for the controls by which DOE will verify that each SCP issue is fully resolved. DOE sketched the process whereby the Issues Hierarchy is developed from the regulations and used in the Site Characterization Plan to identify information and testing needs which feed into Study Plans and the Annotated Outline (AO). Each design requirement is captured in the technical baseline. Thus each chapter of the AO is linked to Study Plans and data needs. DOE recognizes the need to map information back to the requirements. Changes to the SCP program are described in a semi-annual Progress Report. It was noted that the Technical Requirement Information Management System mentioned during the July 1993 QA meeting is no longer in use and a new tracking system is being developed.

In its update of field activities, DOE provided a QA overview of site characterization field activities. There were 27 Yucca Mountain Quality Assurance Division surveillances of field activities in FY 1993. Approximately 20 job packages have been started; about 25% have been completed; and none have been closed. Attachment 8 summarizes the update of field activities.

Next, DOE discussed the status of the Graded QA program. The revised Q-List was approved and issued on November 5, 1993, and the Quality Activities List was deleted November 4, 1993. M&O QAP 2-3, Revision 5, "Classification of Items," will replace AP 6.17Q, which will receive a cancellation review before being cancelled. The discussion is summarized in Attachment 9.

DOE then described the root-cause analysis and corrective actions for REECo on Corrective Action Request (CAR) YM-93-058. This CAR concerned the performance of quality-affecting survey activities performed without using procedures governed by the REECo YMP QA Program. An update of the cause, corrective actions and investigative actions to the date of the meeting is summarized in Attachment 10.

DOE then provided an overview of software QA in terms of audit results and CARs generated during FY 1993 audits that covered Software Quality Assurance Procedures and related Implementing Procedures. The information presented is summarized in Attachment 11.

State of Nevada and affected units of local government were then invited to present comments, ask questions, or raise any items of concern. The representative from Nye County discussed a proposed independent drilling program at Yucca Mountain which is being developed by the County. The proposed QA approach, currently using scientific notebooks is being written and will be sent to NRC for comment. The nature of the drilling program is under discussion with DOE. DOE will look at issues of test interference, waste isolation and sample handling if there is on-site drilling as part of the cooperative drilling program.

In closing, the DOE announced that the QA Managers Meeting scheduled for December 9, 1993, was open to NRC and Nevada attendees.

The meeting was adjourned after the participants tentatively set the next NRC/DOE QA meeting date as Thursday, February 24, 1994.

Pauline P. Brooks

**Pauline P. Brooks
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management
U. S. Nuclear Regulatory Commission**

Sharon L. Skuchko

**Sharon L. Skuchko
Regulatory Integration Branch
Office of Civilian Radioactive
Waste Management
U. S. Department of Energy**

November 16, 1993 NRC/DOE QA Meeting

ORGANIZATION/NAME

PHONE NUMBER

NRC

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Pauline Brooks	301-504-3465
Robert L. Johnson	301-504-2409
Dennis Reid	301-504-2482
John Jankovich	301-504-2454
Jack Spraul	301-504-2446

DOE

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Bob Clark	202-586-1238
Susan Jones	702-794-7613
Sharon L. Skuchko	202-586-4590
Richard E. Spence	702-794-7504

STATE OF NEVADA

Susan Zimmerman	702-687-3744
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NYE COUNTY

Malachy Murphy	206-754-6001
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CLARK COUNTY

E. v. Tiesenhausen	702-455-5175
--------------------	--------------

NWTRB

Sherwood Chu	703-235-4473
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CNWRA

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Ron Ruth
Jean Younker

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SAIC

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Wayne E. Booth

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Tom Colandrea

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USGS

Ray Wallace

202-586-1244

REECO

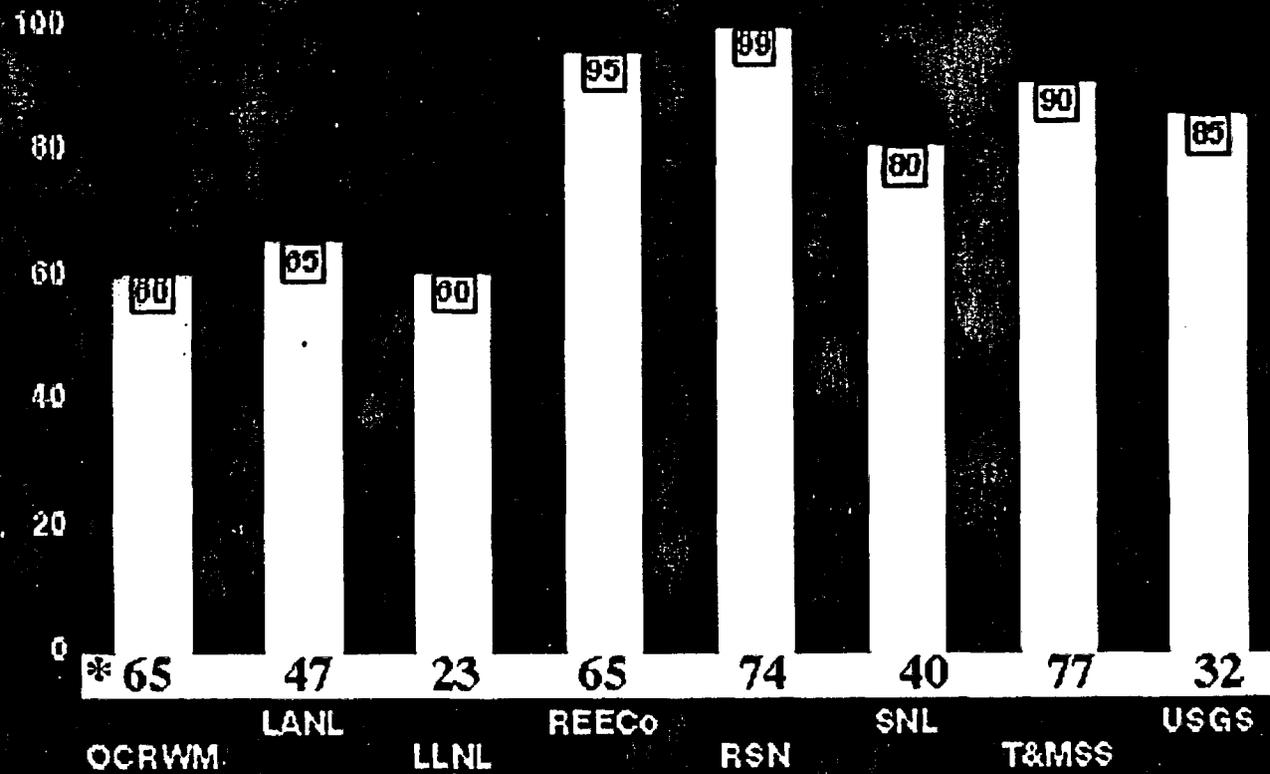
W. J. Glasser

702-794-7562

QARD Implementation Status

Org.	Submit Traceability Matrix/ Description of Org.	Ready to Impl.
LANL	12-31-93	12-31-93
LLNL	12-31-93	12-31-93
REEC _o	7-30-93	Reviewed
RSN	6-14-93	Reviewed
SNL	11-30-93	11-30-93
T&MSS	7-30-93	In Review
USGS	10-22-93	In Review
YMPO	12-30-93	12-30-93

QA Program Completion



M&O Design Control

Improvement Plan

M&O DESIGN CONTROL IMPROVEMENT PLAN

MGDS Design Control Improvement Plan

- ▶ **Identified 17 areas where improvement was needed**
 - **Based on self-assessment and evaluation of internal and external CARs**
- ▶ **Established 54 specific actions to be taken**

Implementation

- ▶ **36 actions complete**
- ▶ **10 pending**
- ▶ **8 on-going**

M&O DESIGN CONTROL IMPROVEMENT PLAN

Major Improvement Actions

- ▶ L2, Procedure Review Team (PRT)**
 - established to trial run procedures**
 - PRT has reviewed 8 procedures and in each case provided recommended improvements**

M&O DESIGN CONTROL IMPROVEMENT PLAN

Major Improvement Actions (continued):

- ▶ M1, Develop MGDS Design Manual**
 - First Draft due November 19, 1993**
 - Second Draft due January, 1994**
 - Suggested topics: Generic process flow; organization interfaces, responsibility and authority; Design Requirements; Databases; Reviews; Design Outputs**

M&O DESIGN CONTROL IMPROVEMENT PLAN

OQA QUALITY IMPROVEMENT TEAM

▶ Design Control

- Review Flowchart of present process and recommend improvements**
- Review Design Manual and recommend improvements**

▶ Field Control

- Review "Submittals Required by Specification" process**
- Review "NCR disposition" process**

M&O DESIGN CONTROL IMPROVEMENT PLAN

OQA QUALITY IMPROVEMENT TEAM

▶ Procedure Control

- Informally review selected procedures**
- Participate as member of PRT**

▶ Audits and Surveillances

- Provide auditor training course**
- Review audit schedule and recommend improvements**
- Review surveillance process and recommend improvements**

M&O DESIGN CONTROL IMPROVEMENT PLAN

OQA QUALITY IMPROVEMENT TEAM

▶ CAR Status

- Obtain status of all CARs issued against the M&O**
- Review responses to CARs for consistency and overlapping corrective action**



**OVERVIEW OF
QUALITY CONTROL INSPECTION
ACTIVITIES ON ESF**

**Presented at
NRC/DOE MEETING ON QUALITY ASSURANCE**

NOVEMBER 16, 1993

William J. Glasser

JOB PACKAGE (JP)

- **WORK AUTHORIZATION DOCUMENT**
- **OUTLINES SPECIFIC WORK REQUIREMENTS INCLUDING CONSTRUCTION OF CONFIGURATION ITEMS**
- **IDENTIFIES PARTICIPANTS AND RESPONSIBILITIES**
- **PREPARED IN ACCORDANCE WITH AP5.21Q "FIELD WORK ACTIVATION"**

JOB PACKAGE 92-20

Manages construction of configuration items and related activities

Configuration items include:

**North Portal PAD
ACCESS ROAD for North Portal
Muck Storage PAD
Topsoil Storage PAD
North Portal Electrical Power SYSTEM
North Portal Lighting SYSTEM
North Portal Electrical Grounding SYSTEM
NP Mine Wastewater SYSTEM
NP Mine Wastewater POND
NP 200,000 Gal WATER TANK
NP 50,000 GAL WATER TANK
NP Potable Water SYSTEM
NP Sanitary Sewer SYSTEM
NP Septic TANK & LEACH FIELD
BOOSTER PUMP STATION
20,000 GAL Forebay WATER STORAGE TANK
North Portal ELECTRICAL SWITCHGEAR BLDG.
LAUNCH CHAMBER (Starter Tunnel) North Ramp
Tunnel Boring Machine**

Job package defines REECo as First Line Quality Control

TBM STARTER TUNNEL EXCAVATION

REECo First Line Inspection includes:

- Receipt Inspection of all ground support items
- Inspection of drill and blast activities
- Inspect Installation of ground support (Rockbolts)
- Witness and inspect shotcrete placement for ground support
- Witness preparation of pumpable grout
- Sample grout for laboratory testing
- Witness preparation of shotcrete test panels by nozzleman
- Review material test lab results
- Witness rockbolt pull testing
- Sample traced water for LiBr concentration

CONSTRUCTION & INSPECTION PLAN (CIP)

- Prepared and approved by both Constuction and Quality Control
- Manages a specific scope of work
- Identifies witness and hold points
- Always tied to a job package and a configuration item
- Provides an outline of work activities and Identifies where inspections are required
- Identifies specific drawings, specifications, and work procedures
- Identifies Inspection checklists to be used

TECHNICAL CONTROL (TC) PROCEDURE

- **Implements a specific type of work or activity**
- **Provides step by step instructions**
- **As a construction department document, implements witness and hold points**
- **Provides a place for inspection to release hold points if not controlled by the CIP**
- **Provides for records of Construction Department activities**

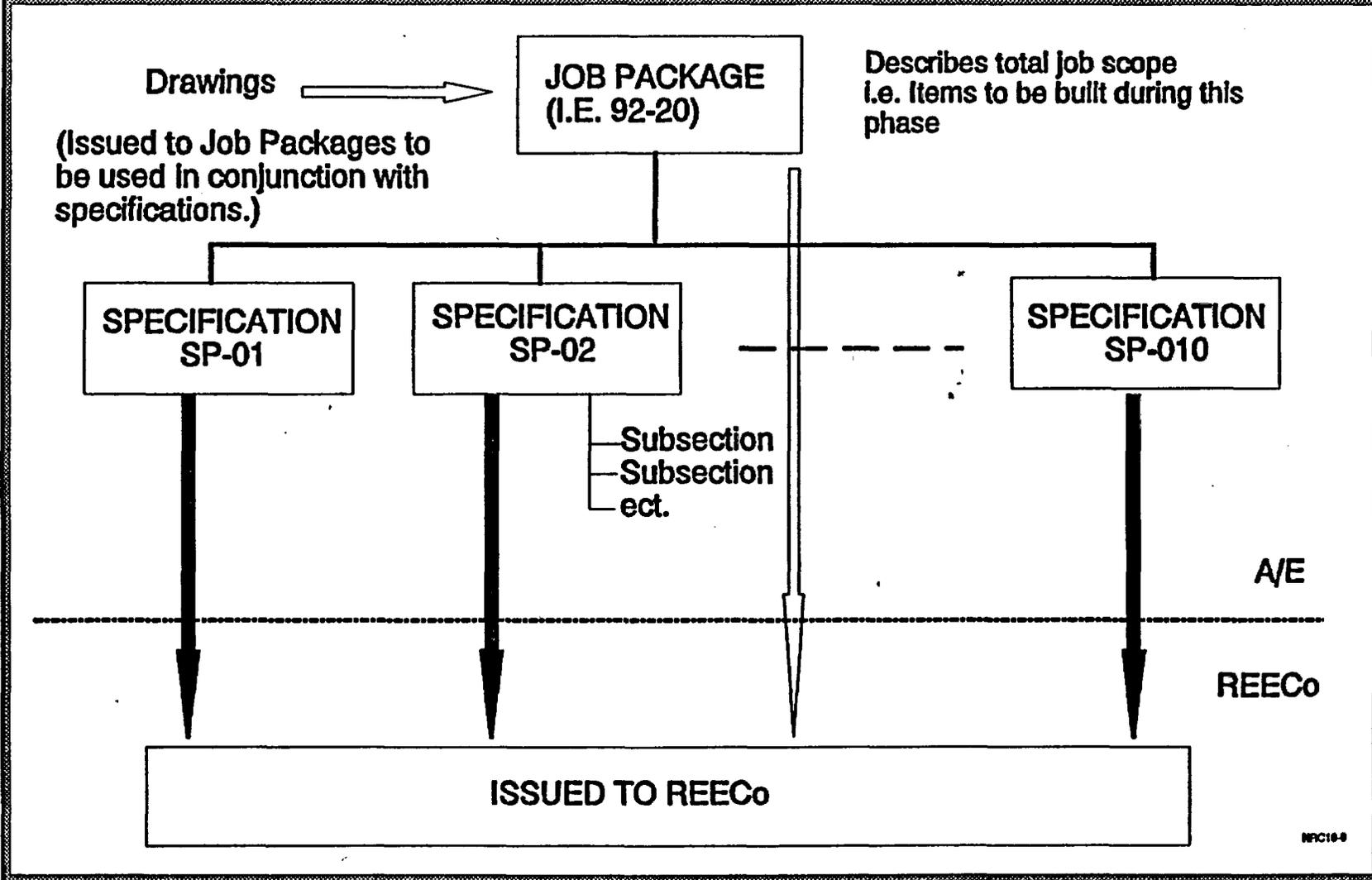
INSPECTION CHECKLIST (IC)

- **Primary inspection planning document**
- **Prepared by QC to meet specific specification and subsection requirements**
- **Is the basis for establishing witness and hold points in CIP**
- **Identifies Inspectable characteristics required by specifications**
- **References or includes inspection criteria**
- **Used by the Inspector for final inspection planning, tailoring the IC to a specific Item**
- **Identifies specific drawings used and the CIP that it supports**
- **Assigned a unique identification number for the specific activity**
- **May be used by the Inspector to document acceptance or references use of Inspection Reports for repetitive operations**
- **Documents the basis to sign-off witness and hold points on CIPs or TCs**

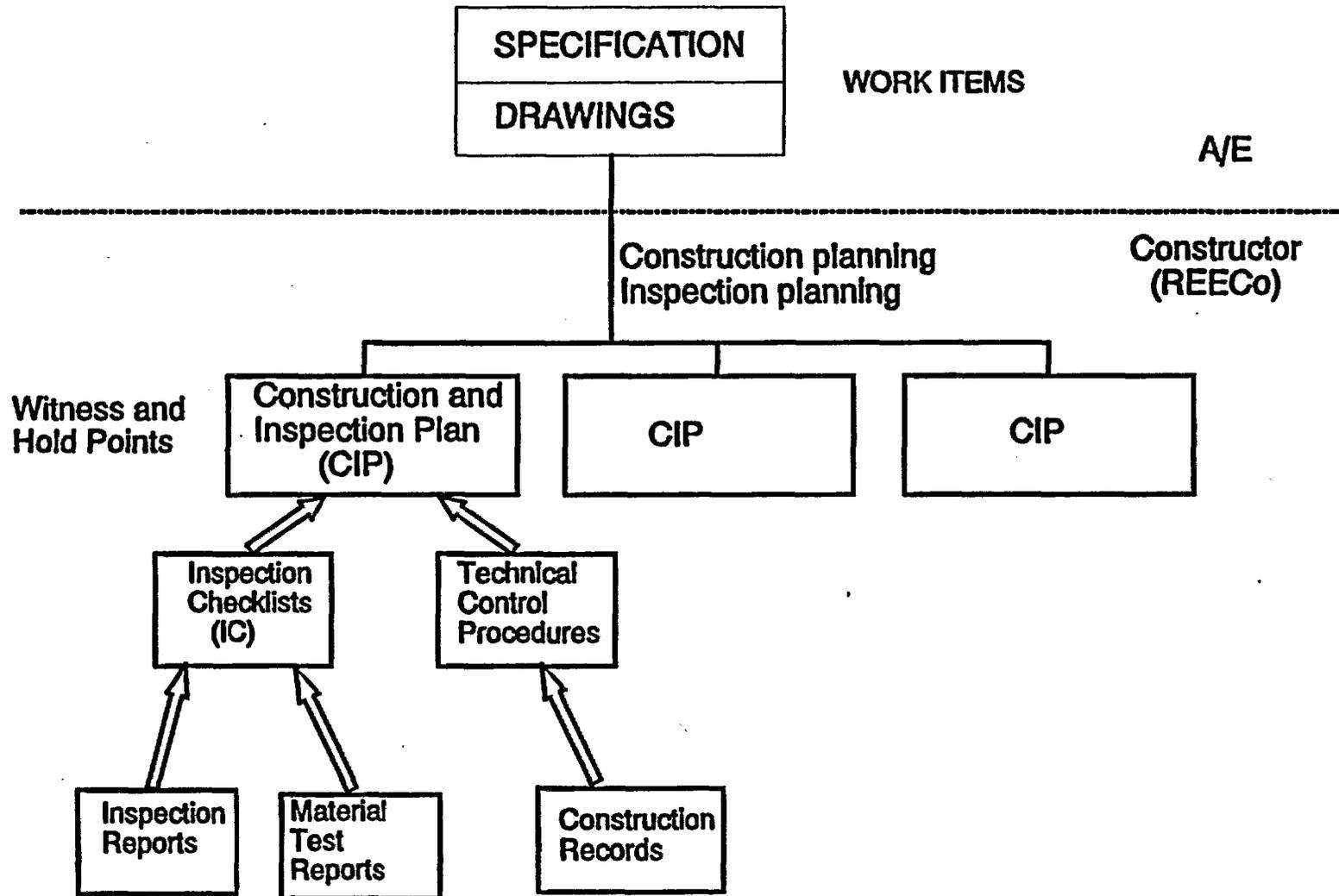
INSPECTION REPORTS (IR)

- **Used as supporting documentation to issued Inspection Checklists**
- **May be used by inspector to accept IC items**
- **References the issued IC and CIP**
- **Generally used to document acceptance of repetitive inspections (such as individual rockbolts governed by one issued IC)**

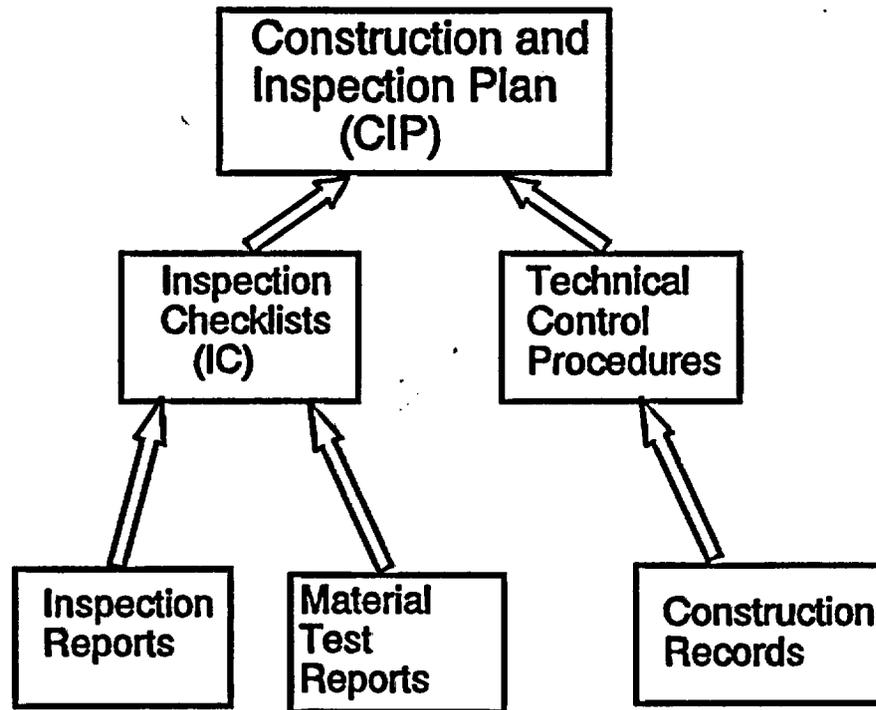
WORK AUTHORIZATION



WORK IMPLEMENTATION



RECORDS PACKAGE



Record Package

Prepared by Field QC
Reviewed by QA
Submitted to Doc. Rec. Ctr
Copy to A/E Title III

SUBJECT: STATUS OF NRC/DOE QA OPEN ITEMS - NOVEMBER 16, 1993
 (Bracketed items = new items added since last QA meeting)

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>STATUS</u>	<u>RECOMMENDATION FOR CLOSURE/REMARKS</u>
1-93	Response to NRC Observation Audit Report 93-01 for USGS dated 12/7/92	OPEN	DOE should respond within 60 days of the date of the NRC Observation Audit Report transmittal. (1) Weakness 5.10 (b) (1) - Audit technical evaluations and criteria for conducting technical evaluations are not prescribed by documented instructions or procedures.
2-93	Response to NRC Observation Audit Report 93-04 for EM-343 dated 2/17/93	OPEN	(1) Weakness 5.9.2 - No list of items and activities covered by the EM-343 QA program scope of work.
3-93	Responses to NRC Observation Audit Report 93-07 for MSO. NV dated 4/6/93	CLOSED	(1) Weakness 5.9.2 - Personnel knowingly not following procedures. (2) Weakness 5.9.2 - Numerous deficiencies combined into single CAR may be difficult to accurately track for corrective action. CLOSED - Sept. 17, 1993 letter/DOE response(D. Shelor to J. Holonich)
4-93	Response to NRC Observation Surveillance Report 93-S3 for EM-343 dated 7/1/93	OPEN	(1) Waste Acc. Product Specifications for Vitrified High-Level Waste Forms performed without procedure. NRC requests DOE inform NRC of actions taken by EM-343 to preclude this type of recurrence.
5-93	Responses to NRC Observation of Sav. Riv. Audit dated 6/25/93	OPEN	(1) Deviations documented as Observations and not DCARs. (2) No list of items and activities covered by the DWPF QA program scope of work (See Item 1-93 above)

1.0 INTRODUCTION

From June 21-25, 1993, members of the U.S. Nuclear Regulatory Commission quality assurance (QA) staff of the Division of High-Level Waste Management observed a U.S. Department of Energy, Office of Civilian Radioactive Waste Management (OCRWM), Yucca Mountain Quality Assurance Division (YMQAD) QA audit of the Reynolds Electrical & Engineering Co., Inc. (REECO) QA program in Las Vegas, Nevada and at the Nevada Test Site in Mercury, Nevada. The audit evaluated the adequacy and effectiveness of the REECO QA program in seven programmatic areas.

This report addresses the effectiveness of the YMQAD audit and the adequacy of implementation of the QA controls in the audited areas of the REECO QA program.

2.0 OBJECTIVES

The objectives of the audit by YMQAD were to determine whether the REECO QA program and its implementation meet the applicable requirements and commitments of the OCRWM Quality Assurance Requirements Document (QARD), the OCRWM Quality Assurance Program Description (QAPD), and associated implementing procedures.

The NRC staff's objective was to gain confidence that OCRWM and REECO are properly implementing their QA program requirements in accordance with the QARD, QAPD, and Title 10 of the Code of Federal Regulations (10 CFR), Part 60, Subpart G (which references 10 CFR Part 50 Appendix B).

3.0 SUMMARY AND CONCLUSIONS

The NRC staff based its evaluation of the YMQAD audit process and implementation of the REECO QA program on direct observations of the auditors; discussions with audit team and REECO personnel; and reviews of the audit plan, the audit checklists, and other pertinent documents. The NRC staff has determined that QA Audit YMP-93-12 was useful and effective. The audit was well organized and conducted in a thorough and professional manner with minimal logistic delays. Audit team members were independent of the activities that they audited. The audit team was well qualified in the QA discipline, and its assignments and checklist items were adequately described in the audit plan.

The NRC staff agrees with the YMQAD audit team's preliminary findings that the REECO QA program generally has adequate controls in place and that the overall implementation of the REECO QA program is effective. The REECO QA program was adequate in six of the seven programmatic areas audited; the procurement area was unsatisfactory; and a segment of one of the areas pertaining to shotcrete (Portland Cement concrete pneumatically projected at high velocity onto a prepared surface) was unsatisfactory. Eleven preliminary Corrective Action Requests (CARs) were issued by the YMQAD audit team; seven against the REECO QA program and four against the QA program of the Civilian Radioactive Waste Management System Management and Operating Contractor (M&O). None of the preliminary CARs identified by the YMQAD audit team are significant in terms of the overall REECO and M&O QA programs or pose a condition that may impact safety or waste isolation.

OCRWM should continue to closely monitor implementation of the REECo and M&O QA programs to ensure that the deficiencies identified during this audit are corrected in a timely manner and that future QA program implementation is effective. The NRC staff expects to participate in this monitoring as observers and may perform its own independent audits at a later date to assess the implementation of the REECo QA program.

5.8 Summary of NRC Staff Findings

5.8.1 Observations

The NRC staff did not identify any observations relating to deficiencies in either the audit process or the REECo QA program.

5.8.2 Weaknesses

- The procurement of commercial grade items needs to be standardized among all Yucca Mountain Site Characterization Project participants (See Section 5.3.1)
- The FCR process is not "user friendly" (See Section 5.3.3).

5.8.3 Good Practices

- The performance-based approach to auditing appears to be well suited for effective and efficient audits of construction activities, particularly when auditing the implementation of procedures that address a number of QA program criteria associated with the activity.

CNWRA

1.0 INTRODUCTION

From May 4-7, 1993, members of the U.S. Nuclear Regulatory Commission quality assurance (QA) staff participated as observers in the Center for Nuclear Waste Regulatory Analyses (CNWRA) QA Audit No. 93-1 conducted in San Antonio, Texas. The CNWRA is the NRC's Federally Funded Research and Development Center and is the NRC's primary source of research and technical assistance in the high-level nuclear waste program. The audit evaluated the adequacy and effectiveness of the CNWRA QA program and its implementation. Fourteen QA programmatic areas and six technical areas were audited. This report addresses the effectiveness of the audit and the procedural adequacy and effectiveness of implementation of QA program controls in the audited areas.

2.0 OBJECTIVES

The CNWRA objective for this audit was to evaluate the implementation of QA controls associated with CNWRA QA programmatic and technical activities in meeting the applicable requirements of Appendix B to Title 10, Code of Federal Regulations (10 CFR), Part 50. The NRC staff's objectives were to determine 1) if the audit was performed in such a manner as to provide confidence in the CNWRA audit process and 2) whether CNWRA staff were properly implementing QA program requirements specified in the CNWRA Quality Assurance Manual (CQAM).

3.0 SUMMARY AND CONCLUSIONS

The NRC staff based its evaluation of the audit process and the CNWRA QA program on 1) discussions with and direct observations of a) the auditors and technical specialists of the audit team [who were on loan from the CNWRA's parent organization, Southwest Research Institute - SwRI] and b) CNWRA staff being audited and 2) reviews of pertinent audit documentation such as the audit plan, the audit checklist, and other CNWRA documents. The NRC staff has determined that, overall, Audit No. CNWRA 93-1 achieved its purpose of evaluating the implementation of controls of QA programmatic and technical activities. The audit was conducted in a professional manner. The audit team was well qualified and familiar with the QA requirements of the CNWRA program. The individual assignments and checklist items were adequately described in the audit plan.

In general, the NRC staff agrees with the audit team's preliminary findings that the CNWRA QA program controls are being adequately implemented in the areas that were evaluated. In addition, the NRC staff believes that the CNWRA audit was thorough and effective. The qualifications of CNWRA technical staff and the technical adequacy of the procedures and work products are subject to continuing evaluation by NRC technical staff.

CNWRA QA personnel should continue to monitor the QA program to ensure that future implementation is carried out in an adequate manner. The NRC staff expects to participate in this monitoring as observers and may perform its own independent audit at a later date to determine the adequacy and effectiveness of the CNWRA QA program.

7.0 SUMMARY - NRC STAFF FINDINGS

7.1 Weakness

It appears that the QA program could benefit substantially by improving the configuration management system. An example problem is described in Section 6.0.3 above. The NRC staff believes that TOP-018 could be improved to more effectively control the development and maintenance of computer software.

7.2 Good Practices

Integration of the QA programmatic and technical portions of the audit was very good. The NRC staff believes that some of the integration problems reported earlier have been overcome since the first "performance-based" audit for the ATL. The "performance-based" audit process has also become more effective with the increased number of work products. Evaluating the QA programmatic controls becomes more effective with more technical products to examine.

The audit team was well prepared and conducted a thorough audit in a professional manner.

The ATL did an excellent job of organizing and executing the audit. The practice of reviewing the checklist items at the daily caucus to ensure completion of the checklist by the end of the audit was very effective and useful.

OBSERVATION SURVEILLANCE REPORT NO. 93-S4

1.0 INTRODUCTION

From July 15-16, 1993, the U.S. Department of Energy (DOE) Office of Civilian Radioactive Waste Management, Yucca Mountain Quality Assurance Division (YMQAD) conducted Quality Assurance (QA) Surveillance No. YMP-SR-93-033 of the Civilian Radioactive Waste Management System Management, and Operating Contractor (M&O) in Las Vegas, Nevada.

2.0 PURPOSE

The U.S. Nuclear Regulatory Commission staff observed and evaluated the YMQAD QA surveillance to gain confidence that the YMQAD and M&O are properly implementing the requirements of their QA programs by assessing the effectiveness of the YMQAD surveillance and the adequacy of the M&O QA program in the areas surveilled. The NRC staff's evaluation is based on direct observations of the surveillance process, discussions with the surveillance team members, and reviews of the pertinent M&O records.

3.0 SCOPE

The scope of this surveillance was to review the design process utilized for the development and processing of design drawings involving the realignment of the Exploratory Studies Facility Starter Tunnel. The surveillance included an evaluation of the effectiveness of the design control process and the extent QA program requirements are complied with.

5.0 SURVEILLANCE SUMMARY RESULTS

Four preliminary Corrective Action Requests (CARs) were identified by the surveillance team in the areas of inadequacies of design reviews, design inputs and lack of design input information to be verified. One preliminary CAR was issued against the Yucca Mountain Site Characterization Project Office (YMPO) for not properly identifying the review organizations and the method for the design change organization. The other three preliminary CARs were issued against the M&O for not properly addressing design inputs, not documenting the basis for impact analysis, and omitting a requirement to be verified.

Based on the surveillance findings, the surveillance team concluded that this portion of the M&O design process was ineffective. During the surveillance exit it was emphasized by YMPO that M&O management should recognize the seriousness of the findings and the importance of assuring that prompt corrective actions are identified and implemented to correct the affected design drawings and to preclude recurrence of similar deficiencies.

6.0 NRC CONCLUSIONS

The NRC staff has determined that the YMQAD surveillance of the M&O design control process was useful and effective. The NRC staff agrees with the surveillance team's preliminary conclusion that the M&O design process was ineffective in the areas surveilled.

The NRC staff will continue to closely monitor the implementation of the M&O QA program, especially in the area of design, to ensure that the deficiencies identified during this surveillance are corrected in a timely manner and that QA program implementation is effective.

1.0 INTRODUCTION

During July 12-16, 1993, members of the quality assurance (QA) staff of the U.S. Nuclear Regulatory Commission Division of High-Level Waste Management observed a U.S. Department of Energy (DOE) Office of Civilian Radioactive Waste Management (OCRWM), Office of Quality Assurance, Yucca Mountain Quality Assurance Division (YMQAD) audit of Raytheon Services Nevada (RSN). The audit, YMP-93-13, was conducted at the RSN offices in Las Vegas, Nevada, and at the Nevada Test Site (NTS). The audit evaluated the adequacy and effectiveness of the RSN QA program in 17 programmatic areas. No technical areas were included in the scope of this audit. A State of Nevada representative was an observer at this audit.

This report addresses the effectiveness of the YMQAD audit and the adequacy and implementation of the QA controls in the audited areas of the RSN QA program.

2.0 OBJECTIVES

The objectives of the audit by YMQAD were to determine whether the RSN QA program and its implementation meet the applicable requirements and commitments of the OCRWM Quality Assurance Requirements Document (QARD), the OCRWM Quality Assurance Program Description (QAPD), the RSN QAPD and associated implementing procedures.

The NRC staff's objective was to gain confidence that YMQAD and RSN are properly implementing the requirements of their QA programs in accordance with the OCRWM QARD, the OCRWM QAPD, the RSN QAPD, and Title 10 of the Code of Federal Regulations (10 CFR), Part 60, Subpart G (which references 10 CFR Part 50, Appendix B).

3.0 SUMMARY AND CONCLUSIONS

The NRC staff based its evaluation of the YMQAD audit process and the RSN QA program on direct observations of the auditors; discussions with audit team and RSN personnel; and reviews of the audit plan, the audit checklists, and other pertinent documents. The NRC staff has determined that YMQAD Audit YMP-93-13 was useful and effective. The audit was organized and conducted in a thorough and professional manner. Audit team members were independent of the activities that they audited. The audit team was well qualified in the QA discipline, and its assignments and checklist items were adequately described in the audit plan.

The NRC staff agrees with the preliminary YMQAD audit team finding that implementation of the RSN QA program in the areas audited is generally adequate. Nine preliminary Corrective Action Requests (CARs) were discussed by the YMQAD audit team at the post-audit meeting. Several other potential CARs were acceptably resolved by the RSN organization during the audit. None of the preliminary CARs identified by the YMQAD audit team is significant in terms of the overall RSN QA program.

5.8 Summary of NRC Staff Findings

5.8.1 Observations

The NRC staff did not identify any observations relating to deficiencies in either the audit process or the OCRWM QA program.

5.8.2 Good Practices

No new good practices were identified.

5.8.3 Weaknesses

None were identified.

1.0 INTRODUCTION

During July 19 through 23, 1993, members of the quality assurance (QA) and technical staff of the NRC Division of High-Level Waste Management (HLWM) observed a U.S. Department of Energy (DOE) Office of Civilian Radioactive Waste Management (OCRWM), Office of Quality Assurance, Yucca Mountain Quality Assurance Division (YMQAD) audit of the Lawrence Livermore National Laboratory - Yucca Mountain Project (LLNL-YMP). The audit, YMP-93-14, was conducted at the LLNL-YMP facilities in Livermore, California. The audit evaluated the adequacy and effectiveness of the LLNL-YMP QA program. Four technical areas and six QA programmatic areas were audited.

This report addresses the effectiveness of the YMQAD audit and the adequacy of implementation of the QA controls in the audited areas of the LLNL-YMP QA program.

2.0 OBJECTIVES

The objectives of the audit by YMQAD were to determine whether the LLNL-YMP QA program and its implementation meet the applicable requirements and commitments imposed by the OCRWM Quality Assurance Requirements Document, the LLNL-YMP quality Assurance Program Description, and associated LLNL-YMP implementing procedures.

The NRC staff's objective was to gain confidence that YMQAD and LLNL-YMP are properly implementing the requirements of their QA programs in accordance with Title 10 of the Code of Federal Regulations (10 CFR), Part 60, Subpart G (which references 10 CFR Part 50, Appendix B).

3.0 SUMMARY AND CONCLUSIONS

The NRC staff based its evaluation of the YMQAD audit process and the LLNL-YMP implementation of the LLNL-YMP QA program on direct observations of the audit team members; discussions with audit team, LLNL-YMP, and LLNL-YMP contractor personnel; and reviews of the audit plan, the audit checklists, and other pertinent documents. The NRC staff has determined that YMQAD QA Audit YMP-93-14 was useful and effective. The audit was well organized and conducted in a thorough and professional manner with minimal logistic delays. Audit team members were independent of the activities that they audited. The audit team was well qualified in the QA discipline, and its assignments and checklist items were adequately described in the audit plan.

The NRC staff agrees with the preliminary audit team findings that the LLNL-YMP QA program has adequate procedural controls in place and that program implementation in the areas audited is generally satisfactory. The only exception to satisfactory program implementation is in the areas of nonconformance control and software QA where there has been insufficient implementation since the last audit of these areas to judge their effectiveness. The classification of software controls continues as unsatisfactory from a previous YMQAD audit of that area because there has been inadequate activity in that area to change the classification.

The audit team provided six recommendations to improve the LLNL-YMP QA program, and six preliminary Corrective Action Requests (CARs) were generated

by the audit team during the audit: five of the six preliminary CARs were acceptably resolved by LLNL-YMP during the audit. The preliminary CARs identified by the YMQAD audit team are not significant in terms of the overall implementation of the LLNL-YMP QA program.

OCRWM should continue to closely monitor LLNL-YMP implementation of its QA program to ensure that the deficiency identified during this audit is corrected in a timely manner and that future QA program implementation is effective. The NRC staff expects to participate in this monitoring as observers and may perform its own independent audits later to assess LLNL-YMP implementation of its QA program.

5.8 Summary of NRC Staff Findings

The NRC staff did not identify any observations relating to deficiencies in either the OCRWM audit process or the implementation of the LLNL-YMP QA program.

5.9 Summary of YMQAD Audit Findings

Within the scope of this audit, the audit team concluded that the LLNL-YMP QA procedures are adequate and that LLNL-YMP's QA program implementation in the areas audited is adequate except for software control. While this audit identified no significant deficiencies regarding computer software, a previous YMQAD audit had concluded that software controls were unsatisfactory due to software problems noted in LLNL-YMP CARs. The audit team concluded that insufficient implementation has occurred in this area since that determination to change the status. Thus the status of software controls is to remain unsatisfactory.

The audit team provided six recommendations to improve the LLNL-YMP QA program, and six preliminary CARs, were generated by the audit team during the audit: five of the six preliminary CARs were acceptably resolved by LLNL-YMP during the audit. The preliminary CAR which was not closed during the audit addressed the lack of audit/documented evaluation of ANL and PNL since September 1991. The recommendations and preliminary CARs do not indicate any significant shortcoming in the QA program of LLNL-YMP.

AUG 13 1993

Mr. Dwight E. Shelor, Associate Director
for Systems and Compliance
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Shelor:

**SUBJECT: OBSERVATION AUDIT OF THE U.S. DEPARTMENT OF ENERGY VITRIFICATION
PROJECTS DIVISION**

This letter transmits the U.S. Nuclear Regulatory Commission comments resulting from its observation of the August 2-6, 1993, U. S. Department of Energy (DOE), Office of Environmental Restoration and Waste Management, Waste Management Projects, Vitrification Projects Division (EM-343) internal quality assurance (QA) audit (Audit 93EA-VP-AU-001) in Germantown, Maryland. The audit was performed by a team of consultants. A representative of the DOE Office of Civilian Radioactive Waste Management also observed this audit. EM-343 is responsible for the administration and overview of site field offices to ensure the acceptability of high-level radioactive canistered waste forms.

The objective of this internal EM-343 QA audit was to assess the overall adequacy, implementation, and effectiveness of the EM-343 QA program for the waste acceptance activities related to high-level waste form production. In addition, the audit served to follow-up on corrective action requests identified during previous internal and external audits. Our objectives were (a) to determine whether the audit was performed in such a manner as to provide confidence in the EM-343 audit process and (b) to determine whether EM-343 was properly implementing the requirements specified in Revision 1 of its Quality Assurance Program Description and the EM-343 implementing procedures.

Two Deviation Corrective Action Reports (DCARs) work are scheduled to be issued by the audit team. They concern the need to establish a root cause analysis methodology and the need to upgrade the training/training records of personnel performing EM-343 work. Several other deviations in the area of nonconformance control were also identified by the audit team and corrected during the audit. At the exit meeting with EM-343 personnel, the audit team also reported a number of observations/recommendations which it felt would improve the EM-343 QA program and its implementation. These observations/recommendations and deviations are not significant in terms of the overall QA program, and they do not affect the quality of the EM-343 activities. Except as noted, EM-343 was found to be properly implementing its QA program for the areas audited.

~~9308190339~~

Mr. Dwight E. Shelor

- 2 -

The NRC staff found the audit to be satisfactory both from the perspective of the audit team, EM-343, and EM-343 contractors. The audit team was well qualified in the QA discipline, and its checklists were acceptable. The audit was well organized and conducted in a thorough and professional manner. However, there were significant logistic delays caused by the fact that the audit team work area was about one mile from the location of the EM-343 personnel undergoing the audit.

The audit team made use of prior audit findings. This resulted in comprehensive audit preparation, conduct, and conclusion. The audit team did not include any technical specialists, and no evaluation was made of the technical adequacy of work products. EM-343 management indicated that technical adequacy will be within the scope of future internal audits and surveillances.

At the pre-audit conference, the audit team noted that QA Criteria 8 through 14 do not apply to EM-343 activities. At the post-audit conference, the audit team concluded that QA Criteria 1, 2 (except training/training records), 3, 5, 6, 17, and 18 were effectively implemented; QA Criteria 4, 7, and 15's effectiveness were indeterminate due to the lack of activity in these areas since the last audit; and QA Criteria 2 (training/training records only) and 16 were marginally effective because of the DCARs in these areas. The NRC staff agrees with these conclusions.

Should you have any questions, please contact Jack Spraul of my staff on (301) 504-2446.

Sincerely,

/s/

Joseph J. Holonich, Director
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety and
Safeguards

SUBJECT: Observation of the U. S. Department of Energy Civilian Radioactive Waste Management Systems (CRWMS) Management and Operating (M&O) Contractor Internal Audit of CRWMS M&O QA Program

1.0 Introduction

The Division of High-Level Waste Management (HLWM) On-Site Representative (OR) observed the internal QA audit (93-NSA-02) of the U. S. Department of Energy (DOE) Civilian Radioactive Waste Management System (CRWMS) Management and Operating Contractor (M&O) in Las Vegas, Nevada, during June 28 - July 2.

2.0 Purpose

The purpose of the audit was to evaluate the adequacy and effectiveness of the M&O Nevada Site QA Program through performance based reviews of Determination of Importance Evaluations (DIEs), Waste Isolation Evaluation, Implementing Line Procedures, Calculations/Drawings and Computer Software. In addition the following QA programmatic elements were audited: Organization, QA Program, Design Control, Plans/Procedures and Drawing, Document Control, Corrective Action and QA Record Control.

3.0 Audit Team

The audit team consisted of an audit team leader, two technical auditors, two QA auditors and one auditor in training.

The NRC observer concentrated his review on the auditing of the DIEs, the Waste Isolation Evaluations, the Calculations/Drawings, and the Implementing Line Procedures.

4.0 Audit Results

The auditors concluded that with the exception of minor deficiencies the M&O QA program was being adequately implemented in those areas audited. The two deficiencies pertained to the lack of referencing the DIE plan in the QA procedure for preparing DIEs, and the lack of control of technical inputs for use in the waste isolation impact evaluations.

5.0 NRC Conclusion

Based on the observations of this audit it is concluded that the audit process was marginally effective. Problems were experienced throughout the audit regarding difficulty the auditors of the design process had in scheduling and coordinating audit interviews with the technical staff of the M&O organization. Further there appears to be a lack of clear understanding and knowledge of deficiencies (open and closed) previously reported by either DOE and M&O. During the audit exit M&O management and the audit team leader acknowledged and agreed to take corrective measures to assure the audit process is more effective.

The results of this audit in conjunction with previous YMFO QA surveillances clearly points out the need for improved QA procedural controls and an implementation by the M&O contractor.

M&O Surveillance

OBSERVATION SURVEILLANCE REPORT NO. 93-S5

1.0 INTRODUCTION

From September 8-17, 1993, the U.S. Department of Energy Office of Civilian Radioactive Waste Management (OCRWM) conducted Quality Assurance (QA) Surveillance No. HQ-SR-93-07 of the Civilian Radioactive Waste Management System Management and Operating Contractor (M&O) QA program in Vienna, VA and Las Vegas, NV. The State of Nevada did not participate in this surveillance.

2.0 PURPOSE

The U.S. Nuclear Regulatory Commission staff observed and evaluated the OCRWM QA surveillance to gain confidence that OCRWM and the M&O are properly implementing the requirements of their QA programs by assessing the effectiveness of the OCRWM surveillance and determining the adequacy of the M&O QA program in the areas observed. The NRC staff's evaluation is based on direct observations of the surveillance process, discussions with the surveillance team and M&O personnel, and reviews of pertinent M&O records.

7.0 NRC CONCLUSIONS

The NRC staff has determined that the OCRWM surveillance of the M&O QA program with respect to flowdown of requirements, following procedures, and corrective actions for prior CARs was useful and effective. The surveillance team was familiar with the QA procedures in the areas being surveilled and knowledgeable of the work products being examined. The programmatic and technical specialists worked well together in determining whether document flowdown requirements were adequately implemented. Also, even though not required for this surveillance activity, a pre-surveillance meeting was held by the STL which further enhanced the quality of communications between the surveillance team and the M&O. Although M&O QA personnel were in attendance in the VA and NV entrance and daily caucus meetings, they did not participate to a great extent. This situation was brought to the attention of the STL and corrected.

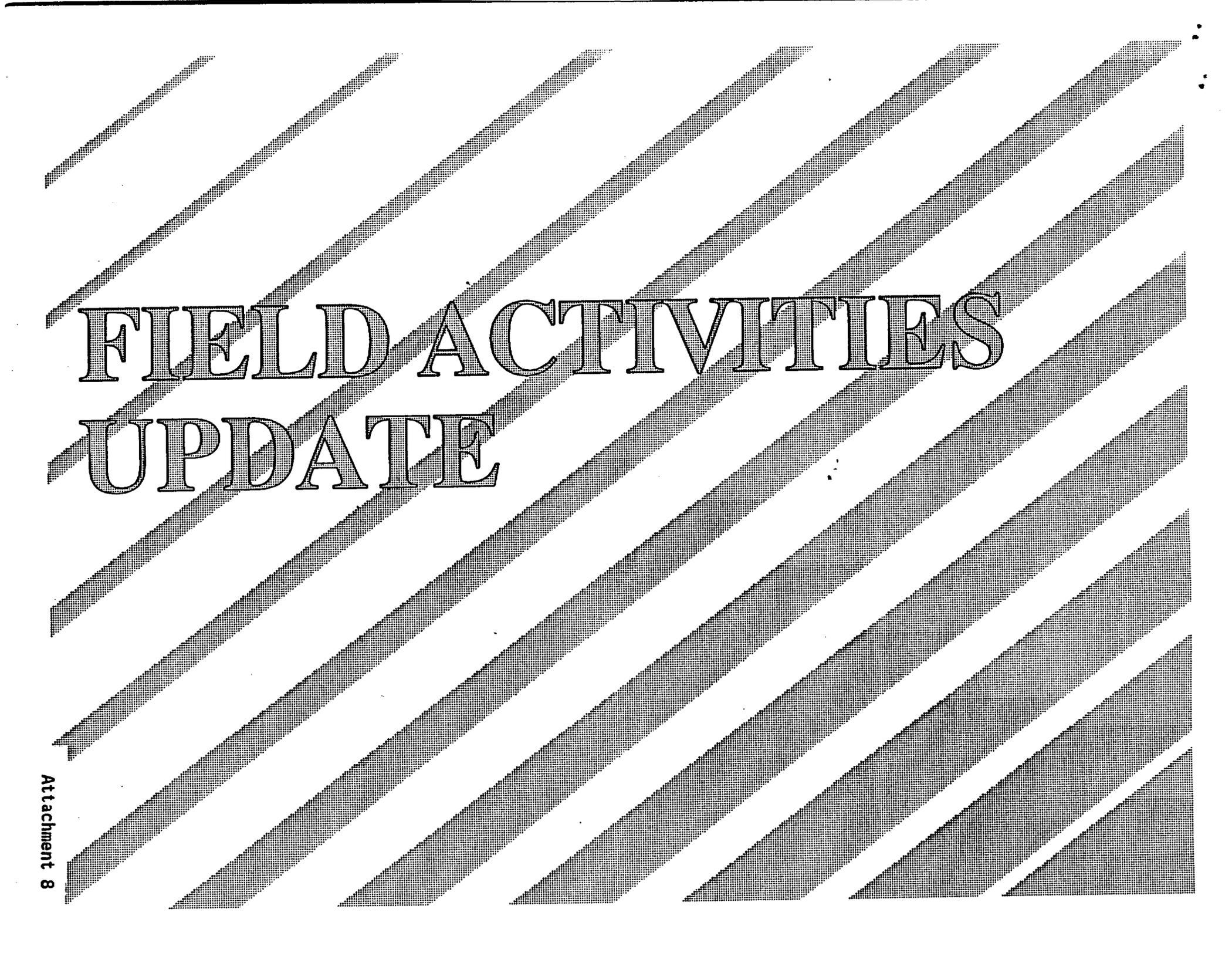
The NRC staff agrees with the OCRWM surveillance team's preliminary conclusion that the M&O development process for the preparation, review, and issuance of the requirements and the flowdown of requirements is effective and the associated documents are adequate in the areas surveilled except for the areas noted in the preliminary CARs.

**U. S. DEPARTMENT OF ENERGY
OFFICE OF QUALITY ASSURANCE
HEADQUARTERS QUALITY ASSURANCE DIVISION
STATUS OF CARS ISSUED TO DOE EM-343**

CAR No.	Date Issued	Resp Due	Resp Extens	Second Extens	Resp Rec'd	Resp Eval	Amend Resp	CA Compl	CA Verified	Current CAR Status
HQ-93-009	2/16/93	3/15/93	4/16/93	5/21/93	5/25/93	Reject	10/13/93 Accept	11/19/93		Corrective Action in-process
HQ-93-010	2/16/93	3/15/93	4/16/93	5/21/93	5/25/93	Reject	10/13/93 Accept	12/15/93		Corrective Action in-process
HQ-93-011	2/16/93	3/15/93	4/16/93	5/21/93	5/25/93	Reject	10/13/93 Accept	11/1/93		Corrective Action verification pending
HQ-93-012	2/16/93	3/15/93	4/16/93	5/21/93	5/25/93	Accept	N/A	11/9/93		Corrective Action verification pending
HQ-93-027	8/5/93	8/31/93	N/A	N/A	8/23/93	Pending	N/A	N/A		Response evaluation in-process
HQ-93-028	8/5/93	8/31/83	N/A	N/A	8/23/93	Pending	N/A	N/A		Response evaluation in-process

VERIFICATIONS:

HQ-93-02 1/11/93 - 1/15/93
 HQ-SR-93-01 6/22/93 - 6/24/93
 93EA-SR-AU-01 5/3/93 - 5/5/93 and
 5/24/93 - 5/28/93 (Observation of EM)

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FIELD ACTIVITIES UPDATE

FIELD ACTIVITIES UPDATE

Completed Boreholes to Date

- ▶ Total footage drilled to date (completed holes) - 10,606.6 feet
- ▶ Neutron - 24 - 3077 feet (N11, N15, N16, N17, N27, N31, N32, N33, N34, N35, N36, N37, N38, N39, N53, N54, N55, N57, N58, N59, N61, N62, N63 and N64)
- ▶ Unsaturated Zone (UZ) - 16 - 1686.2 feet
- ▶ JF - 3 - 1298 feet
- ▶ North Ramp Geologic (NRG) - 8 holes - 4545.4 feet (NRG - 1, - 2, - 2a, - 2b, - 3, - 4, - 5 and - 6)

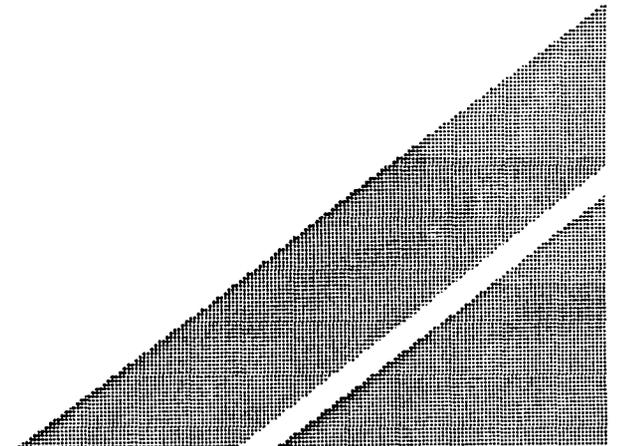


FIELD ACTIVITIES UPDATE

(continued)

In-Progress Boreholes

- ▶ **UZ-14: Cored to 1,422 feet as of November 5, 1993
(planned total depth = 2,000 feet)**
- ▶ **USW NRG-7/7A: Cored to 301 feet as of November 5, 1993
(planned total depth is approximately 1,445 feet)**



FIELD ACTIVITIES UPDATE

(continued)

Other Borehole Activities

Geophysical and Video Logging

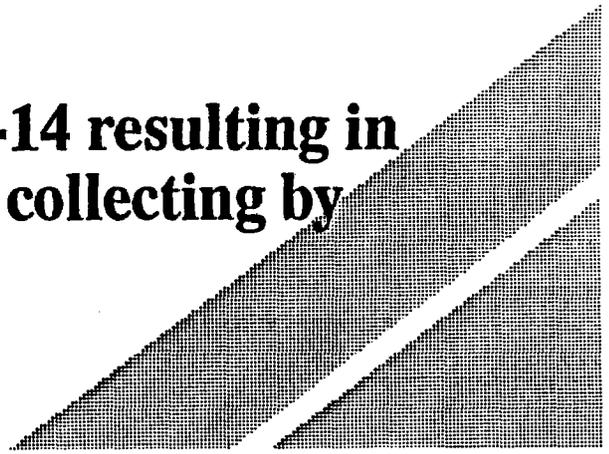
Three boreholes have been logged in accordance with YMPO procedures:

**NRG-6
UZ-16
WT-2**

**NRG-2
NRG-2A
NRG-2B**

**NRG-3
NRG-4
NRG-5**

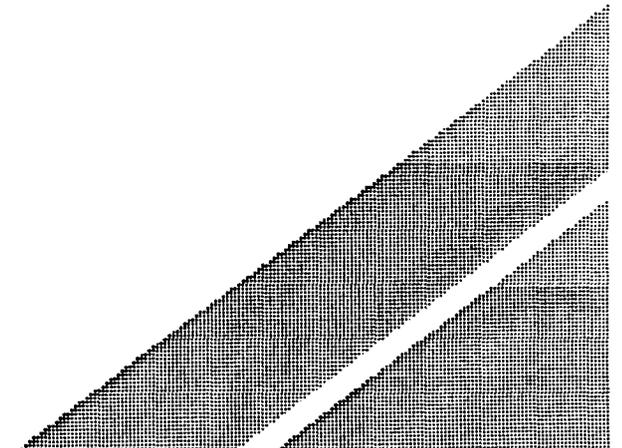
Perched Water was encountered at UZ-14 resulting in suspension of drilling to allow for data collecting by USGS scientists.



FIELD ACTIVITIES UPDATE (continued)

Exploratory Studies Facility (ESF) Update

- ▶ **Starter Tunnel completed (first 200 feet)**
- ▶ **Geologic mapping of starter tunnel complete**
- ▶ **First alcove driven 50 feet into the mountain**



FIELD ACTIVITIES UPDATE (continued)

Surveillances of Field Activities

Twenty-seven surveillances of field activities of Project Participants were conducted during FY'93 by the YMQAD staff.

Participant	Number of surveillances
LANL	1
M&O	1
REEC _o	5
RSN	4
SNL	1
USBR	2
USGS	6
YMPO	7

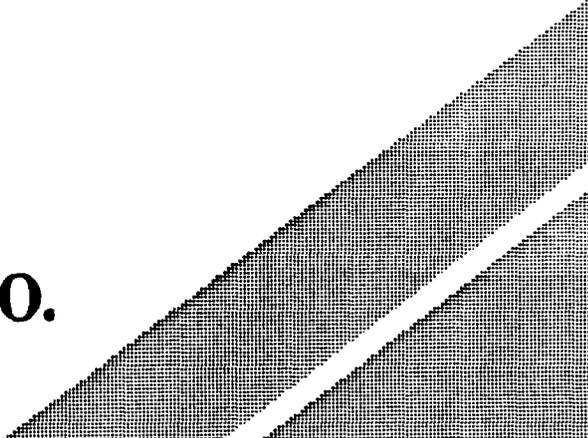
FIELD ACTIVITIES UPDATE (continued)

Q.A. Activities of Field Activities by Participants for FY'93

Completed Audits/Surveillances

M&O	124
LANL	0
LLNL	0
REEC ₀	2
RSN	1
SNL	2
SAIC	7
USGS	1

Note: Inspections included for M&O.

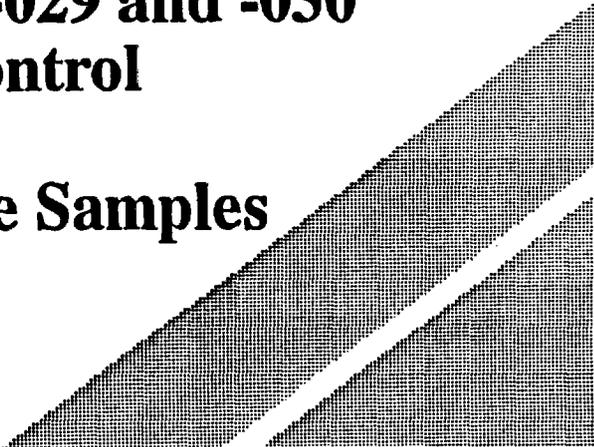


FIELD ACTIVITIES UPDATE

(continued)

Surveillances Completed for FY'93:

93-002	USGS	Tracer Gas Injection Program CARs YM-93-025, -026 and -027
93-003	YMPO	Drill Hole Activities
93-005	USBR	Geophysical Logging Activities, NRG-1
93-006	RSN	Materials Test Laboratory Activities
93-008	USGS	Geologic Mapping
93-009	YMPO	Sample Handling
93-012	RSN	Field Verification Activities CARs YM-93-028, -029 and -030
93-013	YMPO	Field Document Control
93-014	USGS/USBR	Geologic Mapping
93-015	YMPO	Control of Borehole Samples

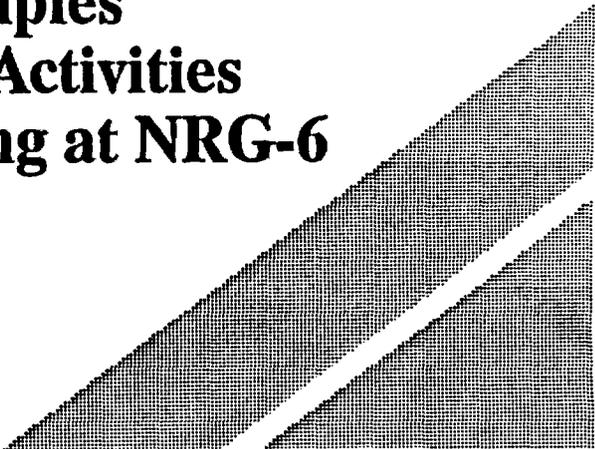


FIELD ACTIVITIES UPDATE

(continued)

Surveillances Completed for FY'93 (continued):

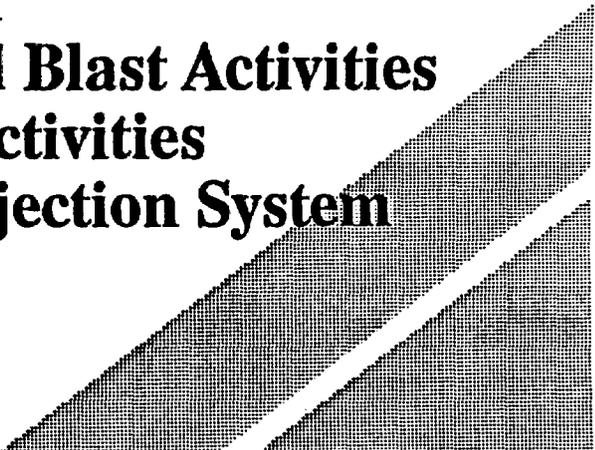
93-019	RSN	Field Surveying Activities
93-021	REEC_o	First Line Inspection Activities
93-022	YMPO	FCR Document Control Process
93-024	USGS	Sub-Surface Moisture Content Measurement
93-026	USGS	Calibration of Measuring and Test Equipment CAR YM-93-054
93-027	YMPO/SAIC	Traceability of Samples
93-029	REEC_o	Drilling and Blast Activities
93-030	YMPO/SAIC	Geophysical Logging at NRG-6 CAR YM-93-071



FIELD ACTIVITIES UPDATE (continued)

Surveillances Completed for FY'93 (continued):

93-035	YMPO/SAIC	Geophysical Logging at UZ-16 CAR YM-93-087
93-036	RSN/REEC _o	Control of Work Activities
93-040	USGS	Evaluation of Procedures for Perched Water
93-041	RSN	Processing of Shotcrete Test Samples
93-043	SNL	Special Sampling Activities at NRG-2B CAR YM-93-090
93-044	M&O	Inspection Program
93-045	REEC _o	Follow-Up Drill and Blast Activities
93-046	LANL	Sample Handling Activities
93-047	REEC _o	Chemical Tracer Injection System

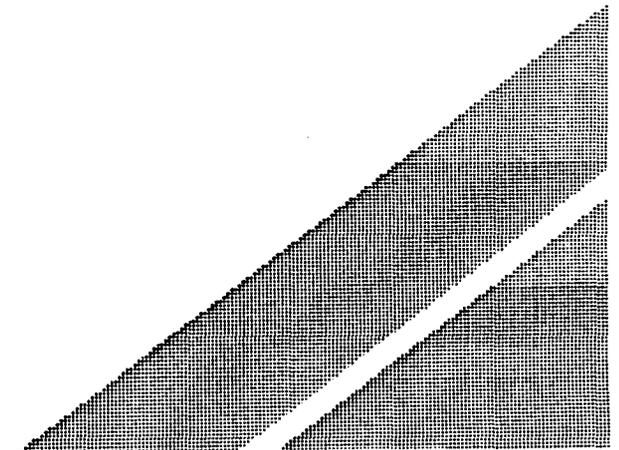


FIELD ACTIVITIES UPDATE

(continued)

Reviews Completed - FY'93 Totals

- ▶ Job Packages Reviewed - 16**
- ▶ Test Planning Packages Reviewed - 11**



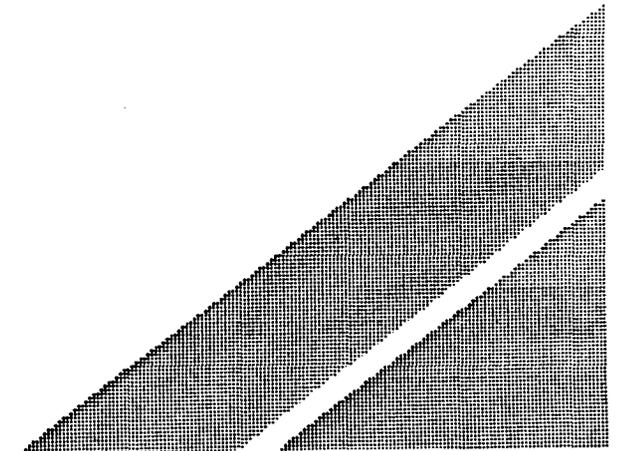
FIELD ACTIVITIES UPDATE

(continued)

Corrective Action Requests Issued and Closed Related to Field and Test Activities During FY'93

▶CARs issued - 24

▶CARs closed - 14



FIELD ACTIVITIES UPDATE (continued)

Q.A. Activities of Field Activities by Participants for FY'94

	Completed Audits/Surveillances	Planned Audits/Surveillances
M&O	10	128
LANL	0	0
LLNL	0	0
REEC _o	2	7
RSN	1	7
SNL	1	1
SAIC	2	8
USGS	1	23

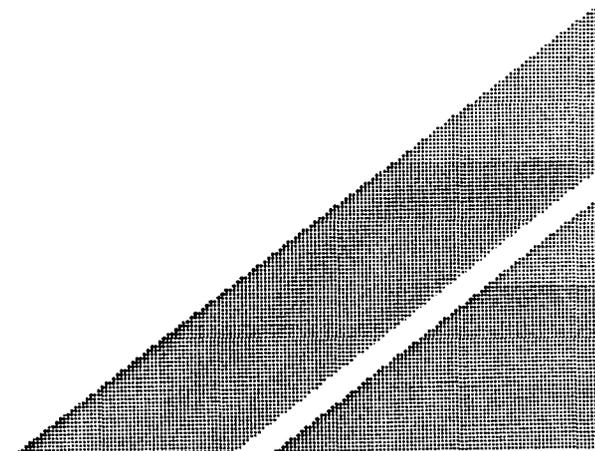
Note: Inspections included for M&O.

FIELD ACTIVITIES UPDATE

(continued)

Surveillances Completed FY'94:

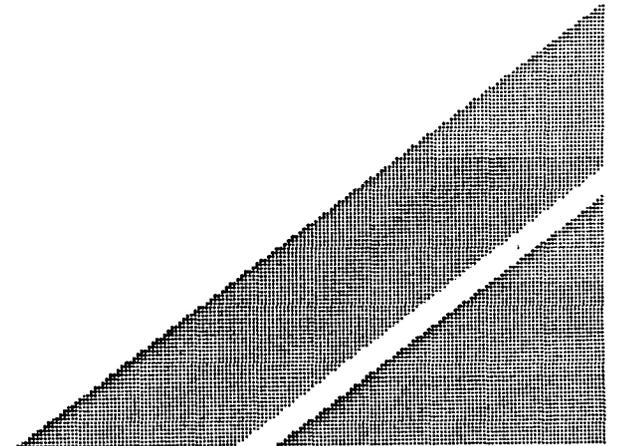
94-002	RSN	Verification of Corrective Action for Closure of CAR YM-93-032
94-003	REEC_o	Control of Water Usage



FIELD ACTIVITIES UPDATE (continued)

Reviews Completed - FY'94 Totals

- ▶ Job Packages Reviewed - 1**
- ▶ Test Planning Packages Reviewed - 1**



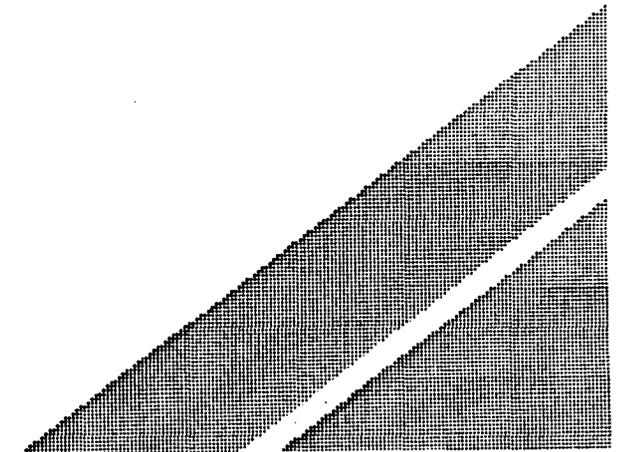
FIELD ACTIVITIES UPDATE

(continued)

Corrective Action Requests Issued and Closed Related to Field and Test Activities During FY'94

▶ CARs issued - 0

▶ CARs closed - 0



STATUS OF GRADED QA/Q-LIST

ACTIONS COMPLETED:

- ✓ Q-List revision approved 11/05/93
- ✓ Quality Activities List (QAL) deleted 11/04/93
- ✓ AP 5.21Q requires classification during Job Package preparation
- ✓ M&O QAP 2-3 revision 5 "Classification of Items" submitted to DOE for review and acceptance

UPCOMING ACTIONS:

- ✓ Comment Resolution on M&O QAP 2-3 Rev. 5
- ✓ Cancellation of AP 6.17Q

REEC_o SURVEY

CAR #YM-93-058

Condition:

Identification of quality affecting survey activities performed by REEC_o using procedures not governed by the REEC_o YMP QA Program.

Cause:

The intent of the REEC_o QA Program Plan was misinterpreted and surveying line and grade of the ESF Starter Tunnel was not performed in accordance with the REEC_o YMP QA Program.

Corrective Actions:

- Starter tunnel check survey was performed by RSN to confirm that the line, grade and profile at line B are correct.
- Technical Control Procedure has been issued for control of starter tunnel surveying.
- REEC_o matrixed surveying personnel have been qualified in accordance with YMP Program requirements.

Investigative Actions:

No other quality related work is being performed or is planned to be performed by REEC_o matrixed personnel/organization

SOFTWARE QA OVERVIEW

AUDITS:

AUDIT #	AUDITED ORG.	DATES AUDITED	AUDIT SCOPE	CARS GENERATED	AUDIT RESULTS
93-01	USGS	10/19-23/92	SQAP/Impl. Procedures	<u>YMP-93-014</u> Requirements not adequately defined	Effectively Implemented
93-02	LANL	11/2-6/92	SQAP/Impl. Procedures	<u>YMP-93-018</u> Procedural noncompliance <u>YMP-93-019</u> Procedural noncompliance	Effectively Implemented
93-05	T&MSS	2/1-5/93	Implementing Procedures	None	Effectively Implemented
93-13	RSN	7/12-16/93	Implementing Procedures	None	Effectively Implemented
93-14	LLNL	7/19-23/93	SQAP/Impl. Procedures	None	No Implementation
93-17	SNL	9/13-17/93	Implementing Procedures	None	Effectively Implemented

SURVEILLANCE:

Surveill. #	Surveilled Org.	Dates Surveilled	Surveillance Scope	CARS Generated	Surveillance Results
93-039	M&O	8/23-25/93	Implementing Procedures	<u>YM-93-089</u> Implementing Procedures did not adequately reflect SQAP requirements.	Satisfactory Implementation of Procedure

FACILITY SURVEY:

Facility Survey	Org.	Dates	Survey Scope	CARS Generated	Survey Results
N/A	PNL	12/8-11/93	Assess PNL QA Program for Global Climate Modeling	<u>YM-93-024</u> Failure to resolve open conditions	Program Acceptable with Exception of CAR Condition