

YUCCA MOUNTAIN PROJECT OFFICE

QUALITY ASSURANCE AUDIT PLAN

AUDIT 90-03

JUNE 25 THROUGH JULY 3, 1990

1.0 PURPOSE AND SCOPE

The purpose of this audit is to evaluate the implementation of the United States Geological Survey (USGS) Quality Assurance (QA) program as it applies to the Yucca Mountain Project Office (Project Office) QA program.

The scope of the audit will be to verify adequate and effective implementation of the USGS QA Program implementing procedures. In addition, implementation of corrective action(s) as provided in the response(s) to open Project Office Standard Deficiency Reports and Observations will be evaluated and, if found satisfactory, will be closed.

2.0 ORGANIZATION TO BE AUDITED

USGS, Denver, Colorado
USGS, Nevada Test Site (NTS), Mercury, Nevada

3.0 AUDIT SCHEDULE

Pre-audit Team/Observer Meeting	8:30 a.m. June 25, 1990 Denver, Colorado
Pre-audit Conference	10:00 a.m. June 25, 1990 Denver, Colorado
Audit Activities	11:00 a.m. - 4:00 p.m. June 25, 1990 Denver, Colorado
	8:00 a.m. - 4:00 p.m. June 26-28, 1990 Denver, Colorado

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ENCLOSURE

Audit Activities	8:00 a.m. - 11:00 a.m. June 29, 1990 Denver, Colorado
Post-audit Conference	2:00 p.m. June 29, 1990 Denver, Colorado
Pre-audit Meeting	8:00 a.m. July 2, 1990 NTS, Mercury, Nevada
Audit Activities	8:30 a.m. - 3:30 p.m. July 2, 1990 NTS, Mercury, Nevada
	8:00 a.m. - 11:30 a.m. July 3, 1990 NTS, Mercury, Nevada
Post-Audit Conference	3:00 p.m. July 3, 1990 Las Vegas, Nevada

4.0 REQUIREMENTS TO BE AUDITED AND APPLICABLE REFERENCES

USGS Quality Management Procedures and applicable Yucca Mountain Project Administrative Procedures-Quality procedures

Applicable USGS Technical Implementing Procedures

The conduct of the audit will be accomplished in accordance with the DOE Project Office documents listed below:

- o QMP-18-01, Revision 3, "Audit System for the Waste Management Project Office"
- o QMP-16-03, Revision 1, "Standard Deficiency Reporting System"
- o QA Task Organization
- o Audit Observer Inquiry
- o Policy for Participation of State, Tribal, and U.S. Nuclear Regulatory Commission (NRC) Representatives as Observers on U.S. Department of Energy (DOE) Audits, dated July 14, 1987
- o High Level Waste (HLW) Division Procedure for Conducting Observations DOE Audits of HLW Repository (HLWR) Program QA Audits

5.0 ACTIVITIES TO BE AUDITED

The activities to be audited include the following:

Programmatic Elements

The following elements will be reviewed and evaluated:

<u>CRITERIA</u>	<u>SUBJECT</u>
1.0	Organization
2.0	Quality Assurance Program
3.0	Scientific Investigation and Design Control
4.0	Procurement
5.0	Instructions, Procedures, Plans, and Drawings
6.0	Document Control
7.0	Control of Purchased Items and Service
8.0	Identification and Control of Items, Samples, and Data
12.0	Control of Measuring and Test Equipment
13.0	Handling, Storage, and Shipping
15.0	Control of Nonconforming Items
16.0	Corrective Action
17.0	Quality Assurance Records
18.0	Audits

This audit will not address criteria 9, 10, 11, and 14.

Technical Activities

Technical specialists will review and evaluate the following technical activities:

<u>SCP NUMBER</u>	<u>TITLE</u>
8.3.1.5.2.1	Characterization of Quaternary Regional Hydrology
Sub-activity (.3)	Evaluation of Past Discharge Areas
Sub-activity (.4)	Analog Recharge Studies
Sub-activity (.5)	Calcite and Opaline Silica Vein Deposits
8.3.1.2.2.7	Hydrochemical Characterization of the Unsaturated Zone
Sub-activity (.1)	Gaseous-Phase Chemical Investigations
Sub-activity (.2)	Aqueous-Phase Chemical Investigations

- 8.3.1.4.2.2 Characterization of Structural Features Within the Site Area
 - Sub-activity (.1) Geologic Mapping of Zonal Features in the Paintbrush Tuff
 - Sub-activity (.2) Surface-Fracture Network Studies
- 8.3.1.2.1.3 Characterization of the Regional Ground-Water Flow System
 - Sub-activity (.2) Regional Potentialmetric Level Distribution and Hydrologic Framework Studies
 - Sub-activity (.3) Fortymile Wash Recharged Study

6.0 AUDIT TEAM MEMBERS

Richard Maudlin--MAC Technical Services Company, (MACTEC), Las Vegas, Nevada,
 Audit Team Leader

D. Brown--CER Corporation, Arlington, Virginia, Auditor-In-Training

James Clark--Science Applications International Corporation (SAIC),
 Las Vegas, Nevada, Auditor

Neil Cox--SAIC, Las Vegas, Nevada, Auditor

Robert Constable--Yucca Mountain Project, Las Vegas, Nevada, Auditor

Edward Cocoros--MACTEC, Las Vegas, Nevada, Auditor

Kenneth Gilkerson--SAIC, Las Vegas, Nevada, Auditor-In-Training

Donald Harris--Harza, Las Vegas, Nevada, Auditor-In-Training

Kenneth McFall--SAIC, Las Vegas, Nevada, Auditor

Mark Myer--CER Corporation, Arlington, Virginia, Auditor-In-Training

Charles Warren--MACTEC, Las Vegas, Nevada, Auditor

Richard Weeks--SAIC, Las Vegas, Nevada, Auditor

Thomas Higgins--SAIC, Las Vegas, Nevada, Lead Technical Specialist

Bruce Hurley--SAIC, Las Vegas, Nevada, Technical Specialist

Keith Kersch--SAIC, Las Vegas, Nevada, Technical Specialist

Martha Mitchell--SAIC, Las Vegas, Nevada, Technical Specialist

Claudia Newbury--Yucca Mountain Project, Las Vegas, Nevada,
 Technical Specialist

7.0 AUDIT CHECKLISTS, ANNEXES, AND ATTACHMENTS

Annex A - DOE Procedure on Protocol dated July 1987

Annex B - NRC HLW Division Procedure for Conducting Observation Audits of
 DOE High Level Waste Repository Program QA Audits

Annex C - HQ Observation of YMP Quality Assurance Audits

Attachment 1 - YMP Audit Observer Inquiry

Prepared by: Richard L. Maudlin Date: 05-04-90
Richard L. Maudlin, Audit Team Leader
Project Office Quality Assurance Staff

Approved by: James Blaylock Date: 6/5/90
James Blaylock, Branch Chief
Quality Assurance
Yucca Mountain Project Office

Approved by: James Blaylock for Date: 6/5/90
Donald G. Horton, Director
Quality Assurance
Yucca Mountain Project Office