



## Department of Energy

Nevada Operations Office  
P. O. Box 98518  
Las Vegas, NV 89193-8518

WBS 1.2.9.3  
QA

MAR 06 1990

Richard J. Herbst  
Technical Project Officer for Yucca Mountain Project  
Los Alamos National Laboratory  
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YUCCA MOUNTAIN PROJECT OFFICE (PROJECT OFFICE) QUALITY ASSURANCE (QA) AUDIT  
90-1 OF LOS ALAMOS NATIONAL LABORATORY (LOS ALAMOS) SUPPORT OF THE YUCCA  
MOUNTAIN PROJECT

Please be advised that a team from the Project Office will conduct a QA audit of the Los Alamos QA Program Plan and quality-related activities March 26 through March 30, 1990. Current plans call for the audit team to hold an entrance meeting on March 26, 1990, beginning at 10:30 a.m. Please arrange for the appropriate personnel at your Los Alamos facility to attend this pre-audit conference. The post-audit conference is tentatively scheduled for 2 p.m. on March 30, 1990.

The audit will focus on the following areas:

### QA Program Elements

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

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Observers from the State of Nevada, U.S. Nuclear Regulatory Commission, U.S. Department of Energy/Headquarters, or other interested parties may also accompany the audit team.

If you have any questions, please contact James Blaylock of my staff at (702) 794-7913 or FTS 544-7913, or Stephen R. Dana of SAIC at (702) 794-7176 or FTS 544-7176.




Donald G. Horton, Director  
Quality Assurance Division  
Yucca Mountain Project Office

YMP:JB-2260

Enclosure:  
Audit Plan 90-1

cc w/encl:

Ralph Stein, HQ (RW-30) FORS  
D. E. Shelor, HQ (RW-3) FORS  
James Tillman, LAO  
H. P. Nunes, LANL, Los Alamos, NV  
P. R. Guthals, LANL, Los Alamos, NV  
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S. L. Crawford, SAIC, Las Vegas, NV, 517/T-06  
S. R. Dana, SAIC, Las Vegas, NV, 517/T-06  
R. J. Hutton, SAIC, Las Vegas, NV, 517/T-24  
M. J. Mitchell, SAIC, Las Vegas, NV, 517/T-06  
C. H. Prater, SAIC, Las Vegas, NV, 517/T-06  
T. W. Noland, W, Las Vegas, NV, 517/T-06

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Technical Areas

Technical specialists will review and evaluate the following technical activities:

<u>WBS NUMBER</u>	<u>SCP REFERENCE</u>	<u>TITLE</u>
1.2.3.2.5	8.3.1.8	Postclosure Tectonics
1.2.3.2.1.1.1	8.3.1.3.2.1	Mineralogy, Petrology and Rock Chemistry of Transport Pathways
1.2.3.4.1.3	8.3.1.3.5	Radionuclide Retardation by Precipitation Processes
1.2.3.4.1.5.2	8.3.1.3.7.2	Demonstration of Applicability of Laboratory Data

In addition, the technical specialists will evaluate the above activities to determine adequacy in the following areas:

1. Technical qualifications of scientific investigation personnel.
2. Understanding of procedural requirements as they pertain to scientific investigation activities.
3. Adequacy of technical procedures.
4. Development of study plans, work supporting the Site Characterization Plan, and any related work products.

If the audit team identifies a need to verify additional programmatic or technical areas during the audit, they will be added to the audit checklist(s) and verified accordingly.

The audit team will consist of:

Stephen R. Dana - Science Applications International Corporation (SAIC),  
Las Vegas, Nevada, Audit Team Leader  
Sidney L. Crawford - SAIC, Las Vegas, Nevada, Auditor  
Amelia I. Arceo - SAIC, Las Vegas, Nevada, Auditor  
Anthony E. Cocoros - MAC Technical Services Company (MACTEC),  
Las Vegas, Nevada, Auditor  
Richard L. Maudlin - MACTEC, Las Vegas, Nevada, Auditor  
Mario R. Diaz - Project Office, Las Vegas, Nevada, Auditor  
Terry W. Noland - Westinghouse, Las Vegas, Nevada, Auditor-in-Training  
Martha J. Mitchell - SAIC, Las Vegas, Nevada, Lead Technical Specialist

## YUCCA MOUNTAIN PROJECT OFFICE (PROJECT OFFICE)

## QUALITY ASSURANCE (QA) AUDIT PLAN

AUDIT 90-1

MARCH 26 THROUGH MARCH 30, 1990

1.0 SCOPE

The scope of this audit is to evaluate the Los Alamos Quality Assurance Program to determine whether it meets the requirements and commitments imposed by the Project Office. This will be done by verifying implementation and effectiveness of the systems in place, as well as verifying compliance with requirements.

2.0 ORGANIZATION TO BE AUDITED

Los Alamos National Laboratory (Los Alamos), Los Alamos, New Mexico

3.0 AUDIT SCHEDULE

Pre-Audit Team Meeting	10:00 a.m., March 22, 1990, Las Vegas, NV
Team/Observers Badging	8:00 a.m., March 26, 1990 Los Alamos, NM
Pre-Audit Team/Observers Meeting	9:00 a.m., March 26, 1990, Los Alamos, NM
Pre-Audit Conference	10:30 a.m., March 26, 1990, Los Alamos, NM
Los Alamos Audit Activities	12:00 p.m. to 4:00 p.m., March 26, 1990
Los Alamos Audit Activities	8:30 a.m. to 4:00 p.m., March 27 - 29, 1990
Los Alamos Audit Activities	8:30 a.m. to 11:30 p.m. March 30, 1990
Post-Audit Conference	2:00 p.m., March 30, 1990, Los Alamos, NM

#### 4.0 REQUIREMENTS TO BE AUDITED AND APPLICABLE REFERENCES

The requirements to be audited are contained in the programmatic and technical checklists. These checklists were developed from the following documents:

- o NNWSI/88-9, Revision 3.
- o Los Alamos QAPP and Implementing Procedures.
- o NNWSI Administrative Procedures (APQs)

The conduct of the audit will be guided by the documents listed below:

- o YMP/QMP-18-01, "Audit System for the Yucca Mountain Project Office," Revision 3.
- o YMP/QMP-16-3, "Standard Deficiency Reporting System," Revision 1.
- o YMP Quality Assurance Audit Task Organization.
- o YMP Audit Observer Inquiry.
- o Policy for Participation of State, Tribal and NRC Representatives as Observers on Department of Energy (DOE) Audits, dtd. July 14, 1987.
- o Headquarters Observation of YMP Quality Assurance.

#### 5.0 ACTIVITIES TO BE AUDITED

The activities to be audited during this audit include:

##### Programmatic Elements:

- 1.0 Organization
- 2.0 Quality Assurance Program
- 3.0 Scientific Investigation and Design Control
- 4.0 Procurement Document Control
- 5.0 Instructions, Procedures, Plans, and Drawings
- 6.0 Document Control
- 7.0 Control of Purchased Items, Samples, and Data
- 8.0 Identification and Control of Items, Samples, and Data
- 12.0 Control of Measuring and Test Equipment
- 13.0 Handling, Shipping, and Storage

5.0 ACTIVITIES TO BE AUDITED (CONTINUED)

- 15.0 Control of Nonconforming Items
- 16.0 Corrective Action
- 17.0 Quality Assurance Records
- 18.0 Audits

Technical Areas

Technical Specialists will review and evaluate the following technical activities:

<u>WBS NUMBER</u>	<u>SCP REFERENCE</u>	<u>TITLE</u>
1.2.3.2.5	8.3.1.8	Postclosure Tectonics
1.2.3.2.1.1.1	8.3.1.3.2.1	Mineralogy, Petrology and Rock Chemistry of Transport Pathways
1.2.3.4.1.3	8.3.1.3.5	Radionuclide Retardation by Precipitation Processes
1.2.3.4.1.5.2	8.3.1.3.7.2	Demonstration of Applicability of Laboratory Data

In addition, the Technical Specialists will evaluate the above activities to determine adequacy in the following areas:

- o Technical qualification of scientific investigation personnel.
- o Understanding of procedural requirements as they pertain to scientific investigation activities.
- o Adequacy of technical procedures.
- o Development of Study Plans, work supporting the Site Characterization Plan, and any related work products.

If the audit team identifies a need to verify additional programmatic or technical areas during the audit, they will be added to the audit checklist(s) and verified accordingly.

6.0 AUDIT TEAM MEMBERS

Stephen R. Dana - SAIC, Las Vegas, Nevada, Audit Team Leader  
 Sidney L. Crawford - SAIC, Las Vegas, Nevada, Auditor

6.0 AUDIT TEAM MEMBERS (CONTINUED)

Amelia I. Arceo - SAIC, Las Vegas, Nevada, Auditor  
Ed Cocoros - MACTEC, Las Vegas, Nevada, Auditor  
Richard L. Maudlin - MACTEC, Las Vegas, Nevada, Auditor  
Mario Diaz - YMP, Las Vegas, Nevada, Auditor  
Terry W. Noland - Westinghouse, Las Vegas, Nevada, Auditor-in-Training  
Martha J. Mitchell - SAIC, Las Vegas, Nevada, Lead Technical Specialist

7.0 AUDIT CHECKLISTS, ANNEXES, AND ATTACHMENTS

90-1-1 Programmatic checklist.

90-1-2 Technical checklist.

Annex A - DOE Procedure on Observer Protocol (July 1987).

Annex B - NRC/QA Procedure For Observing DOE/OGR/HLWR Program Audits.

Annex C - DOE/HQ/OGR Observation of YMP Quality Assurance Audits (Drafts).

Attachment 1 - YMP Audit Observer Inquiry.

Attachment 3 - Objective for the Technical Phase of the QA Audit.

Prepared By: Stephen R. Dana  
Stephen R. Dana, Audit Team Leader

Date: 3/5/90

Approved By: James Blaylock  
James Blaylock, Branch Chief  
Quality Assurance Division  
Yucca Mountain Project Office

Date: 3/5/90

Approved By: James Blaylock for  
Donald G. Horton, Director  
Quality Assurance Division  
Yucca Mountain Project Office

Date: 3/5/90