

**OCRWM AUDIT  
YMP-91-06**

**SCIENCE  
APPLICATIONS  
INTERNATIONAL  
CORPORATION**



**LAS VEGAS, NEVADA  
JUNE 17, 1991  
THRU  
JUNE 21, 1991**

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*Received via letter dtd 5/22/91*

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OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

QUALITY ASSURANCE AUDIT PLAN

FOR

AUDIT YMP 91-06

OF

SCIENCE APPLICATION INTERNATIONAL CORPORATION

LAS VEGAS, NEVADA

JUNE 17 - 21, 1991

Prepared By: *Richard L. Maudlin*  
Richard L. Maudlin  
Audit Team Leader

Date: 05-20-91

Approved By: *Donald G. Horton*  
Donald G. Horton, Director  
Office of Quality Assurance

Date: 5/20/91

*100.88*  
ENCLOSURE

## 1.0 PURPOSE AND SCOPE

The purpose of this audit is to evaluate the Science Application International Corporation (SAIC) Quality Assurance (QA) program in meeting the requirements and commitments imposed by the Office of Civilian Radioactive Waste Management (OCRWM).

The scope of the audit will evaluate the adequacy and effectiveness of SAIC's QA program implementation. In addition, implementation of corrective action(s) as provided in the response(s) to open Project Office Corrective Action Requests (CAR), will be evaluated and, if found satisfactory, will be closed.

## 2.0 AUDIT SCHEDULE

Pre-audit Team/Observer Meeting	8:15 a.m., June 17, 1991 Las Vegas, Nevada
Pre-audit Conference	9:00 a.m., June 17, 1991 Las Vegas, Nevada
Audit Activities	10:00 a.m. - 4:00 p.m. June 17, 1991, Las Vegas, Nevada
	8:00 a.m. - 4:00 p.m. June 18-20, 1991, Las Vegas, Nevada
	8:00 a.m. - 3:30 p.m. June 19-20, 1991, Nevada Test Site, Mercury, Nevada
Post-audit Conference	3:00 p.m., June 21, 1991, Las Vegas, Nevada

## 3.0 REQUIREMENTS TO BE AUDITED AND APPLICABLE REFERENCES

Technical and Management Support Services (T&MSS) Quality Assurance Program Description (QAPD), Revision 3.

T&MSS Standard Practices (SPs), Operating Procedures (OPs), and Work Instructions (WIs) as applicable to quality related activities associated with the Yucca Mountain Site Characterization Project Office (YMFO).

Applicable YMP Administrative Procedure (AP).

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

QAAP-18.2, Revision 3, Audit Program

QAAP-16.1, Revision 3, Corrective Action Requests

QA Task Organization

Audit Observer Inquiry

Policy for Participation of State, Tribal, and U.S. NRC Representative as Observers and DOE Audits, dated July 14, 1987

High Level Waste (HLW) Division Procedure for Conducting Observation Audits of HLW Repository Program QA Audits

#### 4.0 ACTIVITIES TO BE AUDITED

##### Programmatic Elements

- 1 Organization
- 2 Quality Assurance Program
- 3 Design Control
- 4 Procurement
- 5 Instructions, Procedures, Plans, and Drawings
- 6 Document Control
- 7 Control of Purchased Items and Services
- 8 Identification and Control of Items, Samples and Data
- 10 Inspection
- 12 Control of Measuring and Test Equipment
- 13 Handling, Storage, and Shipping
- 14 Inspection, Test and Operating Status
- 15 Control of Nonconforming Items
- 16 Corrective Action
- 17 Quality Assurance Records
- 18 Audits
- 19 Software Quality Assurance
- 20 Scientific Investigation Control

This audit will not address Programmatic Elements 9, and 11

### Technical Activities

Technical Specialists will review and evaluate the technical activities related to the following:

Meteorological Monitoring Plan, Revision 1, June 5, 1989  
WBS 1.2.5.4.2 Meteorological

Radiological Monitoring Plan, Revision 1, December 1990  
WBS 1.2.5.4.5 Radiological

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

1. Technical Qualifications of scientific 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.

### 5.0 AUDIT TEAM MEMBERS

The audit team will consist of:

Richard Maudlin	- MAC Technical Services Company (MACTEC), Las Vegas, Nevada, Audit Team Leader
Charles Warren	- MACTEC, Las Vegas, Nevada, Auditor
Edward Cocoros	- MACTEC, Las Vegas, Nevada, Auditor
Wesley Williams	- MACTEC, Las Vegas, Nevada, Auditor
James Blaylock	- U.S. Department of Energy, Las Vegas, Nevada, Auditor
Mario Diaz	- U.S. Department of Energy, Las Vegas, Nevada, Auditor
Robert Constable	- U.S. Department of Energy, Las Vegas, Nevada, Auditor
Catherine Hampton	- U.S. Department of Energy, Las Vegas, Nevada, Auditor
Richard Crawley	- U.S. Department of Energy, Las Vegas, Nevada Lead Technical Specialist
Robert Cameron	- MACTEC, Las Vegas, Nevada, Technical Specialist
Dale Ambos	- USGS, Nevada Test Site, Mercury, Nevada, Technical Specialist

6.0 Audit CHECKLISTS, ANNEXES, AND ATTACHMENTS

YMP-91-06-01 QA Programmatic Checklist  
YMP-91-06-02 Technical Checklist  
Attachment 1 - YMP QA Task Organization  
Attachment 2 - YMP Audit Observer Inquiry

**Attachment 1**

**YMP QUALITY ASSURANCE AUDIT TASK ORGANIZATION**

**YMP  
PROJECT MANAGER**

**YMP  
PROJECT QUALITY MANAGER**

**AUDIT MANAGER**

**AUDIT TEAM (1)  
LEADER**

**LEAD TECHNICAL (2)  
SPECIALIST**

**LEAD AUDITOR (3)**

**TECHNICAL (4)  
SPECIALIST**

**AUDITORS (5)**

- (1)
  - o Responsible for the overall planning, conduct, and reporting of audits.
  - o Reports to manager of audits on administrative and operational matters.
  - o Is in charge of the audit team from activation to deactivation.
- (2)
  - o Responsible to the audit team leader for the planning, preparation, and conduct of the technical phase of the audit (see "objectives" attached).
  - o Directs the activities of assigned technical specialists in accordance with the guidelines set forth in audit plans and associated checklists.

- (3)
  - o Responsible to the audit team leader for the planning, preparation, and conduct of the QA programmatic phase of the audit.
  - o Directs the activities of assigned auditors in accordance with the audit plan and associated checklists.
  
- (4)
  - o Develops technical checklists by reviewing relevant documentation in accordance with "objectives for the technical phase of the QA audit."
  - o Performs the technical phase of the audit to approved checklists.
  - o Initiates observations and recommendations as required.
  
- (5)
  - o Develops programmatic checklists to NWSI program requirements.
  - o Performs the programmatic phase of the audit to approved checklists.
  - o Initiates observations, recommendations, and standard deficiency reports (SDRs) as required.
  - o Authenticates SDRs coauthored by technical specialists.

**PLAN FOR THE TECHNICAL PHASE OF THE QUALITY ASSURANCE AUDIT**

In order to provide a unified approach to the conduct of the technical phase of a Quality Assurance audit, the following questions are provided. The intention is to have these questions serve as the basis for the questions developed in the technical checklist (XX-2).

- o Were there sufficient technical procedures for the activity under review?
- o Were the procedures in place technically adequate for the intended application?
- o Did the prime or critical methodologies employed consider existing/accepted approaches and technologies?
- o Where untested methodologies were employed, was an adequate peer review performed?
- o Where questions arise in work product, was the background/credentials of those individuals engaged in the task/activity appropriate to the desired/intended outcome of the activity?
- o Was the level of effort/rigor employed commensurate with the stated objectives of the task/activity?
- o Where concerns exist as to the efficacy of an activity, is a further technical review indicated?
- o Where the interim analysis or interpretation of data supports reported results, is the analysis/interpretation appropriate for the proposed activity/task?
- o Were the design calculations, design methods, and design analyses employed for an activity appropriate to the maturity of the design?

**YUCCA MOUNTAIN PROJECT  
AUDIT OBSERVER INQUIRY**

**N-QA-084  
4/89**

Audit No. \_\_\_\_\_

Log No. \_\_\_\_\_

Name \_\_\_\_\_ Organization \_\_\_\_\_

YMP Requirement Reference \_\_\_\_\_

Question/Concern \_\_\_\_\_  
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Response \_\_\_\_\_  
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**Observer's Acknowledgement**

*Cleared for Submittal to YMP Participant*

\_\_\_\_\_  
**Lead Auditor / Lead Technical Specialist**

*Incorporated in YMP Audit Checklist...Ref*

\_\_\_\_\_  
**Audit Team Leader**