United States
Nuclear Waste Technical Review Board
Quality Assurance Panel

STATE OF NEVADA QA PROGRAM

Presentation by

Carl Johnson

Nevada Agency for Nuclear Projects

November 1, 1990
What is a Quality Assurance Program?

- A combination of management systems to consistently produce a product or service to meet an intended need.
Characteristics of an Effective QA Program

- Clear definition of project requirements (intended need)
- Organization structured to meet project requirements
- Clear definition of activities to carry out project objectives
- Complete plans and schedules to accomplish project objectives
- Sufficient qualified resources to accomplish plans and schedules
- Early and complete training and indoctrination
- Management understanding and dedication to quality achievement
- Effective use of peer reviews and readiness reviews to optimize quality
- QA management responsible for ensuring that management systems are (a) adequate to accomplish project objectives, (2) understood by project personnel, and (3) implemented as designed
- Independent assessment of management system's effectiveness
- Management dedication to meeting overall project objectives as opposed to just meeting QA requirements
STATE OF NEVADA

QUALITY ASSURANCE PROGRAM

Objective

To ensure that all technical data and interpretations performed by the State and its contractors/subcontractors comply with established nuclear quality assurance requirements.
- 1985 9th Circuit Court of Appeals decision that State of Nevada has right to perform independent technical study of the site

- Nevada decision to establish quality assurance program to govern technical program

- Selected Sargent & Lundy Engineers to assist in development of QA program

- July 1987 the State submitted QA program manual to NRC for acceptance review

- March 1988 NRC accepted Nevada's QA program
QA Program Conforms to Applicable Requirements of:

1. 10 CFR 60 Subpart G
2. 10 CFR 50 Appendix B
3. ANSI/ASME NQA-1
Definition of Quality Assurance


"All those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service."

State of Nevada

"All those planned and systematic actions necessary to provide adequate confidence that activities significant to NWPO's goals have been satisfactorily performed by qualified persons."
Differences in Application of Requirements

- No differentiation between quality-related activities and non-quality-related activities

- Technical activities do not directly address waste isolation and public safety
Nevada's QA Program

1. QA Plan and Implementing Procedures

2. Technical Procedures
Figure 01-1, General Project Organization Chart
Figure 01-2, Contractor Organization Chart for Desert Research Institute, Water Resources Center, University of Nevada
State of Nevada
Agency for Nuclear Projects
Nuclear Waste Project Office
Quality Assurance Program

NWPO
Administrator of Technical Programs

Mifflin & Associates, Inc.
Project Manager

PI—Technical Review Hydrogeologic Data
PI—Vadose Zone Drilling/Sampling Methodologies
PI—Intensive Review/Calculation Thermal Effects Disturbed Zone
PI—Carbonate Isotopes
PI—Isotopic Composition Minerals
PI—Volcanic Glass Chemistry
PI—Calcite-Silica Pedologic Study

Associate Investigators and Support Staffs (for each PI)

Additional Subcontractors, Vendors/Suppliers (as needed for each PI)

MIT
Laboratory Director

University of Utah
Laboratory Director

R. B. Morrison
Laboratory Director

MIT = Massachusetts Institute of Technology
NWPO = Agency for Nuclear Projects Nuclear Waste Project Office
PI = Principal Investigator

Figure 01-3, Contractor Organization Chart
Mifflin & Associates, Inc.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Applicable to Nevada Program</th>
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<tbody>
<tr>
<td>01 Organization</td>
<td>Yes</td>
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<tr>
<td>02 Quality Assurance Program</td>
<td>Yes</td>
</tr>
<tr>
<td>03 Design Control (*Analysis of Site Characterization Data)</td>
<td>Yes*</td>
</tr>
<tr>
<td>04 Procurement Document Control</td>
<td>Yes</td>
</tr>
<tr>
<td>05 Instructions, Procedures, and Drawings</td>
<td>Yes</td>
</tr>
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<td>06 Document Control</td>
<td>Yes</td>
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<tr>
<td>07 Control of Purchased Materials, Equipment, and Services</td>
<td>Yes</td>
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<tr>
<td>08 Sample Identification and Control</td>
<td>Yes</td>
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<tr>
<td>09 Control of Special Processes</td>
<td>No</td>
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<td>10 Inspection, Surveillance, and Monitoring</td>
<td>Yes</td>
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<td>11 Test Control</td>
<td>No</td>
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<td>12 Control of Measuring and Test Equipment</td>
<td>Yes</td>
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<td>13 Sample Handling, Storage, and Shipping</td>
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<td>14 Inspection, Test, and Operating Status</td>
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<tr>
<td>15 Nonconformances</td>
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<td>16 Corrective Action</td>
<td>Yes</td>
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<td>17 Quality Assurance Records</td>
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<td>18 Audits</td>
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Quality Assurance Procedures

PROCEDURE NUMBER PROCEDURE TITLE

QAP-2.1 Position Titles, Position Descriptions, Employee Experience Records, and Qualification Statements

QAP-2.1 Preparation, Control, and Distribution of the Agency for Nuclear Projects/Nuclear Waste Project Office Quality Assurance Manual

QAP-2.2 Preparation and Control of Technical Procedures


QAP-2.4 Management Assessment of the Agency for Nuclear Projects/Nuclear Waste Project Office Quality Assurance Program


QAP-3.1 Calculations

QAP-3.2 Technical Reports
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<td>QAP-3.3</td>
<td>Peer Reviews</td>
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<td>QAP-3.4</td>
<td>Review of DOE/DOE-Contractor Technical Reports and Data</td>
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<td>QAP-4.1</td>
<td>Procurement Contract Control and Contractor/Subcontractor Qualification</td>
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<td>QAP-6.1</td>
<td>Document Distribution List and File Index</td>
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<tr>
<td>QAP-6.2</td>
<td>Progress Reports and Master Document Lists</td>
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<td>QAP-16.1</td>
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EMPHASIS OF NEVADA QA PROGRAM
IS ON DOCUMENTATION AND
TRACEABILITY OF QUALITY WORK