

SAIC AUDIT 2/93, 2/24/93

**OBSERVATION OF A DOE AUDIT REPORT**

**NRC/NMSS/DHLWM Technical Staff Observation of  
DOE February 1993 Audit of  
Science Applications International Corporation/T&MSS**

**D. L. Chery, Jr.**

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Introduction

The NRC program and technical staff observed the Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM) audit of Science Applications International Corporation (SAIC) Air Quality and Meteorology program at their Las Vegas office and the Yucca Mountain site. The purpose of the observation was to assess the effectiveness of the DOE audit.

The DOE Technical Specialist Auditor was charged to make "a determination of the adequacy [of the Air Quality/Meteorology program] in the following areas:"

- \* "Technical qualifications of personnel assigned to this area."
- \* "Understanding of procedural requirements as they pertain to Meteorological Monitoring."
- \* "Adequacy of technical procedures and their implementation."

The Technical Specialist was Dale S. Ambos, MS, meteorologist, Foothill Engineering Consultants, Inc., a consultant to the U.S. Geological Survey, Las Vegas, Nevada.

Examination of Technical Products

The technical specialists of the audit team reviewed in a selected and focused way the technical area listed below by Work Breakdown Structure (WBS) Number and title:

WBS Number

Title

1.2.13.4.2

Air Quality/Meteorology

The NRC technical staff observed the audit team's technical auditor's evaluation of this WBS. This activity involved auditing "criteria" or programmatic elements

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PDR WASTE  
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3 (Design Control) and 20 (Scientific Investigation Control). Only those examinations that were observed are described.

#### Supporting Information for Site Characterization and Performance Assessment

This WBS was audited as "quality-related" work; however as presently conducted the focus of program is to meet U.S. Environmental Protection Agency (EPA) air quality standards and obtain data for air pollution dispersion studies for the repository site. Only in a supplemental or peripheral way would the data be used in the site characterization, design or performance assessment evaluations.

The technical auditor was well prepared with a comprehensive set of questions (derived from Study Plan 8.3.1.12.2.1 "Meteorological Monitoring Plan" Rev. 0, 2/28/91, Site Investigation Procedures, the SAIC WBS for this technical area and Work Instructions. The questions were followed until all issues were answered completely. Lead technical investigators were questioned about the rationale for determining the location of instruments, instrument calibration, data collection, data processing, and record keeping including adherence to and knowledge of record keeping procedures. In addition, training records of key project personnel were reviewed and compared against a list of procedures that were considered applicable to the project.

For the first day, auditing was conducted in the SAIC offices in Las Vegas, Nevada, and then on the second day the technical auditors traveled to the Yucca Mountain site to review storage, data processing, and instrumentation calibration activities at the field office. Then three field meteorological sites (#9, #5, and #1 in that order) were visited to observe servicing and calibration of the field instruments. These sites were representative of one of the 4 new 10m meteorological stations, an older 10m station, and the main 60m tower meteorological station which also has a major air quality monitoring and recording system. There are nine meteorological stations in the network which are visited periodically to collect the recorded data and check the operation of the instruments. In the following two days, the audit was conducted in the SAIC office in Las Vegas.

The auditors reviewed in detail the use of data processing computer programs. The use of these programs was evaluated in accordance with Software QA and adherence to other procedures written to govern the use of computer programs.

#### Conclusion

##### Audit Effectiveness

It is the judgement of this technical observer, that the DOE technical auditor was qualified, well prepared for the audit, and pursued the audit with diligence and thoroughness.

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In general, the technical portion (programmatic elements 3 and 20) of the audit was effective.

**YUCCA MOUNTAIN  
SITE CHARACTERIZATION PROJECT  
AIR QUALITY AND METEOROLOGY  
MONITORING SITES**

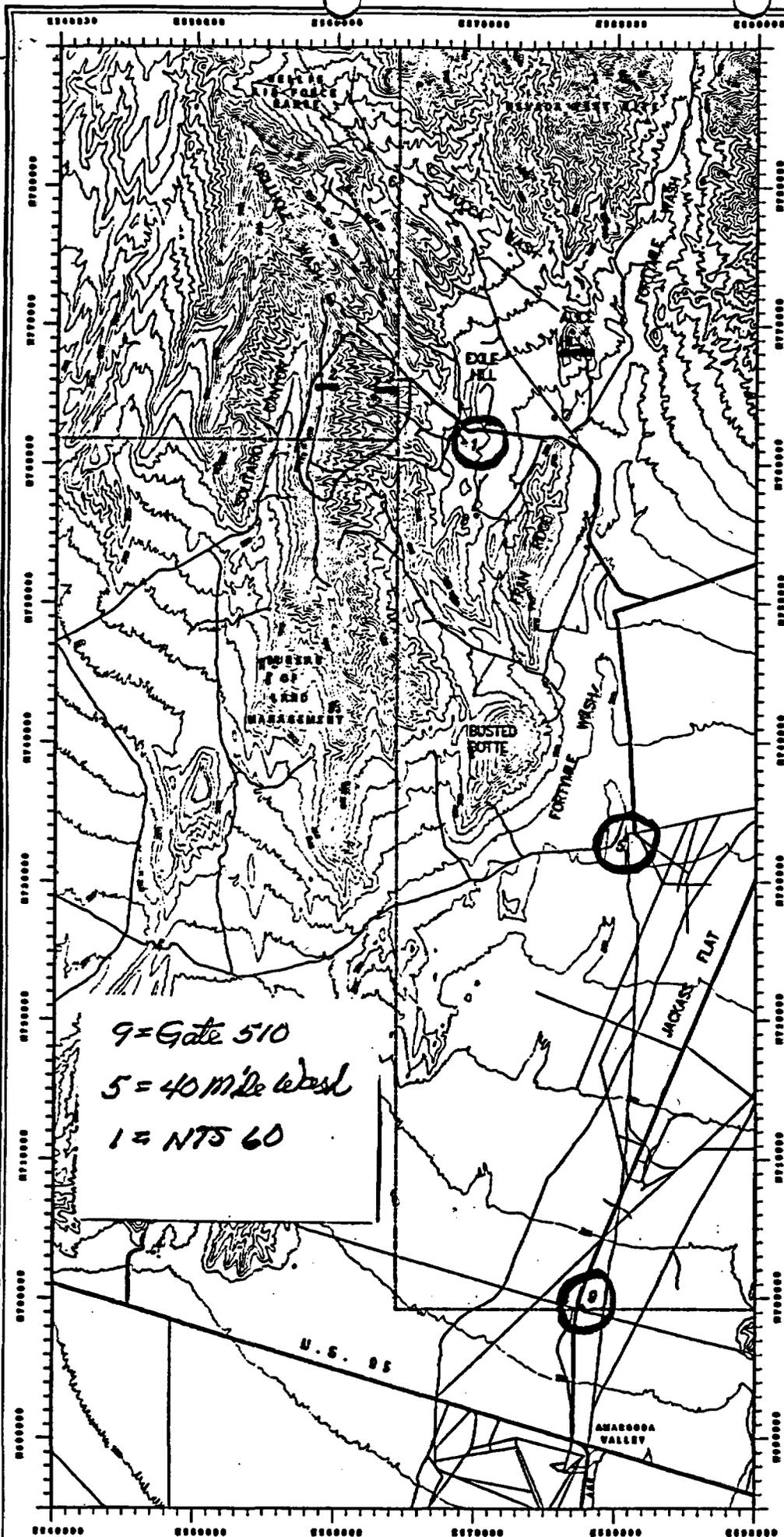
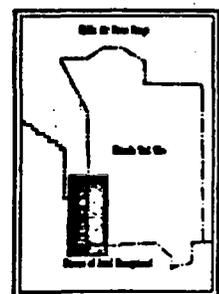


- SITE CHARACTERIZATION FEATURES**
- ~ Conceptual Perimeter Drift
- SELECTED MONITORING SITES**
- Meteorology
  - ▲ Air Quality and Meteorology

SITE IDENTIFICATION	SITE NAME
9	NTS 60
5	YUCCA MOUNTAIN
4	GOOSE MOUNTAIN
3	ALICE HILL
2	GO-MILE MOUNTAIN
1	NTS 60
0	GOOSE MOUNTAIN
0	WESTINGHOUSE GAP
0	GOOSE MOUNTAIN

- BOUNDARY FEATURES**
- == APPROVED BOUNDARY
  - MILEAGE BOUNDARY
  - LIGHT BOUNDARY
  - UNAPPROVED

Good features obtained from U.S. Geological Survey 1:24,000 scale topographic map; USGS 1:24,000 scale orthophoto maps; and aerial photography. Elevation contours obtained from 1:24,000 scale USGS Digital Line Graph data. Contour interval is 100 feet. Conceptual Perimeter Drift boundary digitized from Sandia National Laboratories Product No. 287802A, April 1985. Locations of monitoring sites are based on interim coordinate data, obtained from SAIC, November 1992. Map projection is Transverse Mercator. Grid ties are based on Nevada State Plane Coordinate System, Central zone. Map compiled by EOH/SAI Santa George Laboratory, November 1992. This map should not be used in quality-affecting work.



9 = Gate 510  
5 = 40 mile west  
1 = NTS 60