

U.S. NUCLEAR REGULATORY COMMISSION

ON-SITE LICENSING REPRESENTATIVE REPORT

NUMBER OR-96-09

FOR THE REPORTING PERIOD OF September 1-30, 1996


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TABLE OF CONTENTS

U.S. NUCLEAR REGULATORY COMMISSION
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	PAGE
1. APPROVAL SHEET.....	i
2. TABLE OF CONTENTS.....	ii

REPORT DETAILS

1.0 INTRODUCTION.....	1
2.0 OBJECTIVES.....	1
3.0 SUMMARY AND CONCLUSIONS.....	1
4.0 QUALITY ASSURANCE, ENGINEERING, AND NRC KEY TECHNICAL ISSUES.....	2
5.0 EXPLORATORY STUDIES FACILITY AND KEY TECHNICAL ISSUES...	3
6.0 GENERAL	6
7.0 REPORTS.....	8

REPORT DETAILS

1.0 INTRODUCTION

The principal purpose of the On-Site Licensing Representative (OR) reports is to alert NRC staff, managers and contractors to information on the U.S. Department of Energy (DOE) programs for site characterization, repository design, performance assessment, and environmental studies that may be of use in fulfilling NRC's role during pre-licensing consultation. The principal focus of this and future OR reports will be on DOE's programs for the Exploratory Studies Facility (ESF), surface-based testing, performance assessment, data management systems and environmental studies. Relevant information includes new technical data, DOE's plans and schedules, and the status of activities to pursue site suitability and ESF development. In addition to communication of this information, any potential licensing concerns, or opinions raised in this report represent the views of the ORs and not that of NRC headquarters' staff. The reporting period for this report covers September 1-30, 1996.

2.0 OBJECTIVES

The function of the OR mission is to principally serve as a point of prompt informational exchange and consultation and to preliminarily identify concerns about site investigations relating to potential licensing issues. The ORs accomplish this function by communicating, consulting and identifying concerns. Communication is accomplished by exchanging information on data, plans, schedules, documents, activities and pending actions, and resolution of issues. The ORs consult with the DOE scientists, engineers, or managers with input from NRC Headquarters management on NRC policy, philosophy, and regulations. The ORs focus on such issues as quality assurance (QA), design controls, data management systems, performance assessment, and key technical issue resolution. A principle OR role is to identify areas in site characterization and related studies, activities, or procedures that may be of interest or concern to the NRC staff.

3.0 SUMMARY AND CONCLUSIONS

There appears to be a notable increase in the number and substance of deficiencies being identified during the conduct of the DOE internal QA audits. This increase has been especially noticeable with the recent audits of the U.S. Geological Survey (USGS), Office of Civilian Radioactive Waste Management (OCRWM), Los Alamos National Laboratory (LANL), and Sandia National Laboratories (SNL).

This trend could be indicative of ineffective oversight or budgetary constraints. The ORs recommend that DOE consider reviewing the current system of implementing the QA program effort and develop alternative solutions for improvement before major issues develop and render data and information unacceptable for the licensing process.

The ORs continue to monitor ESF and surface-based testing activities. In the ESF, the Tunnel Boring Machine advanced to station 64+77 meters (21,250 feet). Excavation continues in the Thermal Test Alcove and the Northern Ghost Dance Fault Alcove. Investigators continue tracer testing at the C-Hole Complex and monitoring of water level recovery from a previous pump test in G-2. Pneumatic data recording and gas sampling continues at boreholes UZ-4, UZ-5, NRG-6, UZ-7a, SD-7, SD-9, SD-12, UZ-6s and NRG-7a.

4.0 QUALITY ASSURANCE, ENGINEERING, AND NRC KEY TECHNICAL ISSUES

As a result of observing and tracking recent QA audits of DOE and DOE affected organizations, there appears to be a notable increase in the number and substance of deficiencies being uncovered during the conduct of these audits. For example, recent audits of the USGS have resulted in substantive deficiencies being discovered, especially from the technical perspective. Consequently, this necessitated a full-time DOE QA representative being stationed at the USGS facilities in Denver, CO, to facilitate implementation of effective corrective action to correct these deficiencies and prevent recurrence. During the August 5-9, 1996, audit of OCRWM Offices in Las Vegas, NV, 21 potential concerns were identified. Although several of these potential concerns were corrected during the audit and were not of a substantive nature, the NRC OR considers this to be an unusually high number of potential concerns being identified. During the July 17-26, 1996, audit of SNL, 12 potential deficiencies were documented. Most recently, during the September 16-23, 1996, audit of LANL, five deficiencies were identified and the area audited was considered to be "marginally effective" by the DOE auditors. Two of the latest deficiencies appear to be of a substantive nature that could possibly have an adverse effect on licensing in the future if this trend continues.

Based on the recent increase of deficiencies that have surfaced, it is the OR's opinion, that total implementation of the QA program is not as effective as it should be. In view of almost 10 years experience in implementing the QA effort by DOE and the DOE affected organizations for the high-level waste program, it would appear that the number of deficiencies and the substance of these deficiencies would

be minimal. Due to recent budgetary constraints in resources, there appears to be less expertise and resources available to oversee and maintain the high-level of QA program implementation previously observed in the program. For example, the QA support contractors Science Applications International Corporation, Los Alamos Technical Associates, and MACTECH have been virtually disbanded at USGS, LANL, and SNL respectively. In their place, the DOE Civilian Radioactive Waste Management System Management and Operating Contractor was to have taken responsibility to provide the necessary support to maintain effective QA program implementation. This does not appear to be working as effective as the previous QA program implementation. Line organizations appear to be regressing to previous modes experienced earlier in the program without this oversight. Without this effective oversight, acquired data and information may not be of the necessary quality to withstand the rigors of the licensing process. Therefore, the OR's recommend that DOE consider reviewing the current system of implementing the QA program effort and develop alternative solutions for improvement before major issues develop and render data and information unacceptable for the licensing process.

5.0 EXPLORATORY STUDIES FACILITY AND KEY TECHNICAL ISSUES

Exploratory Studies Facility Testing:

As of September 30, 1996, the Tunnel Boring Machine (TBM) advanced to station 64+77 meters. Geologic mapping progressed approximately to station 64+00 meters. At station 63+05, the TBM reentered the Topopah Spring crystal poor upper lithophysal zone which is the stratigraphic unit immediately overlying the potential repository horizon. Over this reporting period, alcove testing was confined to Alcoves 5 and 6. The location of alcoves and preliminary tunnel stratigraphy is summarized in Enclosure 1.

Alcove 5 (Thermal Testing Facility Access/Observation Drift and Connecting Drift)

Excavation of the connecting drift for the Heated Drift Test resumed using the drill and blast method. On September 30, 1996, this excavation had advanced 18 meters of its planned length of 45 meters. The Heated Drift Test will heat approximately 15,000 cubic meters of rock in the repository horizon to 100 degrees centigrade or greater to investigate coupled processes under thermal loading.

Alcove 5 (Thermomechanical Alcove)

The Single Heater Test started on August 26, 1996. Instruments for this test are reported to be working properly. This test is designed to heat approximately 25

cubic meters of rock to 100 degrees centigrade or greater to investigate thermomechanical properties of rock in the potential repository horizon.

Alcove 6 and 7 (Northern and Southern Ghost Dance Fault Alcoves)

Testing in Alcoves 6 and 7 is designed to investigate the hydrochemical and pneumatic properties of the Ghost Dance Fault. The excavation of Alcove 6 has advanced approximately 90 meters from the ESF tunnel centerline. Investigators have drilled a horizontal radial borehole 20 meters from the end of this alcove in an effort to penetrate the Ghost Dance Fault. After an examination of the core and video log from this borehole, investigators determined that the fault was not penetrated. Therefore, the Alpine Miner will be used to extend this alcove another 15 meters. After completing this extension, a radial borehole will be drilled from the end of this alcove in an effort to penetrate the Ghost Dance Fault. Excavation of Alcove 7 (station 50+64) is scheduled to start in October 1996.

SURFACE-BASED TESTING

Borehole Testing:

The location of boreholes referenced in this section is provided in Enclosure 2.

C-Hole Complex

Investigators continued with the third tracer test at the C-Hole Complex. The C-Hole tracer testing is designed to assist in establishing flow and transport properties in the saturated zone. This testing is being conducted in the Bullfrog member of Crater Flat Tuff. A total of 15 kilograms of sodium iodide, a conservative (non-sorbing) tracer, was injected into C#1 on June 18, 1996. Since the start of this test, groundwater has been pumped from C#3 at a rate of approximately 150 gallons per minute and discharged to Fortymile Wash. Investigators continue to monitor pumped effluent from C#3 for the presence of iodide above background concentrations. Based on preliminary data, investigators believe initial breakthrough of sodium iodide occurred on July 10, 1996. Current plans are to start reactive (sorbing) tracer testing in October 1996. Enclosure 3 provides preliminary information of the status of C-Hole testing.

G-2 Testing

Automatic recording of water-level recovery data from the pump test conducted in April 1996 continues. Over this reporting period, the recovery of the water level in this borehole appears to have leveled off at approximately half a meter below the pre-test water level.

Pneumatic Testing in Boreholes

Pneumatic data recording and gas sampling continues at boreholes UZ-4, UZ-5, NRG-6, UZ-7a, SD-7, SD-12, UZ-6s, and NRG-7a. Nye County is recording data in NRG-4 and ONC-1 as well as collecting temperature, pressure, and humidity data from instrumentation installed on the TBM.

OTHER ACTIVITIES

Chlorine-36 Studies at Yucca Mountain

Two recent LANL reports on Chlorine-36 were reviewed and accepted by DOE. The first report is entitled "Summary Report of Chlorine-36 Studies." This report summarizes the sample collection, analytical data, transport calculations for CL-36 through August 1996. This report updates reports previously prepared, and incorporates much of the work contained in a second report entitled "Summary Report of Chlorine-36 Studies: Sampling, Analysis, and Simulation of CL-36 in the Exploratory Studies Facility." Overall these studies suggest that infiltration is spatially variable and probably higher than previously believed, that fracture transport can be critical in permitting rapid transport through otherwise low-conductivity materials, and that isolated fast paths associated with faults and fractures may penetrate deep into the mountain. The results of these studies have helped to define a conceptual model of flow and transport in the unsaturated zone at Yucca Mountain.

Unsaturated Zone Model of Yucca Mountain

DOE investigators have recently completed a report entitled "Development and Calibration of the Three-Dimensional Site-Scale Unsaturated Zone Model of Yucca Mountain, Nevada." This report is a major step in DOE's efforts to develop a fully integrated unsaturated zone model of Yucca Mountain for use in Total System Performance Analysis-1997. This version of the model is quite mature in some areas while work is just starting in other areas. The present model contains most, if not all, of the important processes and components at Yucca Mountain, including: faults, perched water, rock matrix and fracture properties, infiltration, temperature profile for boreholes, and fast paths based on information from environmental isotopes. Over the next year, DOE investigators plan to assemble all model components into an fully integrated, comprehensive, and defensible unsaturated zone model.

3D Geologic Framework Model of Yucca Mountain

DOE investigators have developed a 3D Geologic Framework and Integrated Site Model (version ISM1.0) of Yucca Mountain. The framework model encompasses a 166 square kilometer rectangle around the Controlled Area Boundary, and includes maps for over 30 rock units from the surface to the top of

the Paleozoic carbonates. Input data for this model includes: borehole lithologic and geophysical logs, measured sections, surface geophysical profiles, and geologic maps. Rock properties for the Topopah Spring Tuff welded unit include matrix porosity, bulk lithophysal porosity, saturated hydraulic conductivity, density, and thermal conductivity. This model also integrates other data sets on mineralogy, Uranium/Thorium ages, Chlorine-36 ratios from borehole and ESF samples and installed ground support type along the ESF. An updated version of the geologic framework model is expected to be developed within the next 6 months.

DOE Synthesis Reports

DOE is developing a series of "synthesis reports" which summarize all data and analysis, for selected scientific areas, in one document. A listing of planned synthesis reports was included in the NRC OR report dated June 10, 1996. These synthesis reports are designed to assess the results of site characterization work relative to DOE's waste isolation strategy, and to assist in identifying any significant information gaps. Two of these synthesis reports "Seismotectonic Framework for Yucca Mountain" and "Characterization of Fractures at Yucca Mountain" have been developed and accepted by DOE.

The synthesis report on the seismotectonic framework for Yucca Mountain includes the site characterization data and other regional data along with the analysis that will form the basis for the seismic hazard analysis. The synthesis report on fractures consolidates 15 years of geologic and hydrologic characterization of fractures into one database to facilitate the analysis of fractures. Sources of this data include rock pavements studies, and geologic mapping both on the surface and in the ESF. This data will be used for interpretation of the tectonic setting of the site, construction of a 3D fracture network model for unsaturated zone flow, and in pneumatic pathways models.

6.0 GENERAL

1. Meetings/Interactions

- Attended the regularly scheduled meeting with W. Barnes, Yucca Mountain Site Characterization Office (YMSCO) Project Manager, Deputy Project Manager, YMSCO Assistant Managers, and the YMSCO QA Manager. See Enclosure 4 for the subject matter discussed at this meeting.

- The ORs and the NRC Section Leader of the Performance Assessment and Integration Section (PAIS) gave

presentations to the State of Nevada Legislature's Committee (NLC) on High-Level Radioactive Waste on September 9, 1996. The ORs informed the NLC on the recent On-Site QA and technical-related activities and the Section Leader of the PAIS presented an overview of the NRC high-level waste repository program from the NRC Headquarters perspective. There were no outstanding issues raised resulting from the NRC presentations. Also informing the NLC of the status in their respective areas were W. Barnes (YMSCO), and R. Loux, the Director of the State of Nevada Agency for Nuclear Projects Nuclear Waste Project Office.

- Attended the September 10, 1996, Appendix 7 NRC/DOE Meeting on Probabilistic Volcanic Hazards Assessment (PVHA) in Las Vegas, Nevada. The purpose of this meeting was to discuss the consistency of the PVHA process with the NRC's Technical Position on Expert Elicitation. From the feedback received from both NRC/DOE, this discussion was beneficial for both parties understanding the strengths, weaknesses, and lessons learned. There appeared to be no major issues raised during these discussions.
- Attended the September 12, 1996, NRC/DOE ESF Video Conference meeting leading towards resolution of issues listed on the agenda (See Enclosure 5).
- Attended the last day and exit meeting of the DOE Audit of LANL during the week of September 16-21, commencing in Los Alamos, New Mexico, and ending in Las Vegas, NV. The NRC Lead Observer and Technical Specialist will document their findings and conclusions in a forthcoming NRC Audit Observation Report. The OR brief observations of this audit are provided in Section 4 above of this OR report.
- Attended the September 26-27, 1996, 86th meeting of the U.S. NRC's Advisory Committee on Nuclear Waste (ACNW) in Las Vegas Nevada. This meeting was considered to be a Working Group Meeting on the Subject of Radionuclide Transport on Thursday September 26 and the regular business meeting on Friday September 27, 1996. Presentations by Yucca Mountain personnel and their contractors were given at all sessions. Also attended the September 25, 1996, site visit arranged by DOE for the ACNW. At the September 26, 1996, the ACNW Vice Chairman publicly acknowledged and thanked DOE for an excellent site visit.

2. Appendix 7 Site Interactions

- Conducted a September 11, 1996, site visit for two members of the PAIS. The purpose of this visit was to tour the ESF, Yucca Mountain crest, the Large Block Test, and view the trenches excavated along Ghost Dance Fault. There were no outstanding issues raised during this visit.

3. Other

- Early in September 1996, the YMSCO Project Manager announced that DOE was reorganizing to be more product oriented in terms of the Viability Assessment. This reorganization is intended to become effective in late October 1996. Enclosure 6 provides the major positions with a brief description of their responsibilities.

7.0 REPORTS

Over this reporting period the following reports were received in the NRC Las Vegas office.

LOS ALAMOS NATIONAL LABORATORY

LA-13145-SR LOS ALAMOS NATIONAL LABORATORY YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT 1995 QUALITY PROGRAM STATUS REPORT YUCCA MOUNTAIN PROJECT BRANCH USGS PROGRESS REPORT, July, 1996, S. Bolivar

SANDIA NATIONAL LABORATORIES

SAND94-2320 BENCH-SCALE EXPERIMENTAL DETERMINATION OF THE THERMAL DIFFUSIVITY OF CRUSHED TUFF, 8/96 (2nd print), E. Ryder, R. Finley, J. George, C. Ho, R. Longenbaugh, J. Connolly

SAND95-1824 CHALLENGING AND IMPROVING CONCEPTUAL MODELS FOR ISOTHERMAL FLOW IN UNSATURATED, FRACTURED ROCK THROUGH EXPLORATION OF SMALL-SCALE PROCESSES, 8/96, R. Glass, M. Nicholl, V. Tidwell

SAND95-1888 LABORATORY INVESTIGATION OF CONSTITUTIVE PROPERTY UP-SCALING IN VOLCANIC TUFFS, 8/96, V. Tidwell

SAND95-2001 PRELIMINARY VALIDATION OF ROCK MASS MODELS BY COMPARISON TO LABORATORY FRICTIONAL SLIDING EXPERIMENTS, 9/96, S. Sobolik, Joel Miller

SAND95-2080 USE OF STRATIGRAPHIC MODELS AS SOFT INFORMATION TO CONSTRAIN STOCHASTIC MODELING OF ROCK PROPERTIES: DEVELOPMENT OF THE GSLIB-LYNX INTEGRATION MODULE, 10/95, M. Cromer, C. Rautman

SAND95-2338 SCALING OF MATERIAL PROPERTIES FOR YUCCA MOUNTAIN:
LITERATURE REVIEW AND NUMERICAL EXPERIMENTS ON SATURATED
HYDRAULIC CONDUCTIVITY, 8/96, S. McKenna, C. Rautman

LAWRENCE LIVERMORE NATIONAL LABORATORY

UCRL-ID-122898 GEOMECHANICAL ANALYSIS OF THE LARGE BLOCK TEST,
8/96, S. Blair, P. Berge, H. Wang

UCRL-ID-125176 THE EFFECTS OF DIESEL EXHAUST ON THE MICROBIOTA
WITHIN A TUFFACEOUS TUNNEL SYSTEM, 8/96, D. Haldeman, T.
Lagadinos, L. Hersman, A. Meike, P. Amy

USDOE

DOE/EM-0290 THE 1996 BASELINE ENVIRONMENTAL MANAGEMENT REPORT,
6/96

USGS

AUGUST, 1996 PROGRESS REPORT

Open-File Report 95-397 STRATIGRAPHIC RELATIONS AND HYDROLOGIC
PROPERTIES OF THE PAINTBRUSH TUFF NONWELDED (PTn) HYDROLOGIC
UNIT, YUCCA MOUNTAIN, NV, 1996, T. Moyer, J. Geslin, Lorraine
Flint

FORWARDED TO NRC WA FROM LAS VEGAS OR OFFICE

THERMOMECHANICAL BASIS FOR SELECTION OF THERMAL TEST ALCOVE,
(Sandia); CHARACTERIZATION OF THE ESF THERMAL TEST AREA, 8/96,
(TRW for YMSCP); IN-SITU THERMAL TESTING PROGRAM STRATEGY, 6/95,
(YMSCP); PRE-TEST ANALYSES OF THE SINGLE HEATER TEST, 8/96,
(Sandia), ESF THERMAL TEST DESIGN: ANALYSIS STATUS 9/95 (YMSCP-
SLTR95-0013); REPORTS RELATED TO IN SITU THERMAL TESTS; U.S.
DEPARTMENT OF ENERGY DETERMINATION OF THE USE OF THE RESULTS OF
THE PEER REVIEW REPORT ON THE THERMOHYDROLOGIC MODELING AND
TESTING PROGRAM, 8/96; PROGRESS REPORT ON PRE-TEST CALCULATION
FOR THE LARGE BLOCK TEST, 1/95, (LLNL); SECOND PROGRESS REPORT ON
PRE-TEST CALCULATIONS FOR THE LARGE BLOCK TEST, (LLNL);
GEOMECHANICAL ANALYSIS OF THE LARGE BLOCK TEST, 8/96 (LLNL);
THERMAL-HYDROLOGICAL ANALYSIS OF LARGE-SCALE THERMAL TESTS IN THE
EXPLORATORY STUDIES FACILITY AT YUCCA MOUNTAIN, 2/96, (LLNL)

ESF TUNNEL STRATIGRAPHY*

STATION

0+00 to 0+99.5m	Tiva Canyon crystal poor upper lithophysal zone. <u>Alcove #1</u> (centerline station intersection): 0+42.5
0+99.5 to 1+90m	Tiva Canyon crystal poor middle nonlithophysal zone <u>Alcove #2</u> (centerline station intersection): 1+68.2
1+90 to 1+99.5m	Tiva Canyon crystal poor lower lithophysal zone.
1+99.5 to 2+02m	Bow Ridge fault zone (placing Pre-Ranier Mesa Tuff against Tiva Canyon Tuff)
2+02 to 2+20m	Pre-Ranier Mesa Tuff
2+20	Fault (4.3m offset)***
2+20 to 2+63.5m	Pre-Ranier Mesa Tuff
2+63.5 to 3+37m	Tuff "X"
3+37 to 3+49.5m	Pre-Tuff "X"
3+49.5 to 3+59.5m	Tiva Canyon vitric zone
3+59.5 to 4+30m	Tiva Canyon crystal rich nonlithophysal zone
4+30m	Fault (~10m offset)***
4+30 to 4+34	Tiva Canyon crystal rich nonlithophysal zone
4+34 to 4+39m	Tiva Canyon crystal rich lithophysal zone
4+39 to 5+50m	Tiva Canyon crystal poor upper lithophysal zone
5+50m	Fault (~5m offset)***
5+50 to 5+53	Tiva Canyon crystal poor upper lithophysal zone
5+53 to 5+87m	Tiva Canyon crystal poor middle nonlithophysal zone

ESE TUNNEL STRATIGRAPHY CONTINUED*

5+87 to 6+19m	Tiva Canyon crystal poor lower lithophysal zone
6+19 to 7+00m	Tiva Canyon crystal poor lower nonlithophysal zone
7+00m	Fault (~20m? offset)***
7+00 to 7+77m	Tiva Canyon crystal poor lower nonlithophysal zone. <u>Alcove #3</u> (centerline station intersection): 7+54.
7+77 to 8+69m	Tiva Canyon crystal poor vitric zone
8+69 to 9+12m	Bedded tuffs (including thin Yucca Mountain member)
9+12 to 10+20m	Pah Canyon Member.
10+20 to 10+51.5m	Pre-Pah Canyon tuffs <u>Alcove #4</u> (centerline station intersection): 10+27.8
10+51.5 to 11+93m	Topopah Spring crystal rich vitric zone
11+93 to 17+17m	Topopah Spring crystal rich nonlithophysal zone
17+17 to 17+97m	Topopah Spring crystal rich lithophysal zone
17+97 to 27+20m	Topopah Spring crystal poor upper lithophysal zone
27+20 to 35+93m	Topopah Spring crystal poor middle nonlithophysal zone <u>Alcove #5</u> (centerline station intersection): 28+27
35+93m	Sundance fault (most prominent fault plane, minor fracturing reported between Stations 35+85 and 36+40)
35+93 to 63+05m?	Topopah Spring crystal poor middle nonlithophysal zone

ESF TUNNEL STRATIGRAPHY CONTINUED*

Alcove #6 (centerline intersection): 37+37

57+30

Splay of the Ghost Dance Fault - Offset is approximately 2 meters

63+08 To face

Topopah Spring crystal poor upper lithophysal zone

63+25

Fault with the offset estimated as 3.8 meters

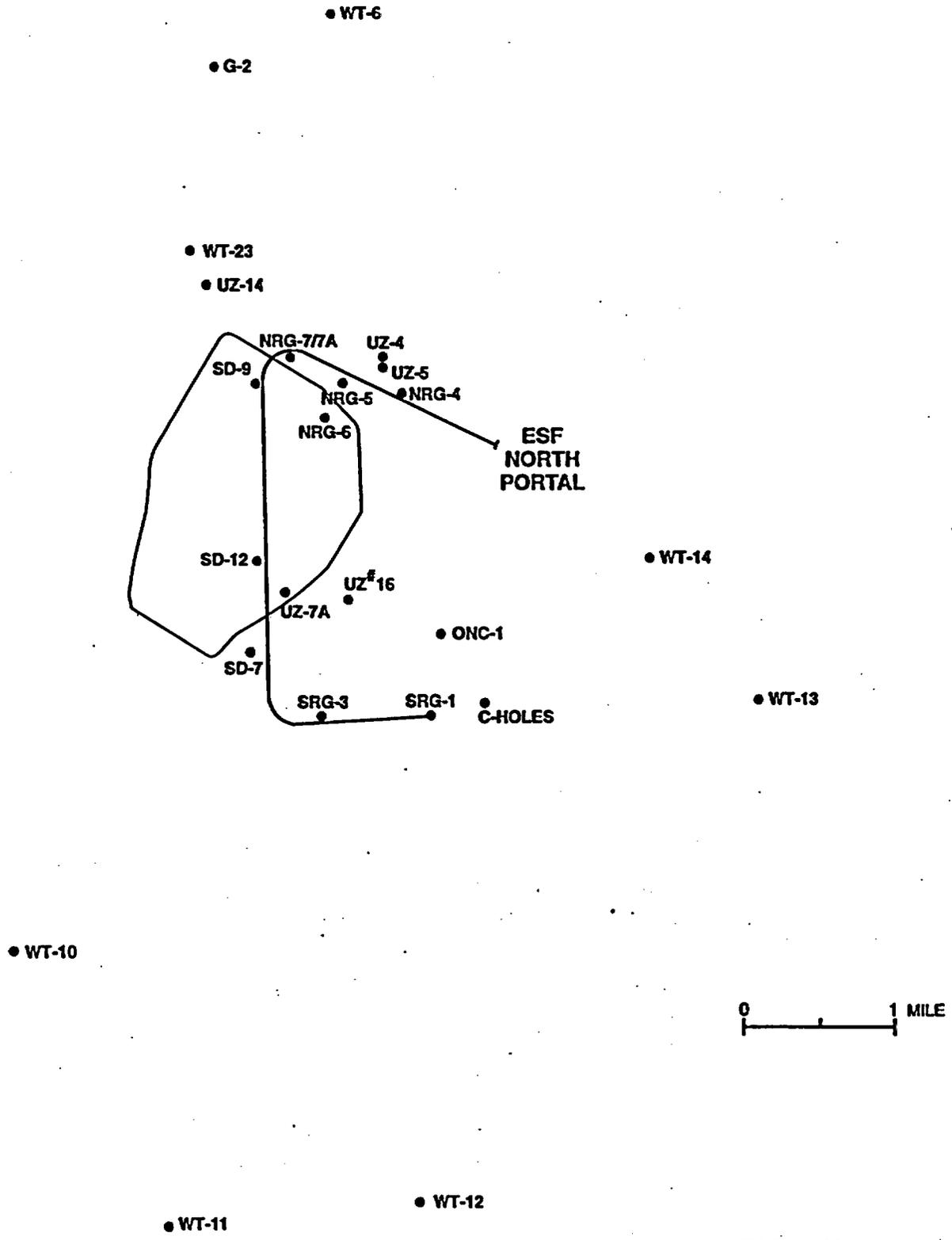
Note: Starting at station 57+02 and ending at 59+80, the crystal poor lower lithophysal zone is exposed in the lower portion of the tunnel (below springline).

***** All stations given are referenced to the right springline unless otherwise noted. Station 0+00 is located at coordinates N765352.7, E569814.4.

****** Indicates that contact is preliminary and has not been verified.

******* Only significant faults are noted on the table.

Selected Borehole Locations



SELHOLES.CDR.123/9-7-95

**OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
YUCCA MOUNTAIN SITE CHARACTERIZATION
Summary of C-Well Tracer Tests**

09/30/96

Tracer	Nal	PFBA	Nal
Injection well	C#2	C#2	C#1
Date injected	02/08/98	05/15/96	06/18/96
Test Ended	03/29/96	06/18/96	09/01/96
Amount of Tracer/Compound authorized	10.0 kg	as PFBA 10.0 kg	15.0 kg
Amount Injected	5.9 kg	PFBA 10.08 kg	14.84 kg (12.56 kg iodide)
Volume of Water Tracer mixed with	500 liters	1000 liters	1000 liters
1) Recovered amount of ion - as of	1.4 kg Nal - 03/29/96	4.8 kg - 6/20/96	
% recovered	45 days 28%	35 days 48%	
2) Recovered amount of compound - as of	due to recirculation	7.0 kg - 08/27/96	2.95 kg Nal - 09/01/95
% recovered		70%	
Peak concentration		340 ppb	18 ppb
Volume Discharged to Fortymile Wash	7,917,000	7,774,000	16,400,000
Recirculation	No	Yes	Yes
Start		5/14/96	06/18/96
End	03/29/96	172,000 gals recirculated - 5/14/96 - 6/7/96	90,000 gals re-injected (C#1) 06/17/96-07/03/96 104,000 gals re-injected (C#2) 7/3/96-7/17/96 2,800 gals test of injection valve (C#2) 9/24/96 & 9/25/96

Water Volume discharged	7,917,000	7,948,600 gals	16,400,000
Amount reinjected as of June 20, 1996		166,000 mg	
Average Concentration		.1124 mg/L	
Peak Concentration during ReInjection			
Pumping prior to injection?	No	Yes	No
Start		05/08/96 - 05/14/96 1,561,000 gals pumped/discharged	

September 30, 1996

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AGENDA FOR 9/17/96 W. BARNES MEETING

- o DOE feedback on DOE/YMSCO reorganization
- o DOE status on QA consolidation effort
- o DOE schedule for revision to 10 CFR 960
- o NRC feedback on qualification of data
- o DOE plans for new boreholes at Yucca Mountain
- o DOE major unresolved issues significant to repository performance
- o DOE status on CL36 work
- o NRC feedback on recent NRC/CNWRA visits
- o DOE results from the recent assessment of DOE management
- o DOE results from recent TEM Board of Consultants meeting
- o DOE status of response to Nye County concerns on water usage in ESF
- o DOE status of Large Block Test
- o DOE/NRC feedback on any other pending issues

**NRC/DOE VIDEO CONFERENCE AGENDA
EXPLORATORY STUDIES FACILITY**

3E-077 Forrestal Building, 1000 Independence Avenue SW, Washington, DC

Atrium Room, Summerlin, 1551 Hillshire Drive, Las Vegas, NV

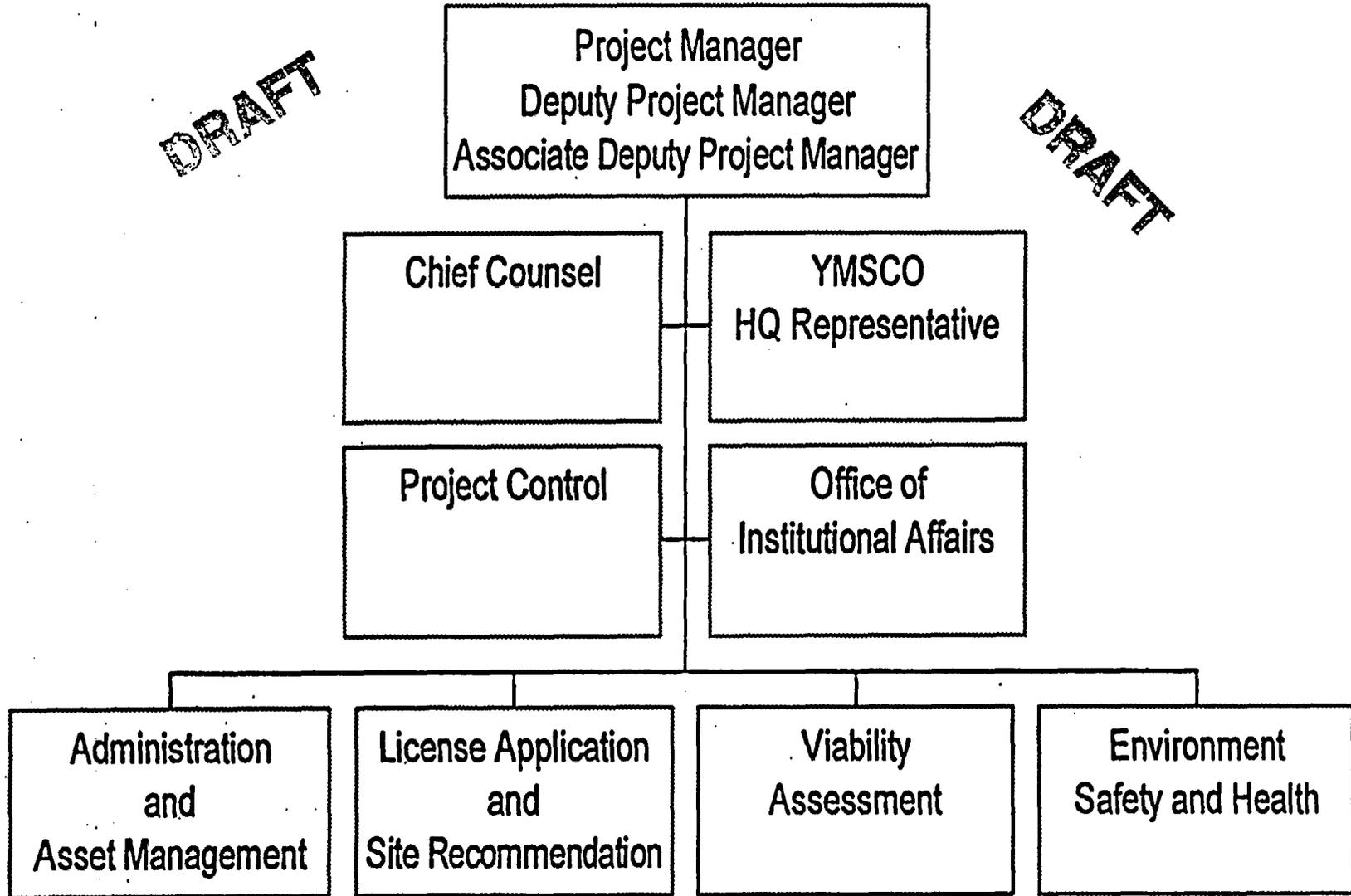
Building 189 Video Conference Center, CNWRA, San Antonio, TX

September 12, 1996

- 12:30 EST (9:30 PST) Opening Remarks DOE, NRC, NV, AULG**
- 12:40 EST (9:40 PST) ESF Construction Update w/status of mapping of the high-density fracture zone DOE**
(Include planned excavation method for thermal tests)
(Include fracture zone effects on drift design)
- 1:30 EST (10:30 PST) ESF Testing Update w/Appendix 7 follow-up DOE**
(Include elevated temperature of planned drift-scale thermal tests)
(Include fracture zone effects on heat distribution and modeling groundwater/reflux flow)
- 2:30 EST (11:30 PST) Break**
- 2:45 EST (11:45 PST) Description and Status of Engineering Design Program . . . DOE**
(Include design process control)
- 3:00 EST (12:00 PST) Overview - SNF Effective Thermal Conductivity DOE**
(Include predicting thermal effects on waste package and EBS)
- 3:45 EST (12:45 PST) Closing Remarks and Discussion DOE, NRC, NV, AULG**
- 4:00 EST (1:10 PST) Adjourn (Next meeting scheduled for 12/16/96)**

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Project Manager (PM) and Deputy Project Manager (DPM)

The office of the PM and DPM is assigned the overall responsibility and authority for the conduct of the work of the Yucca Mountain Project (YMP). The PM directs and manages the YMP to accomplish successfully the goals and objectives of the YMP in compliance with the program objectives established by the Office of Civilian Radioactive Waste Management (OCRWM). The DPM shares with the full responsibility and authority for the management of YMP.

Associate Deputy Project Manager

Responsible for executing special assignments as directed; provides liaison between YMP and DOE/NV; ensures adequacy in reporting to OCRWM; represents YMP at meetings with external parties as requested; assist with integration, training and team building and ensures that total Quality Management Objectives are met.

Project Control

The Project Control Organization is responsible for monitoring, analyzing and reporting to the Project Manager and key staff on the M&O Contractor's effectiveness in implementing project activities. This organization will provide oversight of a new organization within the M&O that centralizes project planning, cost and schedule control, estimating, participant project control and systems development, operations and maintenance functions.

Chief Counsel

The YMSCO Chief Counsel is responsible for all legal services provided to the Project. The Counsel reports directly to the Project Manager and serves as the YMSCO liaison with the DOE Office of General Counsel and other organizations on all legal matters. The Counsel is responsible for insuring that Project legal activities are consistent with the policies established by the DOE General Counsel.

Office of Institutional Affairs

The Office of Institutional Affairs is responsible for coordination and direction of the Yucca Mountain Project's institutional activities, i.e., liaison and coordination between national, state and local governments, public and private sector organizations, educational institutions, special interest organizations and the media, for the purpose of providing information regarding policy development and implementation, and clarification of the Project's activities.

In addition, the office develops and coordinates all community relations and public involvement activities for the project; prepares and issues public announcements pertaining to the project; and provides advice and assistance to the Director, OCRWM, the Yucca Mountain Project Manager and other senior staff on matters involving institutional and intergovernmental affairs.

DRAFT

Assistant Manager for Administration and Asset Management

The Assistant Manager for Administration and Asset Management manages and establishes policies for procurement, property, information management, safeguards and security, human relations, administrative support and field operations, including operational support requirements for engineering and science. The primary objective of this office is to ensure the application of sound business management and operational principles to provide a disciplined, systematic implementation, review and analysis of management and field functions.

Assistant Manager for Licensing

This organization will produce timely Viability Assessment products (described below) and produce and ensure the timely delivery of a credible and defensible Site Recommendation and License Application by managing all activities directly related, and all cross-cutting activities important to the development of the Viability Assessment, Site Recommendation and the License Application.

The major activities required to develop the prerequisite products include physical characterization of the site, iterative performance assessment, design of both waste package and repository, systems engineering, and construction as necessary to develop both surface and underground test facilities. In addition, matrix support is provided for the NEPA process.

Viability Assessment

This organization will ensure the delivery of an accurate and timely Viability Assessment (VA). The VA will consist of: 1) designs for critical underground features of the repository and for the waste package; 2) an updated total system performance assessment; 3) a license application plan; and 4) repository cost and schedule estimate. The staff will have the responsibility for coordinating the products comprising the VA on schedule. This will include all cross-cutting issues that could have an impact on the VA.

Assistant Manager for Environmental Safety and Health

The Assistant Manager for Environment Safety and Health is responsible for the preparation of an Environmental Impact Statement (EIS); monitoring environmental compliance; developing mitigation plans and strategies; acquisition of permits; environmental field programs; Native American program; and protection of archaeological and cultural resources.

This office also has responsibility for the Safety and Health Program which includes development of policy, guidance and compliance monitoring.