



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 98608
Las Vegas, NV 89193-8608

JUL 06 1994

Daniel A. Dreyfus, Director, Civilian Radioactive Waste
Management, HQ (RW-1) FORS

YUCCA MOUNTAIN SITE CHARACTERIZATION OFFICE WEEKLY HIGHLIGHTS FOR
THE WEEK ENDING JUNE 24, 1994 (SCPB: N/A)

I. FORECAST SIGNIFICANT EVENTS

Suitability and Licensing

The topical report entitled "Methodology to Assess Fault Displacement and Vibratory Ground Motion Hazards at Yucca Mountain" will be forwarded to U.S. Department of Energy/Headquarters during the week of June 27, 1994, for distribution to the U.S. Nuclear Regulatory Commission. This is the first of three topical reports that will document the U.S. Department of Energy's position on seismic hazards and pursue formal resolution with U.S. Nuclear Regulatory Commission staff. Seismic hazards have an impact on preclosure repository design and postclosure performance assessment.

Site Characterization Testing

Drilling will continue at SD-9 and SD-12 boreholes. Sample collection will continue at the Fran Ridge test block. Borehole workovers in preparation for testing may begin. Trench excavation will begin across the Ghost Dance fault on Whaleback Ridge. Additional earth work is scheduled in existing Trenches T-4 in Split Wash and T-2 in Drill Hole Wash to support the Quaternary faulting study.

Exploratory Studies Facility

Continue two shift, six days-a-week assembly operations of the tunnel boring machine.

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Design

Complete comment resolution and incorporation of comment resolutions for Design Package 2C. Submit the Design Package 2C update to the Basis for Design document for baselining by the Civilian Radioactive Waste Management System Management and Operating Contractor Change Control Board. Begin verification of the Design Package 2C drawings and specifications.

II. CRITICAL ITEM STATUS - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECTYucca Mountain Site Characterization Office

Completed a three-day interactive review of Site Characterization Progress Report Number 10 in Las Vegas, Nevada. Representatives from the Yucca Mountain Site Characterization Project participants, Yucca Mountain Site Characterization Office, and U.S. Department of Energy/Headquarters met with the Civilian Radioactive Waste Management System Management and Operating Contractor Progress Report coordinator to reach agreement on the final content for Progress Report Number 10. The camera-ready concurrence copy is scheduled for delivery to the U.S. Department of Energy/Headquarters on July 25, 1994.

Construction

Regarding Job Package 92-20, Exploratory Studies Facility North Portal Pad and Facilities, continued two shift, six days-a-week assembly operations of the tunnel boring machine including: wiring of operator's console, electric drive motors, and electrical deck 1. Continued welding cutter head segments and installing thrust cylinders and positioning cylinders for the left gripper shoe assembly and hydraulic/lube circuits.

The following milestone represents the near-term plan for Exploratory Studies Facility activities: Commence tunnel boring machine operations on August 8, 1994.

Completed forming and placement of concrete for invert slab and tunnel boring machine cradle in the starter tunnel. Began forming and placement of starter tunnel wall concrete (stub walls for gripper pads).

Completed final grading and backfilling in the box cut area in preparation for extending the tunnel boring machine runway to the starter tunnel portal. Placed concrete for the tunnel boring machine runway near the tunnel portal.

Continued construction of the subsurface waste water, sanitary sewer, and fire/potable water lines on the North Portal Pad.

Continued backfilling the water line trench along H Road.

Completed construction on the duct bank in the vicinity of the starter tunnel portal. Backfilling the duct bank trenches and pulling wire.

Design

Continued comment resolution and incorporation of comment resolutions for Design Package 2C. Preparing the update to the Basis for Design document to incorporate Design Package 2C. Continuing design activities for Design Packages 1D, 8A, and the Integrated Data and Control System.

Site Characterization Testing

Exploratory drilling operations progress is summarized as follows:

<u>Borehole</u>	<u>Current Core Depth 6/24/94</u>	<u>Current Ream Depth 6/24/94</u>	<u>Total Planned Depth</u>
SD-9	380.5 meters (,1248.5 feet)		646.2 meters (2,120 feet)
SD-12	311.1 meters (1,020.8 feet)	311.1 meters (1,020.7 feet)	701.04 meters (2,300 feet)

Regarding Job Package 94-04, SD-12 Borehole, the bottom of the borehole is presently in the Topopah Springs (TSw₂) unit.

Regarding Job Package 94-06, SD-9 Borehole, current drilling is in the Topopah Springs (TSw₂) member.

Completed eight sample examinations at the Sample Management Facility for U.S. Geological Survey and Sandia National Laboratories.

Core and cuttings were processed from drilling activities. Created 415 specimens from core samples for analysis by Principal Investigators. Accepted six soil samples collected by the Technical and Management Support Services Radiological/Environmental Field Program Department.

The following is a listing of site characterization field activities that are currently active:

SITE CHARACTERIZATION PLAN ACTIVITY	TITLE	COMMENTS
8.3.1.3.2.1	Mineralogy, Petrology & Rock Chemistry of Transport Pathways	Exploratory Studies Facility sampling
8.3.1.3.2.2	Mineralogic & Geochemical Alteration	Exploratory Studies Facility sampling
8.3.1.4.2.1	Characterization of Vertical/Lateral Distribution of Stratigraphic Units in Site Area	Ongoing core logging
8.3.1.4.2.2	Structural Features within Site Area	Surface and Exploratory Studies Facility mapping
8.3.1.4.3.1	Systematic Acquisition of Site Specific Subsurface Information	Systematic drilling/testing
8.3.1.8.5.1	Characterization of Volcanic Features	Test pits, trenching
8.3.1.14.2	Soil & Rock Properties of Potential Location of Surface Facilities	Trenching and ramp exploration holes
8.3.1.17.4.2	Location & Recency of Faulting Near Prospective Surface Facilities	Trench logging
8.3.1.17.4.3	Quaternary Faulting within 100 km of Yucca Mountain	Surface mapping
8.3.1.17.4.4	Quaternary Faulting in NE-Trending Fault Zones	Surface mapping
8.3.1.17.4.6	Quaternary Faulting within Site Area	Trench logging
8.3.1.2.1.1	Precipitation & Meteorological Monitoring for Regional Hydrology	Ongoing measurements
8.3.1.2.1.2	Runoff & Streamflow	Ongoing measurements
8.3.1.2.1.3	Regional Groundwater Flow System	Ongoing monitoring
8.3.1.2.2.1	Unsaturated Zone Infiltration	Logging of neutron-access holes; ponding tests
8.3.1.2.2.2	Water Movement Tracer Tests	C1-36 measurements (surface-based testing drillholes, Exploratory Studies Facility)
8.3.1.2.2.3	Percolation in the Unsaturated Zone	Unsaturated zone drilling/testing
8.3.1.2.2.4	Characterization of Unsaturated Zone (Exploratory Studies Facility)	Hydrochemistry/radial boreholes testing
8.3.1.2.2.6	Gaseous Phase Movement in Unsaturated Zone	Unsaturated Zone drilling/testing
8.3.1.2.2.7	Unsaturated Zone Hydrochemistry	Unsaturated Zone drilling/testing
8.3.1.2.3.1	Site Saturated Zone Groundwater Flow System	Ongoing monitoring, C-Well testing
8.3.1.2.3.2	Saturated Zone Hydrochemistry	Ongoing monitoring
8.3.1.15.1.8	In Situ Design Verification	Construction monitoring/testing
8.3.4.2.4.4	Engineered Barrier System Field Test	Preparation of Fran Ridge Test Block

Large Block Test

Excavating of the country rock around the Large Block to a 10-foot depth was completed and sample collection began.

Site Characterization Plan/Study Plan Status

One Study Plan, 8.3.1.15.2.2 "Characterization of Site Ambient Thermal Conditions" was approved by the Yucca Mountain Site Characterization Office.

STUDY PLAN BREAKDOWN

	Initial Plans	Major Revisions
Not Submitted to Yucca Mountain Site		
Characterization Office	32	0
In Screening Review	0	0
In Yucca Mountain Site		
Characterization Office Review	2	2
Awaiting Comment Resolution	3	4
In Verification Audit	6	0
Awaiting Yucca Mountain Site		
Characterization Office Approval	0	0
Awaiting Submission to		
U.S. Nuclear Regulatory Commission...	2	1
Awaiting U.S. Nuclear Regulatory		
Commission Initial Review	9	6
Accepted by U.S. Nuclear Regulatory		
Commission	50	6
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Totals	104	19
Total Submitted to U.S. Nuclear		
Regulatory Commission	59	12

State of Nevada Comments Status:

Received Comments from the State of Nevada..... 32
 Responses Transmitted to the State of Nevada 29

U.S. Nuclear Regulatory Commission Comments Status:

Received Comments from U.S. Nuclear Regulatory
 Commission 32
 Responses Transmitted from U.S. Department of Energy
 to U.S. Nuclear Regulatory Commission..... 28

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Environmental Safety and Health Programs

Twenty-five environmental compliance and safety surveillances were conducted at the Yucca Mountain, Nevada, site ensuring compliance with permit and programmatic requirements.

III. GENERAL INFORMATION ITEMS

To support the Proposed Planning Program for a 2001 license application, Los Alamos National Laboratory revised criteria statements for Level 2 milestones and submitted them to the Yucca Mountain Site Characterization Office.

Los Alamos National Laboratory staff continued presentation preparations for the Nuclear Waste Technical Review Board full board meeting scheduled for July 1994.

Los Alamos National Laboratory completed a review of Study Plan 8.3.4.2.4.5, "Characterization of the Effects of Man-Made Materials on Chemical and Mineralogical Changes in the Post-Emplacement Environment," Section 2.2.2.

Los Alamos National Laboratory Volcanism staff collected samples for geochemistry at the Paxton Springs volcano in the Zuni-Bandera volcanic field of western New Mexico. Because there is evidence of polycyclic volcanism at Paxton Springs, they are studying it as an analog to the Lathrop Wells volcanic center located near Yucca Mountain.

Los Alamos National Laboratory completed thermogravimetric experiments on potassium- and sodium-exchanged clinoptilolite. The experiments for both zeolites consisted of equilibration measurements at six temperatures between room temperature and 200 degrees Celsius at approximately eleven different partial pressures of water. They also completed the preparation of a set of cation-exchanged clinoptilolites that included sodium, calcium, and magnesium end-members in addition to the potassium end-member used in experiments mentioned previously. Also began the installation of a new computer-controlled method of delivering controlled-humidity gas to the thermal analysis equipment.

Los Alamos National Laboratory Mineralogy-Petrology staff submitted dust samples for size fractionation and X-ray diffraction analysis. These samples were taken from sites at and near Yucca Mountain and will be used to evaluate the potential impact of operations on the mineral content of aeolian dusts. These dusts will also be used to monitor iron input into near-surface environments due to aeolian sources.

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Technical and Management Support Services reviewed the Determination of Importance Evaluation for USW SD-7 borehole access road and pad, and modified the Functional Requirements Document to incorporate additional requirements.

IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

General Yucca Mountain Site Characterization Project overviews, with emphasis on transportation, were given on June 21, 1994, to 50 guests of the Elko Lions' Club, in Elko, Nevada; and on June 23, 1994, to 40 guests of the Institute of Transportation Engineers in Las Vegas.

A presentation on Yucca Mountain Site Characterization Project plans for fiscal year 1995 was given to 50 members and guests of the American Nuclear Society, Nevada Chapter, on June 23, 1994, in Las Vegas.

The Yucca Mountain Speaker Series, "Take a Walk Through Nevada History," was presented at the Las Vegas Yucca Mountain Science Center on June 21, 1994. "Take a Hike with a Geologist," was presented at the Pahrump Yucca Mountain Science Center on June 26, 1994. Approximately 70 people attended these presentations.

Yucca Mountain Site Characterization Project staff presented a Teachers' Workshop on American Indian culture on June 24, 1994, in Palo Verde, Arizona.

An educational presentation on "Yucca Mountain Johnny" was given to 84 students at C. C. Ronnow Elementary School in Las Vegas, June 20, 1994.

Fifty fifth-grade students from John F. Mendoza Elementary School toured the Las Vegas Yucca Mountain Science Center and attended a presentation on geology on June 21, 1994.

A Public Open House tour of Yucca Mountain was coordinated and conducted on June 22, 1994, for approximately 125 people. Tour participants visited both of the Yucca Mountain Science Centers, the Field Operations Center, two laboratories, the top of Yucca Mountain, and the Exploratory Studies Facility North Portal where the tunnel boring machine is being assembled.

Yucca Mountain tours were conducted for three guests from Babcock and Wilcox on June 21; for 25 guests from the U.S. Department of Energy Waste Acceptance Technical Review Group on June 22; for 35 guests from the Study Committee on June 23; and for 10 guests from the Nye County Nuclear Waste Repository Office on June 23, 1994.

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The Yucca Mountain Site Characterization Project exhibits were set up and staffed for the American Nuclear Society in New Orleans, Louisiana, June 19-22, 1994. Approximately 300 people visited the displays.

Yucca Mountain Site Characterization Project staff completed 30 external information requests. This was accomplished by providing written responses to both written and verbal queries and/or by supplying existing literature.

V. UPCOMING EVENTS CALENDAR

Please note that the usage of "(P)" in the calendar indicates that the event is open to the public. Educational presentations and State and Public Interactions are coordinated by the Speakers Bureau; contact Lawrence Weekly at (702) 794-7896 for additional information. Exhibits are coordinated by Joanna Magruder at (702) 794-7056; Neighborhood Dialogues are coordinated by Lawrence Weekly at (702) 794-7896; and Tours are coordinated by Carleen Hill at (702) 794-7375.

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Yucca Mountain Site Characterization Project Contact</u>
A.	<u>Stakeholders' Meetings</u>		
	No significant meetings to report.		
B.	<u>U.S. Department of Energy/Headquarters Meetings</u>		
	No significant meetings to report.		
C.	<u>Civilian Radioactive Waste Management System Management and Operating Contractor/U.S. Department of Energy Meetings</u>		
Wednesday, July 6	Civilian Radioactive Waste Management System Management and Operating Contractor - Program Management Review (P)	Video- conference	R. Nelson
D.	<u>Internal and U.S. Department of Energy/Nevada Operations Office (NV) Meetings</u>		
	No significant meetings to report.		
E.	<u>U.S. Nuclear Regulatory Commission Interactions</u>		
Tuesday, July 26	Bimonthly DOE/NRC Manager's Meeting	Rockville, MD	T. Bjerstedt

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Project Contact</u>
F. <u>Nuclear Waste Technical Review Board Interactions</u>			
Tuesday- Wednesday July 12-13	Nuclear Waste Technical Review Board Full Board Meeting	Denver, CO	C. Newbury
G. <u>Advisory Committee on Nuclear Waste Interactions</u>			
Wednesday- Thursday, June 29-30	65th Advisory Committee on Nuclear Waste Meeting on Topics (TBD) (P)	Bethesda, MD	A. Gil
H. <u>National Academy of Sciences Interactions</u>			
No significant interactions to report.			
<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u>			
Sunday, June 26	Yucca Mountain Speaker Series - "Take a Hike With a Geologist" (P)	Pahrump, NV	J. Peck
Tuesday, July 12	First International Congress on Environmental Geotechnics - Status of the Yucca Mountain Site Characterization Program	Alberta, Canada	J. Peck
J. <u>Educational Interactions</u>			
Tuesday, June 28	Hewetson Elementary School - "Yucca Mountain Johnny"	Las Vegas, NV	J. Hartley
Wednesday, June 29	4-H T.E.C. - Paleontology	Las Vegas, NV	A. Gil
Tuesday, July 5	Robinson Community School - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, July 13	4-H T.E.C. - Native American Culture	Las Vegas, NV	R. Arnold

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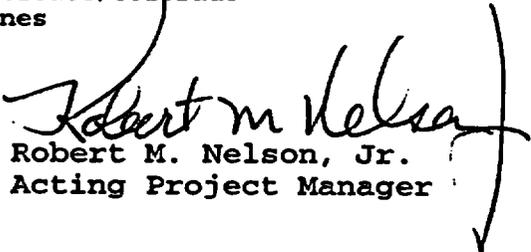
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<u>Date</u>	<u>Event</u>	<u>Location</u>
K. <u>Exhibits Scheduled</u>		
Friday-Sunday, July 15-17	Mining Days	Battle Mountain, NV

<u>Date</u>	<u>Event</u>	<u>Escorts</u>
L. <u>Tours Scheduled</u>		
Wednesday, July 6	Yucca Mountain Site Characterization Project Orientation	TBD
Wednesday, July 6	Inyo County	TBD
Thursday, July 7	TRW	TBD
Thursday, July 7	University of Georgia	TBD
Thursday, July 7	British Broadcasting Corporation	TBD
Tuesday, July 12	Echo Bay	TBD
Wednesday, July 13	NV High-Level Waste Committee	TBD
Thursday, July 14	Nuclear Advocate	TBD
Friday, July 15	Energy and Minerals Field Institute/Colorado School Mines	TBD

AMSL:CLH-4076


Robert M. Nelson, Jr.
Acting Project Manager