

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

JUL 11 1994

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

YUCCA MOUNTAIN SITE CHARACTERIZATION OFFICE WEEKLY HIGHLIGHTS FOR
THE WEEK ENDING JULY 1, 1994 (SCPB. N/A)

I. FORECAST SIGNIFICANT EVENTS

Suitability and Licensing

Responses to comments received on Site Characterization Progress Report 10 during the Interactive Project Participant/Headquarters review have been compiled and incorporated into a revised document now being edited and word processed. The Progress Report has been significantly enhanced as a result of this interactive review. Concurrence copy of the Progress Report will be provided to Assistant Managers on July 18, 1994, for their final go-no go check prior to forwarding document to the Office of Civilian Radioactive Waste Management on July 25, 1994.

Site Characterization Testing

Drilling will continue at the SD-12 and SD-9 boreholes. Sample collection will continue at the Fran Ridge test block. Borehole workovers in preparation for testing may begin. Cleaning of the Ghost Dance Fault trenches to prepare them for logging may begin. Air permeability testing will begin in Borehole UE-25 NRG-7/7A.

Exploratory Studies Facility

Continued two shift, six days-a-week assembly operations of the tunnel boring machine. Assembly operations included completing installation of cutter head, continuing wiring of power and control systems on all five cars, and continued welding cutter head segments and installing hydraulic/lube circuits.

No construction or assembly work will be performed July 2-4, 1994, at the Yucca Mountain, Nevada, site due to the Independence Day holiday weekend. Resume two shift, six days-a-week assembly of the tunnel boring machine on July 5, 1994.

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Design

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. Continue verification of Design Package 2C drawings and specifications. Complete comment resolution and continue comment incorporation into the design documentation for the Integrated Data and Control System. Continue design activities for Design Packages 1D and 8A.

II. CRITICAL ITEM STATUS - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

Yucca Mountain Site Characterization Office

Suitability and Licensing

Participated in a teleconference with the U.S. Nuclear Regulatory Commission to develop the final agenda for the Exploratory Studies Facility Technical Meeting to be held July 27, 1994. Agenda items include a discussion of the Repository/Exploratory Studies Facility interface.

Provided comments to the U.S. Department of Energy/Headquarters on a draft letter from Daniel A. Dreyfus to Thomas P. Grumbly, Assistant Secretary for Environmental Management. The letter recommends formation of a steering group to develop a mutually-acceptable approach to resolve issues concerning Reactor Irradiated Nuclear Material destined for deep geologic disposal. Comments from the Yucca Mountain Site Characterization Office emphasized potential impacts on the regulatory process which could prevent timely implementation of the Nuclear Waste Policy Act.

Construction

Continued forming for gripper pads on the starter tunnel walls. Completed pour of invert gripper pad.

Completed forming and placement of last segment of concrete for the tunnel boring machine runway at the starter tunnel portal.

Continued work on muck car dump with the placement of the first lift of concrete in the muck chute.

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

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Poured part of the raceway trench floor in the switchgear building.

The following milestone represents the near-term plan for Exploratory Studies Facility activities:

Begin tunnel boring machine operations on August 8, 1994.

Site Characterization Testing

Exploratory drilling operations progress is summarized as follows:

<u>Borehole</u>	<u>Current Core Depth 07/01/94</u>	<u>Current Ream Depth 07/01/94</u>	<u>Total Planned Depth</u>
SD-9	422.0 meters (1,384.4 feet)		646.2 meters (2,120 feet)
SD-12	324.8 meters (1,065.7 feet)	323.8 meters (1,062.2 feet)	701.04 meters (2,300 feet)

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

Regarding Job Package 94-06, SD-9 borehole, current drilling is in the Vitrophyre of the Topopah Spring (TSw₁) member.

Regarding Job Package 93-15, borehole NRG-7/7A, hydrochemistry testing is in progress.

Completed borehole prognosis for USW NRG-3.

Regarding Ghost Dance Fault trenches: Trench GDF-T1 was excavated on Whaleback Ridge. Trench T-2 in Drill Hole Wash was scraped and cleaned for relogging. Trench T-4 in Split Wash was deepened, but did not reach bedrock. A new trench was excavated in the vicinity of Trench T-4 and the new trench did reach bedrock. The above trenches will require cleaning prior to mapping.

Completed 15 sample examinations at the Sample Management Facility for U.S. Geological Survey and Sandia National Laboratories.

Core and cuttings were processed from drilling activities. Accepted six soil samples collected by the Technical and Management Support Services Radiological/Environmental Field Programs Department.

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

SITE CHARACTERIZATION PLAN ACTIVITY	TITLE	COMMENTS
H.3.1.3.2.1	Mineralogy, Petrology & Rock Chemistry of Transport Pathways	Exploratory Studies Facility sampling
H.3.1.3.2.2	Mineralogic & Geochemical Alteration	Exploratory Studies Facility sampling
H.3.1.4.2.1	Characterization of Vertical/Lateral Distribution of Stratigraphic Units in Site Area	Ongoing core logging
H.3.1.4.2.2	Structural Features within Site Area	Surface and Exploratory Studies Facility mapping
H.3.1.4.3.1	Systematic Acquisition of Site Specific Subsurface Information	Systematic drilling/testing
H.3.1.8.5.1	Characterization of Volcanic Features	Test pits, trenching
H.3.1.14.2	Soil & Rock Properties of Potential Location of Surface Facilities	Trenching and ramp exploration holes
H.3.1.17.4.1	Location & Recency of Faulting Near Prospective Surface Facilities	Trench logging
H.3.1.17.4.3	Quaternary Faulting within 100 km of Yucca Mountain	Surface mapping
H.3.1.17.4.4	Quaternary Faulting in NE-Trending Fault Zones	Surface mapping
H.3.1.17.4.6	Quaternary Faulting within Site Area	Trench logging
H.3.1.2.1.1	Precipitation & Meteorological Monitoring for Regional Hydrology	Ongoing measurements
H.3.1.2.1.2	Runoff & Streamflow	Ongoing measurements
H.3.1.2.1.3	Regional Groundwater Flow System	Ongoing monitoring
H.3.1.2.2.1	Unsaturated Zone Infiltration	Logging of neutron-access holes; ponding tests
H.3.1.2.2.2	Water Movement Tracer Tests	Cl-36 measurements (surface-based testing drillholes, Exploratory Studies Facility)
H.3.1.2.2.3	Percolation in the Unsaturated Zone	Unsaturated zone drilling/testing
H.3.1.2.2.4	Characterization of Unsaturated Zone (Exploratory Studies Facility)	Hydrochemistry/radial boreholes testing
H.3.1.2.2.6	Gaseous Phase Movement in Unsaturated Zone	Unsaturated Zone drilling/testing
H.3.1.2.2.7	Unsaturated Zone Hydrochemistry	Unsaturated Zone drilling/testing
H.3.1.2.3.1	Site Saturated Zone Groundwater Flow System	Ongoing monitoring, C-Well testing
H.3.1.2.3.2	Saturated Zone Hydrochemistry	Ongoing monitoring
H.3.1.15.1.8	In Situ Design Verification	Construction monitoring/testing
H.3.4.2.4.4	Engineered Barrier System Field Test	Preparation of Fran Ridge Test Block

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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

No study plans were 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	1
Awaiting Comment Resolution	3	5
In Verification Audit	6	0
Awaiting Yucca Mountain Site		
Characterization Office Approval	0	0
Awaiting Submission to		
U.S. Nuclear Regulatory Commission...	2	0
Awaiting U.S. Nuclear Regulatory		
Commission Initial Review	9	7
Accepted by U.S. Nuclear Regulatory		
Commission	50	6
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

Environmental Safety and Health Programs

Nineteen environmental compliance and safety surveillances were conducted at the Yucca Mountain site ensuring compliance with permit and programmatic requirements.

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The Right-of-Way reservation on the Nellis Air Force Range for sight characterization activities was renewed by the Bureau of Land Management.

III. GENERAL INFORMATION ITEMS

Two Los Alamos National Laboratory milestones were submitted to the Yucca Mountain Site Characterization Office: Milestone 3430, "Complexation of Carbonate Species at Goethite Surface: Implications for Adsorption of Metal Ions in Natural Waters;" and Milestone 4031, "Silica Mobility in Devitrified Paintbrush Tuff."

Los Alamos National Laboratory continued revising the report "Petrography, Mineralogy, and Chemistry of Calcite-Silica Deposits at Exile Hill, Nevada, in Comparison with Local Spring Deposits" (Milestone LA3376) following technical review. New element maps were obtained to support these revisions.

Petrographic characterization of microautoradiography samples began. This is a joint effort between the Los Alamos National Laboratory Mineralogy/Petrology and Sorption tasks. The samples presently being studied are those used in plutonium microautoradiography experiments.

Los Alamos National Laboratory set up a particulate sampler in proximity to the bag house of the drill rig at Borehole SD-9 at Yucca Mountain. Collected one silver filter over a 24-hour period and set up another filter that will be run for several days. They also sampled the cuttings from the bag house.

The U.S. Geological Survey project managers and hydrologists participated in a video conference with the director of the Office of Civilian Radioactive Waste Management to discuss scientific issues related to hydrologic investigations at Yucca Mountain.

Regarding studies of rock characteristics, U.S. Geological Survey and Los Alamos National Laboratory scientists collected systematic samples for isotope geochemistry and radiometric dating from the vertical rock cut exposure on the USW NRG-5 drill pad. A drilling prognosis for the stratigraphy in Boreholes USW SD-12, USW SD-9, and USW SD-7 was supplied to the U.S. Department of Energy field test coordinator by the U.S. Geological Survey based on lithostratigraphy from the LYNX computer model.

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Regarding tectonics, U.S. Geological Survey personnel were on site to direct the construction of a new trench across the Ghost Dance Fault on top of Whaleback Ridge, and to oversee the renovation and deepening of two older Ghost Dance Fault trenches in Split Wash and Drillhole Wash. Work also resumed on geologic mapping in the trench across the Paintbrush Canyon Fault at Alice Ridge.

Regarding saturated zone studies, U.S. Geological Survey personnel replaced downhole instrumentation in Boreholes USW H 5 and USW H-6 and performed water level measurements in deep boreholes in Crater Flats.

Regarding unsaturated zone studies, U.S. Geological Survey hydrologists participated in the systematic sample collection work at Borehole USW NRG-5. Gas samples for chemical analysis were collected from Borehole USW NRG-7/7A prior to the air permeability testing, which is expected to start next week.

U.S. Geological Survey personnel also performed routine neutron moisture logging in shallow boreholes and checked for the possible presence of perched water in USW SD-9 and USW SD-12 drill holes. No mobile water was found in either borehole.

Regarding surface runoff studies, U.S. Geological Survey Water Resources Division personnel were on site to maintain stream gaging stations and precipitation monitoring instruments on and around Yucca Mountain.

A full scope U.S. Department of Energy technical audit of the U.S. Geological Survey quality assurance program took place in Denver, Colorado, last week. Selected technical activities in the tectonics and Rock Characteristics programs were also audited.

The U.S. Geological Survey Local Records Center staff identified improvements for the daily handling of records as a result of suggestions received during the U.S. Department of Energy technical audit last week.

Technical and Management Support Services reviewed Job Package 94-08, "SD-7 Borehole Access Road and Pad," completed modifications, and submitted to the Site Manager for approval and distribution.

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Suitability and Licensing attended the 65th Advisory Committee on Nuclear Waste meeting in Bethesda, Maryland, June 29-30, 1994. The U.S. Nuclear Regulatory Commission staff presented its latest version of the proposed rule on design basis events and the definition of important to safety. The latest version includes a definition of important to safety that is similar to the current version in 10 CFR Part 60. The Advisory Committee on Nuclear Waste discussed its future plans which include a site tour; forming a working group on age dating ground water; and meeting in Las Vegas on October 17-20, 1994.

IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

An educational presentation on "Yucca Mountain Johnny" was given to 60 students at Hewetson Elementary School in Las Vegas on June 28, 1994. An educational presentation on paleontology was also given to 12 members of the University of Nevada Reno's 4-H T.E.C. program, on June 29, 1994, at the Las Vegas Yucca Mountain Science Center.

Staff completed 27 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; 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

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			Yucca Mountain Site Characterization Project Contact
<u>Date</u>	<u>Event</u>	<u>Location</u>	
D. <u>Internal and U.S. Department of Energy/Nevada Operations Office (NV) Meetings</u>			
Wednesday, July 20	NV Manager's Monthly Program Review	Las Vegas, NV	R. Nelson
E. <u>U.S. Nuclear Regulatory Commission Interactions</u>			
Tuesday, July 26	Bimonthly DOE/NRC Manager's Meeting	Rockville, MD	T. Bjerstedt
Wednesday, July 27	Update of the Exploratory Studies Facility Activities - Design and Construction	Rockville, MD	T. Bjerstedt
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>			
No significant interactions to report.			
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>			
Tuesday, July 12	First International Congress on Environmental Geotechnics - Status of the Yucca Mountain Site Characterization Program	Alberta, Canada	J. Peck
Tuesday, July 26	Yucca Mountain Speaker Series - "Rain or Shine, Have We Got Weather for You" (P)	Las Vegas, NV	D. Ambos
J. <u>Educational Interactions</u>			
Tuesday, July 5	Robinson Community School - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, July 6	LaPetite Academy - Cultural, Environment, and Native American History	Las Vegas, NV	R. Arnold

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
J. <u>Educational Interactions</u> (continued)			
Wednesday, July 13	4-H T.E.C. - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, July 27	4-H T.E.C. - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Saturday, July 30	Visions in Culture - American Indian People of Southern Nevada	Las Vegas, NV	R. Arnold M. d'Ouville J. Sizemore

<u>Date</u>	<u>Event</u>	<u>Location</u>
K. <u>Exhibits Scheduled</u>		
Friday- Sunday, July 15-17	Mining Days	Battle Mountain, NV
Saturday, July 23	Yucca Mountain Open House and Tour	Las Vegas, 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 Environmental Safety Systems, Inc.	TBD
Thursday, July 7	University of Georgia	TBD
Thursday, July 7	British Broadcasting Corporation	TBD
Tuesday, July 12	Echo Bay	TBD
Wednesday, July 13	Nevada High-Level Waste Committee	TBD
Thursday, July 14	Nuclear Advocate	TBD
Friday, July 15	Energy Resource Laboratories - Taiwan	TBD
Friday, July 15	Energy and Minerals Field Institute/Colorado School of Mines	TBD


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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
I. <u>Tours Scheduled</u> (continued)		
Wednesday, July 20	Inyo County	TBD
Thursday, July 21	Study Committee	TBD
Thursday, July 21	National Congress of American Indians	TBD
Saturday, July 23	Public Open House (P)	Various Escorts
Wednesday, July 27	International Accelerator Transmutation of Waste Conference	TBD

AMSL CLH-4174


Robert M. Nelson, Jr.
Acting Project Manager