



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

Reply to:  
301 E. Stewart Ave., #203  
Las Vegas, NV 89101

Tel: (702) 388-6125

TO: Joseph Holonich, Director, HLPD, M/S 4 H 3

FROM: Sr. On-Site Licensing Representatives' Office, Las Vegas

DATE: February 1, 1994

SUBJECT: OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE  
WEEK ENDING JANUARY 7, 1994 and YUCCA MOUNTAIN SITE OFFICE  
(YMSO) ACTIVITY REPORT FROM 1/1/94 TO 1/14/94

Please find enclosed the above-referenced information. There is nothing requiring specific management attention.

cc: w/enc.: Charlotte Abrams, M/S 4 H 3  
Anne Garcia, M/S 4 H 3

Enclosures as stated

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## DEPARTMENT OF ENERGY

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

WBS 1.2.9.2  
QA: N/A

JAN 27 1994

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

OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING  
JANUARY 7, 1994 (SCP: N/A)

### I. FORECAST SIGNIFICANT EVENTS

#### Site Characterization Activities

##### Exploratory Studies Facility (ESF)

Design activities will continue on Package 2A with submittal of the drawings and specifications to the Yucca Mountain Site Characterization Project (YMP) Change Control Board (CCB) for baselining. Comment resolution will begin for Design Package 2B. Package 1C will be distributed for review in preparation for the 90 percent design review meeting on this package in late January 1994. Design activities for Packages 1D and 2C will continue.

Construction will continue on the 69kV power distribution system with the continuation of trenching for duct banks on the pad and modification of conduit configuration for the 69kV substation on the North Portal Pad.

Begin rework of Canyon Substation and modification to switchgear at the substation.

Continue placement of bedding sand in the trench, installation of the pipe and backfilling (center loading) the trench for the water line between Well J-13 and the booster pump station. Complete removal of topsoil and continue rough grading for water line from H Road to the top of Exile Hill.

##### Surface-Based Testing (SBT)

Drilling will continue at NRG-7/7A. The LM-300 drilling rig will be moved from the UZ-14 drill site to the USW SD-12 site. Testing will begin in the ESF test alcove. The packer installation in C#1 (the final hole) will continue. Testing and auger hole drilling are planned for NRT-1. Directional surveys are scheduled for the NRG holes and WT-2.

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II. CRITICAL ITEM STATUS - YMP

A. Site Characterization Activities

ESF

Construction

On job package (JP) 92-20, ESF North Portal Pad and Facilities, the placement and compaction of the sand bedding in the water line trench continues. Crews are presently installing the new eight-inch PVC pipe. The road from the pump station to the water tank on Exile Hill is being constructed. Fibercreting has been completed and an additional ventilation duct installed in the test alcove. Footings are being surveyed for the concrete batch plant. Preparation began for excavation of the switchgear building foundation at the North Portal.

The face of the test alcove remains at 27.4 meters (00+90 feet), measured from the centerline of the starter tunnel.

Completed cleaning of walls and shotcreting in test alcove.

Rock support for the test alcove, consisting of splitsets, wire mesh, and shotcrete, was placed in the alcove.

Construction is continuing on the 69kV power distribution system with trenching for the duct banks on the pad. Began modification of conduit configuration for the 69kV substation on the North Portal Pad.

Began placing backfill (center loading) in water line trench between Well J-13 and the Booster Pump Station. Began rough grading and removing of topsoil for water line from H Road to the top of Exile Hill.

The following milestone represents the near-term plan for ESF activities:

69kVA power available  
at the North Portal

February 14, 1994

Design

Design activities continued on Packages 1B and 2A. Completed baselining of Package 1B by the YMP CCB and issued drawings and specifications to the field. Completing U.S. Department of Energy (DOE) Acceptance Review of Package 2A drawings and specifications. Conducted 90 percent review meeting for Package 2B. Completed design activities for Package 1C. Continuing design activities for Packages 1D and 2C.

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SBT

Exploratory drilling operations progress is summarized as follows:

<u>Borehole</u>	<u>Current Core Depth 01/07/94</u>	<u>Current Ream Depth 01/07/94</u>	<u>Total Planned Depth</u>
UZ-14	1,442.1 feet	1,421.6 feet	2,000 feet
NRG-7/7A	1,008.2 feet	302.1 feet	1,445 feet

On NRG-7/7A, a deviation survey was conducted at 890 feet. The Drilling Support staff sampled and processed core from 878.1 feet to 1008.2 feet, as of January 6, 1994.

On UZ-14, a packer was installed at 1,315.2 to 1,318.2 feet to prevent water seepage from above this depth entering the hole. The LM-300 drilling rig is now being moved off of the hole; a different rig will be moved on to deepen the hole to its planned depth.

On JP 92-3, UZ-16, air permeability testing continues.

On C-Hole Complex Multiple-Well Hydraulic Interference Testing, Phase I, packer installations were completed in UE-25 C#2 and C#3. Installation of packers in C#1 is scheduled for next week.

On JP 94-02, Trenching on the West Side of Exile Hill, excavation of the trench to uncover and test the nonlithified tuff materials is complete. Trench NRT-1 has been excavated to its second-phase depth (22 feet). Cone, plate load, and other testing is in progress.

On JP 93-13, SD-12 Drill Pad and Access Road, the pad is ready for occupancy by the LM-300 drill rig.

Created approximately 91 specimens from core samples for analysis by Principal Investigators (PI).

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

<u>SCP ACTIVITY</u>	<u>TITLE</u>	<u>COMMENTS</u>
8.3.1.3.2.1	Mineralogy, Petrology & Rock Chemistry of Transport Pathways	Outcrop sampling
8.3.1.3.2.2	Mineralogic & Geochemical Alteration	Outcrop sampling
8.3.1.4.2.2	Structural Features within Site Area	Surface mapping, ESF mapping
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	Test pits, trenching, ramp exploration holes
8.3.1.17.4.2	Location & Recency of Faulting Near Prospective Surface Facilities	Trench mapping
8.3.1.17.4.3	Quaternary Faulting within 100 km of Yucca Mountain, Nevada	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 mapping

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SCP ACTIVITY	TITLE	COMMENTS
8.3.1.2.1.1	Precipitation & Meteorological Monitoring for Regional Hydrology	Ongoing measurements
8.3.1.2.1.2	Runoff & Streamflow	Ongoing measurements
8.3.1.2.2.1	Unsaturated Zone Infiltration	Drilling/logging of neutron-access holes; ponding tests
8.3.1.2.2.2	Water Movement Tracer Tests	C1-36 measurements
8.3.1.2.2.3	Percolation in Unsaturated Zone	UZ drilling/testing Perched water testing
8.3.1.2.2.4	Characterization of YM Percolation in UZ-ESF Investigation	Perched water
8.3.1.2.2.6	Gaseous Phase Movement in Unsaturated Zone	UZ drilling/testing
8.3.1.2.2.7	Unsaturated Zone Hydrochemistry	UZ drilling/testing
8.3.1.2.3.1	Site Saturated Zone Groundwater Flow System	Ongoing monitoring
8.3.1.2.3.2	Saturated Zone Hydrochemistry	Ongoing sampling
8.3.1.15.1.8	In Situ Design Verification	Construction monitoring/testing

Environmental Safety and Health Programs

Six environmental compliance surveillances were conducted at the Yucca Mountain, Nevada, site ensuring compliance with permit and programmatic requirements.

Eleven surveillances were conducted by the safety and health department during this reporting period.

Large Block Test

A large rock saw is being assembled on site to make the side cuts of the test block.

Regulatory Interactions

Site Characterization Progress Report (PR)

The PR 9 is in the Office of General Counsel (OGC) awaiting concurrence. As OGC concurrence was scheduled to have been received by December 24, 1993, we are nearly two weeks behind schedule. Full concurrence, including the Secretary's Office, must be received by January 17, 1994, in order to meet the scheduled distribution date of January 31, 1994. Ten days are required for printing and distribution.

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Other Information

Fiscal year (FY) 1994 Annual Technical Implementation Plans for work breakdown structures (WBS) 1.2.3 and 1.2.5 have been received and distributed for Branch Technical Procedure RSE-001 review.

Performance evaluation criteria for the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) are being revised to more closely coincide with key WBS items and to provide for more effective performance evaluations.

Technical Analysis

Performance Assessment (PA) staff completed the Total System Performance Assessment (TSPA)-1993 documentation and delivered it to the Yucca Mountain Site Characterization Project Office (YMPO). This initiated the Technical Analysis Branch (TAB) staff review of the report. The final document will be available in early 1994.

The PA staff completed the waste isolation evaluation of the drilling and testing of Boreholes NRG-8A, NRG-8B, and NRG-8C. They also completed written comments for the 90 percent design review of ESF Design Package 2B, which resulted in 16 editorial and 55 mandatory comments. The major comments addressed the lack of waste isolation evaluations for some facilities, the lack of a basis for the quality assurance (QA) classification in the determination of importance evaluation, the need for means to minimize construction water infiltration into the rocks, and the need for monitoring all components of the underground water budget.

The PA staff completed a review of the revised draft report comparing potential waste isolation impacts of different ESF excavation techniques and returned the report to the authors for additional revisions; attended a meeting to discuss waste isolation evaluation support needed for Advanced Conceptual Design concerning repository elevation and backfill considerations (another meeting is planned next week concerning sealing considerations); and attended a three-day ESF Design Package 2B review meeting and revised comments on that design based on presentations and discussions at that meeting.

The PA staff initiated developing a brief synopsis of the TSPA-93 analyses for input to technical papers to be presented at the Waste Management '94 and International High-Level Radioactive Waste Management (IHLRWM) conferences. Co-authors are Jeremy Boak, TAB Chief, and Holly Dockery, Sandia National Laboratories (SNL).

The PA staff summarized the hypothesis testing sequence needed to differentiate between needed alternative conceptual models for the unsaturated flow domain. The evaluation uses the proposed base line hydrologic cases coming from the YMP Nominal Flow Scenarios in the Presence of a Repository and was found to involve a maximum of 6 flow solutions and 15 comparisons of output results.

The PA staff designed a hydrothermal benchmark problem. Rather than using a homogeneous distribution of waste, this problem considers a typical waste package located within an array of similar waste packages. The objective is twofold. First, it will permit comparison of Lawrence Berkeley Laboratory's TOUGH2 code with Los Alamos National Laboratory's (Los Alamos) Finite Element Heat and Mass (FEHM) code and with other hydrothermal codes within the project. Second, it will provide useful results regarding conditions at the waste package as they relate to parameters such as waste package spacing, infiltration rates, vapor diffusivity, and fracture permeability.

The PA staff completed a waste isolation evaluation on the use of argon and nitrogen gases to inflate packers used in the C-Well drillholes and potential impacts resulting from gas leaks. It was concluded that leaking of argon (which is a Noble, inert gas) below the water table, or nitrogen gas (which comprises approximately 80 percent of the atmosphere) above the water table, is not expected to significantly impact waste isolation.

Site Characterization Plan/Study Plan (SP) Status

No SPs were approved by YMPO this week. Two SPs were resubmitted to YMPO this week: SP 8.3.4.2.4.1, "Characterization of Chemical and Mineralogical Changes in the Post-Emplacement Environment," and SP 8.3.1.5.1.6, "Characterization of Future Regional Climate and Environments."

SP BREAKDOWN

	Initial Plans	Major Revisions
Not Submitted to YMPO .....	35	0
In Screening Review .....	2	0
In YMPO Review .....	1	1
Awaiting Comment Resolution .....	4	2
In Verification Audit .....	5	1
Awaiting YMPO Approval .....	0	0
Awaiting Submission to the U.S. Nuclear Regulatory Commission (NRC) .....	0	0
Awaiting NRC Initial Review .....	8	6
Accepted by NRC .....	49	5
Totals .....	<u>104</u>	<u>15</u>
Total Submitted to NRC .....	57	10

State of Nevada Comments Status:

Received Comments from the State of Nevada.....	25
Responses Transmitted to the State of Nevada.....	19

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NRC Comments Status:

Received Comments from NRC .....	27
Responses Transmitted from DOE to NRC .....	25

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B. Project Planning and Control

Finalized and distributed the Planning and Control System (PACS) System Description YMP/93-05, Revision 1, December 1993.

Completed FY 1993 carryover analysis of participant data in PACS which was augmented by information provided by each participant. Formal correspondence to each major participant (with the exception of U.S. Geological Survey and Raytheon Services Nevada) was drafted on behalf of YMPO to provide guidance relating to the planning and funding of prior year requirements that were reflected in PACS.

Participants were provided with a detailed list delineating each Planning and Scheduling account and its corresponding FY 1994 baseline increase. Participants were advised to reprogram their accounts in accordance with their planned spend rate prior to their December 1993 upload into PACS.

III. GENERAL INFORMATION ITEMS

Check Idaho Data Base: Authority Files have been changed (as requested) to establish OGD facilities and occurrence report data history under Headquarters rather than DOE/Nevada Operations Office.

On WBS 1.2.2.3.1.1 (Waste Form Testing - Spent Fuel), thermogravimetric apparatus tests of spent fuel oxidation are in progress at 255 degrees Celcius (C) to obtain the initial rise-to-plateau part of the oxidation curve and at 270 degrees C to obtain a full oxidation curve. A very flat plateau of >400 hours formed at 270 degrees C. Based on previous data, the next phase transition should occur shortly. Samples from the scoping tests are being prepared for transmission electron microscope and scanning electron microscope analyses.

June Fabryka-Martin and George Zyvolosky presented talks at a meeting of the Los Alamos Hydrology/Hydrogeology Working Group, which includes several Los Alamos scientists involved in environmental restoration research. June Fabryka-Martin's talk, "Distribution of Chlorine-36 in the Unsaturated Zone at Yucca Mountain: An Indicator of Fast Transport Paths," and George Zyvoloski's talk, "Flow and Transport Issues at Yucca Mountain," both emphasized how their results could be applied to problems involving ground water and soil contamination.

David Bish assumed the position of technical coordinator for Los Alamos Mineralogy-Petrology Studies and David Vaniman became the PI for Transport Pathways studies, effective January 1, 1994.

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David Bish of Los Alamos reported that preparations for thermogravimetric experiments on clinoptilolite and mordenite as a function of water vapor pressure were almost complete. Data collection should begin in approximately one week.

The following paper was published and distributed: Milestone 3044, Measurement of Unsaturated Hydraulic Conductivity and Chemical Transport in Yucca Mountain Tuff (LA-12596-MS), by James L. Conca. The author evaluates applying a new unsaturated flow technology (UFATM) to hydrologic studies at Yucca Mountain. Preliminary studies indicate that the UFA is a useful technique that should be used to compliment existing techniques for hydrogeochemical characterization at Yucca Mountain and other arid sites.

The schedule of SNL YMP QA audits and evaluations-in-lieu-of-audits for FY 1994 was issued.

Set out in the field the environmental clearance boundaries for Rock Valley Trench RV-3 and adjacent test pits. Prepared sketch for Environmental Department.

#### IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

Two presentations on Native American Culture were given by Richard Arnold, a consultant, to 15 students at Elaine Wynn Elementary School in Las Vegas, Nevada, on January 4, 1994, and to 20 guests of the National Park Service at Lake Mead, Nevada, on January 7, 1994. An educational presentation on archaeology was given to 15 students at Elaine Wynn Elementary School in Las Vegas, on January 6, 1994.

A tour to Yucca Mountain was conducted on January 6, 1994, for 40 guests from Inyo County.

A general overview presentation was also given to 45 students at Clayton Middle School in Reno, Nevada, on January 6, 1994.

Took delivery of the model of the Tunnel Boring Machine. It is approximately 3 feet long and 13 inches in diameter, with all major components shown. The cutter head rotates and is accurate. The model will be displayed at the Las Vegas Yucca Mountain Science Center.

The YMP staff completed 10 information requests. This was accomplished by writing responses, answering questions, or providing existing materials.

A media briefing was conducted on January 7, 1994, for four media outlets to further explain the recently named Sundance fault.

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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 Jacqueline Brandt at (702) 794-7896 or Theresa Hirsch at (702) 794-7759 for additional information. Exhibits are coordinated by Joanna Magruder at (702) 794-7056, Public Update Meetings are coordinated by Jamie Elliott at (702) 794-7496, and Tours are coordinated by Carleen Hill at (702) 794-7375 or Kelly Doyle at (702) 794-7133.

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<u>A. Stakeholders Meetings</u>			
Thursday-Friday, February 10-11	Affected Units of Government	Las Vegas, NV	A. Robison
<u>B. DOE/Headquarters Meetings</u>			
Wednesday, February 2	OCRWM Director's Program Review	Video- conference	R. Nelson
Monday-Friday, February 14-18	DOE/YMP Technical Program Review	Las Vegas, NV	R. Nelson
<u>C. CRWMS M&amp;O/DOE Meetings</u>			
Monday, January 24	YMPO Monthly Management Meeting	Las Vegas, NV	R. Nelson
Tuesday, February 22	CRWMS M&O Program Management Review	Video- conference	R. Nelson
<u>D. Internal and DOE Nevada Operations Office (NV) Meetings</u>			
Wednesday, January 19	NV Managers Monthly Program Review	Las Vegas, NV	R. Nelson
<u>E. NRC Interactions</u>			
Tuesday-Wednesday, February 1-2	NRC Technical Exchange and Site Visit on Erosion TR Related Topics (P)	Las Vegas, NV	T. Bjerstedt
Thursday, February 3	NRC Technical Meeting on ESF Status (P)	Las Vegas, NV	T. Bjerstedt
Tuesday-Wednesday, March 15-16	NRC Technical Exchange on Status of Work Relevant to Characterization of Saturated and Unsaturated Flow (P)	Denver, CO	T. Bjerstedt

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<b>E. <u>NRC Interactions (Continued)</u></b>			
Tuesday- Thursday, May 3-5	NRC Site Visit: Surface-Based/ Underground Site Characterization Activities (P)	Yucca Mountain, NV	T. Bjerstedt
Tuesday, May 17	NRC Meeting on Interactions Scheduling (P)	TBD	T. Bjerstedt
Thursday, May 26	NRC Technical Meeting on ESF Status and Update (P)	Rockville, MD	T. Bjerstedt
Monday- Tuesday, June 20-21	NRC Technical Exchange on TSPA (P)	Rockville, MD	T. Bjerstedt
Tuesday- Thursday, July 26-28	NRC Interactions: Topic TBD (P)	TBD	T. Bjerstedt
Tuesday- Thursday, August 23-25	NRC Interactions: Topic TBD (P)	TBD	T. Bjerstedt
Tuesday- Thursday, September 13-15	NRC Interactions: Topic TBD (P)	TBD	T. Bjerstedt
Tuesday- Thursday, October 25-27	NRC Interactions: Topic TBD (P)	TBD	T. Bjerstedt
Monday- Wednesday, November 7-9	NRC Interactions: Topic TBD (P)	TBD	T. Bjerstedt
Tuesday- Thursday, December 6-8	NRC Interactions: Topic TBD (P)	TBD	T. Bjerstedt
<b>F. <u>Nuclear Waste Technical Review Board (NWTRB) Interactions</u></b>			
Tuesday- Wednesday, January 11-12	NWTRB Full Board Meeting (P)	Arlington, VA	E. Smistad
Tuesday- Wednesday, March 8-9	NWTRB - Structural Geology and Geoen지니어링 Panel (P)	TBD	D. Williams

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<b>F. <u>NWTRB Interactions (Continued)</u></b>			
Thursday- Friday, March 10-11 (Tentative)	NWTRB - Engineered Barrier System Panel (P)	TBD	W. Simecka
Monday- Tuesday, March 21-22 (Tentative)	NWTRB - E&PH Panel (P)	Las Vegas, NV	W. Dixon
Monday- Wednesday, April 11-13	NWTRB Full Board Meeting (P)	Reno, NV	R. Patterson
Monday- Wednesday, July 11-13 (Tentative)	NWTRB Full Board Meeting (P)	Denver, CO	J. Nesbit
Wednesday- Friday, October 12-14 (Tentative)	NWTRB Full Board Meeting (P)	Las Vegas, NV	J. Nesbit
<b>G. <u>Advisory Committee on Nuclear Waste (ACNW) Interactions</u></b>			
Wednesday- Thursday, February 23-24	61st ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, March 23-24	62nd ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, April 20-21	63rd ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, May 18-19	64th ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, June 22-23	65th ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, July 20-21	66th ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, August 17-18	67th ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<b>G. <u>ACNW Interactions (Continued)</u></b>			
Wednesday- Thursday, September 21-22	68th ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, October 19-20	69th ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Tuesday- Wednesday, November 8-9	70th ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, December 14-15	71st ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
<b>H. <u>National Academy of Sciences (NAS) Interactions</u></b>			
Monday- Tuesday, February 7-8	NAS Committee on Yucca Mountain Standards (P)	TBD	S. Jones
Thursday- Friday, April 28-29	NAS Committee on Yucca Mountain Standards (P)	TBD	S. Jones
<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
<b>I. <u>State and Public Interactions</u></b>			
Saturday, January 8	JASON Project Teacher Workshop Mapping and Caving	Las Vegas, NV	C. Newbury D. Hoxie L. Cuba
Wednesday, January 12	Red Rock Visitors' Center - Native American Culture	Red Rock, NV	R. Arnold
Wednesday, January 12	Sierra Club - General Overview	Las Vegas, NV	J. Peck
Tuesday, January 13	Walter Bracken Elementary School - Archaeology	Las Vegas, NV	J. Wedding
Friday, January 14	Fay Herron Elementary School - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Friday, January 14	G. C. Wallace Engineers & Architects - General Overview	Las Vegas, NV	J. Peck

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
Saturday, January 15	Amargosa Valley Girl and Boy Scouts - Geology Workshop	Las Vegas, NV	Various YMP Staff
Tuesday, January 18	Roy Martin Junior High School - Botany	Las Vegas, NV	K. Wirtz
Tuesday, January 18	4-H T.E.C. - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, January 19	Roy Martin Junior High School - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, January 19	George Harris Elementary School - Yucca Mountain Johnny	Las Vegas, NV	J. Hartley
Wednesday, January 19	Elko County Commissioners - General Overview/ Transportation	Elko, NV	B. Bush P. Standish
Thursday, January 20	4-H T.E.C. - Native American Culture	Las Vegas, NV	R. Arnold
Friday, January 21	Nevada Regional Science Bowl - Training	Las Vegas, NV	Various YMP Staff
Friday, January 21	Johnson Junior High School - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Tuesday, January 25	Johnson Junior High School - Paleontology	Las Vegas, NV	A. Gil
Tuesday, January 25	Green Valley High School Key Club - General Overview	Las Vegas, NV	A. Robison
Tuesday, January 25	Yucca Mountain Speaker Series(P) - "Constructing a Tunnel to Study a Mountain"	Las Vegas, NV	D. McKenzie J. Peck

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
Wednesday, January 26	Ruby Thomas Elementary School - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Thursday, January 27	Yucca Mountain Speaker Series (P) - "Constructing a Tunnel to Study a Mountain"	Beatty, NV	D. McKenzie J. Peck
Friday, January 28	Ute Perkins Elementary School - Native American Culture	Moapa, NV	R. Arnold
Saturday, January 29	Amargosa Valley Girl and Boy Scouts - Geology Field Trip	Las Vegas, NV	TBD
Wednesday, February 2	C. P. Squires Elementary School - Energy	N. Las Vegas, NV	E. Harle
Thursday, February 3	Cannon Middle School - Native American Culture	Las Vegas, NV	R. Arnold
Thursday, February 3	American Society of Civil Engineers/ Engineering Design for the Community - General Overview/ Emphasis on Engineering	Irvine, CA	D. Kessel
Friday, February 4	University of Nevada, Las Vegas - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, February 9	Ruby Thomas Elementary School - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Friday- Sunday, February 11-13	1994 Nevada Regional High School Science Bowl	Las Vegas, NV	E. Harle

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
Saturday, February 12	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Tuesday, February 22	Yucca Mountain Speaker Series (P) - "Fossils Tell a Story"	Las Vegas, NV	A. Gil
Thursday, February 24	Yucca Mountain Speaker Series (P) - "Fossils Tell a Story"	Beatty, NV	A. Gil
Sunday, February 27	Waste Management Symposia - TBD	Tucson, AZ	TBD
Monday- Saturday, February 28- March 12	JASON Project - "Rain Forest"	Las Vegas, NV	E. Harle
Wednesday, March 9	Youth Leadership Las Vegas Program - Environmental	Las Vegas, NV	D. Bradford M. d'Oville
Saturday, March 12	Expanding Your Horizons - Math & Science	Las Vegas, NV	A. Gil L. Linden
Wednesday, March 16	San Diego Association of Geologists - General Overview	San Diego, CA	G. Fasano
Sunday, March 20	Risk Management Quarterly Association - TBD	San Diego, CA	TBD
Monday, March 21	Southern Nevada Science Fair - Science Fair	Las Vegas, NV	Various
Sunday, March 27	Yucca Mountain Speaker Series (P) - "Desert Beauties - Spring Wildflowers"	Pahrump, NV	K. Wirtz

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions (Continued)</u>			
Tuesday, March 29	Yucca Mountain Speaker Series (P) - "Desert Beauties - Spring Wildflowers"	Las Vegas, NV	K. Wirtz
Saturday, April 2	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Tuesday, April 5	Science and Mountains Teacher Workshop	Las Vegas, NV	E. Harle
Thursday, April 7	Science and Mountains Teacher Workshop	Las Vegas, NV	E. Harle
Monday, April 11	Critical Thinking Teacher Workshop	Las Vegas, NV	E. Harle
Tuesday, April 12	Science and Mountains Teacher Workshop	Las Vegas, NV	E. Harle
Thursday, April 14	Critical Thinking Teacher Workshop	Las Vegas, NV	E. Harle
Saturday, April 16	Critical Thinking Teacher Workshop	Las Vegas, NV	E. Harle
Saturday, April 16	Science and Mountains Teacher Workshop	Las Vegas, NV	E. Harle
Monday, April 18	Critical Thinking Teacher Workshop	Las Vegas, NV	E. Harle
Sunday, April 24	Yucca Mountain Speaker Series (P) - "Eating Your Way Through a Mountain"	Pahrump, NV	L. Destwolinski
Tuesday, April 26	Yucca Mountain Speaker Series (P) - "Eating Your Way Through a Mountain"	Las Vegas, NV	L. Destwolinski
Sunday, June 12	Southeast Area Regulatory Utility Commissioners Conference - TBD	Charleston, SC	TBD

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
Monday, June 13	LESSON Teacher Workshop - Science Workshop	Las Vegas, NV	TBD
<u>Date</u>	<u>Event</u>	<u>Location</u>	
J. <u>Exhibits Scheduled</u>			
Saturday, January 22	Public Open House (P)	Las Vegas, NV	
Monday- Wednesday, February 14-16	Society for Mining and Metallurgy	Albuquerque, NM	
Saturday, February 26	Public Open House (P)	Las Vegas, NV	
Sunday- Thursday, February 27- March 3	Waste Management Symposia	Tucson, AZ	
Saturday, March 19	Public Open House (P)	Las Vegas, NV	
Monday, April 4	Churchill County	Fallon, NV	
Thursday- Sunday, April 7-10	Clark County Fair	Logandale, NV	
Saturday, April 16	Public Open House (P)	Las Vegas, NV	
Friday- Saturday, May 13-14	Armed Forces Day	Hawthorne, NV	
Sunday- Thursday, May 22-26	American Society for Quality Control - Annual Quality Congress	Las Vegas, NV	
Sunday- Friday, May 22-27	IHLRWM	Las Vegas, NV	

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Daniel A. Dreyfus

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<u>Date</u>	<u>Event</u>	<u>Location</u>
J. <u>Exhibits Scheduled</u> (Continued)		
Sunday- Tuesday, June 12-14	SEARUC	TBD
Sunday- Wednesday, June 12-15	American Association of Petroleum Geologists	Denver, CO
Friday- Sunday, June 17-19	Gridley Days	Austin, NV
Friday- Sunday, July 15-17	Mining Days	Battle Mountain, NV
Tuesday- Thursday, July 19-21	American Nuclear Society (ANS)	New Orleans, LA
Friday- Sunday, August 12-14	Eureka County Fair	Eureka, NV
Tuesday- Monday, August 23-29	Nevada State Fair	Reno, NV
Monday- Wednesday, August 29-31	Nuclear Information and Records Management Association	Milwaukee, WI
Monday- Tuesday, August 29- September 6	Lander County Fair	Battle Mountain, NV
Monday- Tuesday, August 29- September 6	White Pine County Fair	Ely, NV
Thursday- Monday, September 1-5	Tri-County Fair	Bishop, CA
Friday- Sunday, September 30- October 9	Las Vegas Jaycees State Fair	Las Vegas, NV

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Daniel A. Dreyfus

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<u>Date</u>	<u>Event</u>	<u>Location</u>
J. <u>Exhibits Scheduled</u> (Continued)		
Sunday-Friday, October 2-7	Association of Engineering Geologists	Williamsburg, VA
Sunday-Thursday, October 23-27	Geological Society of America	Seattle, WA
Sunday-Wednesday, November 13-16	ANS	Washington, DC
Monday-Friday, December 5-9	American Geophysical Union	San Francisco, CA

<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled</u>		
Thursday, January 6	Inyo County	TBD
Monday, January 10	Congressman Bilirakis	TBD
Tuesday, January 11	Amargosa Middle School	TBD
Wednesday, January 12	YMP Orientation Tour	A. Stephenson
Thursday, January 13	Massachusetts Institute of Technology/U.C. Berkeley	TBD
Thursday, January 20	B&W Fuel Company, Tom Coleman, Vice-President	TBD
Saturday, January 22	Public Open House (P)	Various Escorts
Monday, January 31	Steering Committee on High-Level Radioactive Waste Project - Japan	TBD

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Daniel A. Dreyfus

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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled</u> (Continued)		
Tuesday - Wednesday February 1-2	NRC	TBD
Friday, February 4	American Nuclear Energy Council - Congressional Information Program Leadership Workshop	TBD
Thursday, February 10	Conference of Radiation Control Program Directors Committee on Radioactive Materials Transportation	TBD
Wednesday, February 16	Quannah McCall Sixth Grade Center	TBD
Friday, February 18	South Mountain High School	TBD
Wednesday, February 23	Fremont Middle School	TBD
Thursday, February 24	Inyo County Grand Jury	TBD
Saturday, February 26	Public Open House (P)	Various Escorts
Wednesday, March 2	Fremont Middle School	TBD
Tuesday, March 8	St. Cloud State University (MN)	TBD
Thursday, March 10	Laughlin High School	TBD
Tuesday, March 15	Jewish War Veterans	TBD
Saturday, March 19	Public Open House (P)	Various Escorts
Tuesday, March 29	W. Mac Lyon Middle School	TBD
Thursday, March 31	National Council, State Garden Club Specific Region Convention	TBD

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Daniel A. Dreyfus

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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled</u> (Continued)		
Thursday, April 7	Southern States Energy Board Advisory Committee on Radioactive Materials Transportation	TBD
Tuesday, April 12	Thurman White Middle School	TBD
Friday, April 15	Desert Survivors	TBD
Saturday, April 16	Public Open House (P)	Various Escorts
Wednesday, April 20	Cannon Junior High School	TBD
Thursday, April 28	Garside Junior High School	TBD
Thursday, May 12	CVT Gilbert Sixth Grade Center	TBD
Thursday, May 19	Western High School	TBD
Monday, May 23	American Society for Quality Control Conference	TBD
Friday, May 27	IHLRWM Conference	TBD

  
Robert M. Nelson, Jr.  
Acting Project Manager

YMP:RVB-1725



**Department of Energy**  
Yucca Mountain Site Characterization  
Project Office  
P. O. Box 98608  
Las Vegas, NV 89193-8608

**JAN 20 1994**

WBS: 1.2.7.3  
QA: N/A

R. M. Nelson, Jr., Acting Project Manager, YMP, NV

**YUCCA MOUNTAIN SITE OFFICE (YMSO) ACTIVITY REPORT (SCP: N/A)**

The following are the significant activities for the period from January 1, 1994 to January 14, 1994:

**1. FIELD OPERATIONS CENTER**

**A. Management and Administration**

- a. Site Manager submitted the bi-weekly Yucca Mountain Site Office (YMSO) Site Activity Report to the Acting Project Manager and other interested project personnel.
- b. The Site Manager and FOC staff provided the required support to four tours this week: Inyo County, Congressman Bilirakis, Amargosa Middle School, YMP Orientation Class and M.I.T./UC Berkley.
- c. SAIC/SHCD conducted 17 surveillances this week.
- d. REECo commenced mobilizing the LM-300 drill rig at the SD-12 borehole site on the recently constructed drill pad. Other associated equipment and trailers are being placed on the pad area.
- e. Provided operations, administrative, and security support to the Yucca Mountain Site Manager and his DOE staff.
- f. Provided operational and administrative support for site characterization activities in the field.
- g. Provided logistical support for issuing vehicles, first aid kits, fire extinguisher, and other necessary equipment to personnel performing field duty.
- h. Prepared and transmitted daily operations reports to NORSOC, and the biweekly reports to HQ OCRWM.
- i. Prepared ninety-one (91) badge requests for visitors and field work. In addition, five (5) badge terminations were processed.
- j. Coordinated upcoming building evacuation exercises and tunnel evacuation drill issues with Safety & Health Department.
- k. Processed six (6) Work Order Requests, providing for communications, field support and building maintenance.
- l. Processed thirty-two (32) photographic service/support requests.

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R. M. Nelson, Acting Project Manager, YMP, NV

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- m. Continue to provide photographic coverage of ESF operations.
- n. Provided underground visitors training for visitors and workers requiring access.
- o. Provided log of Technical Field Work Requests to Project QA Office.
- p. Worked on Environmental Self Assessment Corrective Action Response Project.
- q. Attended Metric Briefing meeting.
- r. Coordinated planned fire drill exercises with REECo Fire Department. Continued planning for tunnel evacuation/mine rescue exercises.
- s. Prepared briefing slides for Site Manager.
- t. Toured REECo medical facilities for familiarization.
- u. Continued review/rewrite of Field Management Plan.

**B. Project Safety & Health (DOE/SAIC)**

- a. Continued on AP 5.7 inspection of BoA tower.
- b. Responded to SHO concerns on courtyard demolition and construction at BoA. Performed surveillance and directed corrective action.
- c. Reviewed Job Package 94-06.
- d. Assisted SHO with response to concerns for delinquent General Employee Training refresher.
- e. Continue with preparation for "Safety Awareness Day".
- f. Supported project Training with continued review of Underground Training modules.
- g. Performed environmental air sampling of background mineral fibers.
- h. Performed dust sampling at the ESF alcove and on REECo equipment operators.
- i. Coordinated rodent control operations and training.
- j. Staff members attended "Construction Safety for DOE" class.
- k. Continued preparation for emergency exercise scenario.
- l. Assisted on drafting status report on DOE 1000.3A audit findings.
- m. Performed nine (9) surveillance; a) 1 at BoA courtyard construction; b) 1 at NRG 7/7A; c) 1 at C-Well complex; d) 1 at Large Block Test site; and e) five at NRT-1.
- n. Measured air quality and relative humidity during grouting along back and left rib.
- o. Conducted sampling for respirable silica and measured noise levels at NRT-1.
- p. Observed trenching operations at ESF pad.
- q. Supported on going tours.

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R. M. Nelson, Acting Project Manager, YMP, NV

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r. OCCURRENCE REPORTS

1. SAIC: 1 - awaiting Facility Representative signature.

C. Bullfrog Planning Commission

- a. Background preparation for status and recommendations on YMP access road.

2. Raytheon Services Nevada, (RSN)

A. Field Support

- a. Supported Geologic Mapping in the starter tunnel alcove.
- b. As-built Starter Tunnel and REECo control points.
- c. Align sawcuts, Large Block Experiment, Fran Ridge.
- d. Set the environmental clearance area on water storage access trail.
- e. Checked grade stakes on 69 kV switchgear box.
- f. Topographic survey of SD-12 access road.
- g. As-built survey of Trench NRT-1.
- h. Layout of reference point stakes on NRG-2 and NRG-3.
- i. As-built survey of 69 kV Pad.
- j. As-built survey of Ghost Dance Fault Roadcuts.
- k. Survey crew continuing work on Area 25 Survey Control Net.

B. Quality Control

- a. Continued verification activities at C-Hole complex.
- b. Continued verification activities at NRG-7/7A.
- c. Continued verification activities at UZ-14.
- d. Performed Technical Inspection of partial shipment of C-Well Test material. Remainder of equipment to be inspected as received.
- e. Monitored RSN survey department activities in conjunction with NRT-1.

3. Sample Management Facility (SMF/SAIC)

- a. Supported drilling activities on NRG-7/7A.
- b. Continued monitoring and oversight of prototype drilling tool development conducted at Colorado School of Mines.
- c. Created 91 specimens from core samples for analysis by PI's. Shipment of specimens shipped to LANL.

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- d. Conducted 20 core examinations at SMF for SNL, UNR, Saga Exploration, and USGS.
- e. Processed core from drilling activities and processed Specimen Removal Requests.

4. YMP Hydrologic Research Facility, (USGS)

The following activities were accomplished by USGS Staff:

Geologic Studies Program:

- a. Collected geochemical samples of core at the SMF.
- b. Examined Ranier Mesa tuff in new Exile Hill Trenches.

Hydrologic Investigation Program:

Saturated Zone:

- a. Water levels were measured, data was downloaded and transducer were calibrated at various locations.
- b. Oversaw installation of packers into C #3 and rig move to C #1.

Unsaturated Zone:

- a. Continued to run air permeability tests at UZ-16.

5. Reynolds Electric and Engineering Co., Inc. (REECO)

A. Drilling

- a. UZ-14, LM-300 drill rig, set packer element and ran fluid level indicator. Ran Water Bailer and recovered 88.14 gallons of water. rigging down rig for movement.
- b. NRG-7/7A, Failing 1500 drill rig, cored to 1008.22 feet. Deviation survey at 980 feet - 5 1/2 degrees.
- c. C-Well, Failing Stratmaster, finished at C #3, rigged down and moved to C #1, rigging up.

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B. Logistics

- a. Continued requisitioning supplies, materials, and services for Field Operations Center.
- b. Supported on going tours.
- c. Supported construction efforts in Area 25.

C. Construction

- a. JP93-10- "Fran Ridge Large Block Test." The large block experiment project is fixing the water pump and adjusting the sump lines for water containment; also installing the large saw cutting equipment.
- b. JP94-02- "Bow Ridge Fault." The NRT-1 Trench is being mapped by USGS and the RSN auger rig has been moved on location. REECo has completed excavation of the trench to uncover and test the nonlithified tuff materials.
- c. TPP92-1- "NRG-2, NRG-2A, NRG-2b, NRG-3, NRG-5, & NRG-5." Gyro borehole surveys started. WT-2 started 01/10/94, some instrument problems were reported, but the survey was completed 1/11/94. Work is in progress at NRG-2, -2A, -2B.
- d. JP93-15- "NRG-7/7A Borehole." Drilling started 10/21/93. Core depth 1039.65 feet.
- e. JP92-17- "UZ-14" Core depth 1442.1, ream depth 1421.6. The LM-300 drilling rig is being moved off of the UZ-14 location.
- f. JP-92-3- "UZ-16" Air permeability testing by USGS is in progress, and is scheduled to run through 2/94.
- g. JP93-11- "C-Well Testing" Placement of the packer strings completed. Final test of equipment in C#1 scheduled for 01/13/94.
- h. JP94-06- "SD-9 Drill Pad & Access Road." JP sign off is imminent.

6. Los Alamos National Laboratory, (LANL)

- a. REECo shotcreted highwall in the box cut, completing fibercreting of Test Alcove, and replacing and grouting permanent rockbolts in the main ESF.
- b. Supported SNL in test alcove installing construction monitoring gages.
- c. Total tracer water used is 443,096 gallons.
- d. SNL field team laid out locations for MPBX and convergence pins in the Test Alcove.
- f. SNL field team completed assembly of saw for large block cutting activity and commenced sawing the large block.

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7. Documents and Records Center, (CRWMS M&O)

a. Received and Issued to following Controlled Documents:

JOB PACKAGES

YMP/JP93-02A, Rev. 1, "Drill Pad Construction Drilling and Testing of Borehole UE-15 NRG-4".

TEST PLANNING PACKAGES

SPECIFICATIONS

YMP-025-9-SP11, Rev. 1, "RSN Rotary Drill Rig".  
Design Package 1B.

DRAWINGS

Design Package 1B.

WORK PROGRAMS

YMP/WP/93-19, Rev. 1, "USW NRG-7/7A North Ramp Borehole Work Program".

FCRs

FCR 94/066, "JP92-20E Records Change and Procedure Inclusion".

b. REPRODUCTION:

72,094 pages copied  
6,480 drawings copied.

c. DOCUMENTS ISSUED:

7,930 controlled documents  
- 44 JP's  
- 2,761 SPEC's  
- 34 WP's  
- 5,056 DWG's  
- 35 FCR's

865 information copies