



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

*Charlotte*

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 24, 1994  
SUBJECT: OFFICE OF GEOLOGIC DISPOSAL WEEKLY HIGHLIGHTS FOR THE WEEK  
ENDING JANUARY 28, FEBRUARY 4, AND FEBRUARY 11, 1994

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

NOTE TO CHARLOTTE: Also enclosed is the SNL January 1994 Monthly Progress Report.

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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

**FEB 22 1994**

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

OFFICE OF GEOLOGIC DISPOSAL WEEKLY HIGHLIGHTS FOR THE WEEK ENDING  
FEBRUARY 11, 1994 (SCP: N/A)

**I. FORECAST SIGNIFICANT EVENTS**

Meetings

A Stakeholders meeting will be held Thursday-Friday, February 10-11, 1994, in Las Vegas, Nevada, with representatives from Affected Units of Government.

Technical Program Review will be held February 14-18, 1994. The U.S. Department of Energy (DOE) and program participants will participate in this open comprehensive technical review.

Representatives from the Yucca Mountain Site Characterization Project Office (YMPO) and the West Las Vegas African Americans for Study of Yucca Mountain will meet with Dr. Ramona Edelin, president of the National Urban Coalition, on February 24, 1994.

**II. CRITICAL ITEM STATUS - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT (YMP)**

**A. Site Characterization Activities**

ESF

Construction

On Job Package (JP) 92-20, ESF North Portal Pad and Facilities, support continues for the wiremen and core drillers in Test Alcove 1. The drill platform has been set up and secured. Crews have begun setting up the dust collector and oil and water separator to be used during core drilling. Regrading of the east part of the North Portal Pad continues. Mobilization of the core drill in the test alcove was completed on February 10, 1994.

Continued placement of bedding sand in the trench and installation of the pipe for the water line. Continued placing and compacting backfill (center loading) in the water line trench between Well J-13 and the Booster Pump Station.

Continued erecting concrete batch plant.

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Construction is continuing on the 69kV power distribution system with trenching for the duct banks and manholes on the North Portal Pad. Continued placing of rebar and pouring of concrete for ductbanks. Continued installation of power poles and power lines for temporary power on the pad.

Continued rework of Canyon Substation with pouring of the new transformer pad. Installing switchgear at the North Portal Pad substation.

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

69kVA power available  
at the North Portal

February 14, 1994

#### Design

Continued formal comment resolution from the 90 percent design reviews for Design Packages 2B and 1C. Continuing design activities for Packages 1D and 2C.

#### Site Characterization Testing

Exploratory drilling operations progress is summarized as follows:

<u>Borehole</u>	<u>Current Core Depth 02/11/94</u>	<u>Current Ream Depth 02/11/94</u>	<u>Total Planned Depth</u>
UZ-14	1,442.1 feet	1,421.6 feet	2,000 feet
NRG-7/7A	1,243.4 feet	302.1 feet	1,445 feet
SD-12	50.1 feet	50.0 feet	

On UZ-14, work is still suspended pending completion of higher priority work that will allow mobilization of alternative drilling equipment to the site.

On JP 93-15, Borehole NRG-7/7A, the PQ drill pipe was replaced and crews are ready to core ahead.

On JP 94-04, SD-12 Borehole, the hole has been reamed to a 22-inch diameter for setting conductor pipe from the surface to 50 feet. Installation of surface casing was completed this week. Drilling support staff collected and processed core and cuttings from 37.3 feet to 50.0 feet.

On JP 94-3, Boreholes NRG-2C and NRG-2D, auger drilling of NRG-2C advanced from 50 feet to 89 feet. Hammer drilling of NRG-2D is at a depth of 38 feet; the hole will be completed with an auger drill when NRG-2C is completed.

On trenching on the west side of Exile Hill, shoring is being installed prior to continued testing in the trench.

The JP authorization letter and field operations permit for JP 94-06, Access Road Drill Pad for Borehole USW SD-9, was issued by the Site Manager.

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A letter has been issued to the Nevada Test Site Office requesting use of facilities at the R-MAD Complex and to relocate two structures from Area 2 to Area 25 for warehousing capability and ice house service.

Revised and implemented procedures to address ESF Radial Boreholes and the UE-25 NRG-2C and NRG-2D boreholes sample collecting activities.

Conducted four core examinations at the Sample Management Facility (SMF) for the U.S. Geological Survey (USGS).

The SMF processed core and cuttings from USW NRG-7/7A, USW SD-12, and UE-25 NRG-2C.

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

SCP ACTIVITY	TITLE	COMMENTS
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
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	Cl-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

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SCP ACTIVITY	TITLE	COMMENTS
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

The Safety and Health Division conducted 26 surveillances during this reporting period.

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

Three papers, submitted by staff scientists, were accepted by the American Nuclear Society (ANS) for the International High-Level Radioactive Waste Management (IHLRWM) Conference.

Air Quality permits were approved by the Bureau of Air Quality for the concrete batch plant and the radial conveyor stacker.

#### LBT

Excavation of the LBT to Topopah Spring welded tuff continued.

#### Regulatory Interactions

The Regulatory Interactions Branch will be participating in the Technical Program Review presentation and panel discussion on February 16, 1994, at the Stardust Hotel in Las Vegas. The panel will include discussions on the Site Suitability Initiative and DOE approach to licensing, including Issue Resolution and the Annotated Outline for License Application.

#### Issue Resolution

The Issue Resolution Steering Group meeting scheduled for February 11, 1994, was cancelled due to weather conditions in Washington, D.C. The meeting will be rescheduled as soon as possible.

#### Technical Analysis

The Performance Assessment (PA) staff attended the PA management meeting in Albuquerque, New Mexico, on February 7, 1994, to discuss current status of PA efforts and the Summary DOE document for Total System Performance Assessment (TSPA) 1993. The staff also attended a review of a scheme for establishing a baseline hydrologic case or set of cases, which was proposed by William Nelson, Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O). Eric Smistad, YMPO, attended a hydrologic modeling workshop at Lawrence Berkeley Laboratory. Technical Analysis Branch (TAB) staff met with the new Assistant Manager for Suitability and Licensing to discuss task assignments and structure of the new organization.

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A final draft agenda for the U.S. Nuclear Regulatory Commission (NRC) Technical Exchange on ground water travel time was completed. The teleconference with the NRC, planned for February 11, 1994, was postponed due to weather conditions in Washington, D.C.

The staff completed preparations for the Technical Program Review. The TAB staff will make presentations on the following: Hydrology Overview, Regional Hydrology, Geochemistry, Mineralogy/Petrology, Altered Zone, PA, and Technical Data Management.

Site Characterization Plan/Study Plan (SP) Status

No SPs were approved by the YMPO this week.

SP BREAKDOWN

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	Initial Plans	Major Revisions
Not Submitted to YMPO .....	35	0
In Screening Review .....	0	0
In YMPO Review .....	3	0
Awaiting Comment Resolution .....	3	3
In Verification Audit .....	5	1
Awaiting YMPO Approval .....	1	0
Awaiting Submission to NRC .....	0	0
Awaiting NRC Initial Review .....	7	5
Accepted by NRC .....	50	6
Totals .....	<u>104</u>	<u>15</u>
Total Submitted to NRC .....	57	10

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State of Nevada Comments Status:

Received Comments from the State of Nevada.....	29
Responses Transmitted to the State of Nevada .....	19

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NRC Comments Status:

Received Comments from NRC .....	29
Responses Transmitted from DOE to NRC.....	25

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B. Project Planning and Control

Ran Gantt chart for the Director's Program Review.

Began processing January 1994 status data from the participants.

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Preparing schedule "poster" for the Technical Project Review in support of the Long Range Technical Planning Session, planned for February 17, 1994.

Presented Work Breakdown Structure (WBS) 1.2.15.3 schedule and Planning and Control System philosophy to Carol Rehkop, YMPO. Met and discussed project control support's relationship with the training function.

C. Quality Assurance Implementation

Quality (O)-List Procedure Development

Implementation of the Corrective Action Response (CAR) against CAR YM-94-012 continues with presentations to the Assessment Team (AT) on various aspects of Probabilistic Risk Assessment.

O-List and Management Control-List Implementation

The change to the Q-List regarding the intersection transition with the test alcove in the North Ramp Starter Tunnel is being revised based on AT review.

Classification and Waste Isolation Evaluations Review

No significant activities to report.

III. GENERAL INFORMATION ITEMS

Reviewed CRWMS M&O draft report, "Demonstrating Post-Closure Safety for a Repository."

Prepared text on site characterization, PA, and an approach to site suitability for the draft revision of the OCRWM Strategic Plan.

Reviewed West Valley Waste Compliance Plan and Defense Waste Processing Facility Waste Qualification Reports, Volumes 7 and 10, in preparation for the February 1994 Technical Review Group meeting in Dallas, Texas.

Revised Alternative Program Strategy materials.

Regarding WBS 1.2.2.3.1.2, Waste Form Testing - Glass, the N2 tests (SRL actinide-doped glass) continued as scheduled with sampling occurring on December 22, 1993. This is the first sampling of these tests since May 3, 1990. Aliquots were taken for pH, carbon anion, actinide, cation, and colloid analyses. The remaining liquid was stored for later analysis and use in potential tests. The glass samples from these tests were transferred to clean vessels with new gaskets and the tests were continued. These tests have now been in progress for 95 months.

Julie Canepa, Technical Project Officer, Los Alamos National Laboratory, testified at the Minnesota State Energy Commission on February 8, 1994.

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The paper entitled, "The Importance of Zeolites in the Potential High-Level Radioactive Waste Repository at Yucca Mountain, Nevada," by David Vaniman and David Bish, Los Alamos, was completed. The paper will be submitted in the proceedings volume of the Zeolite '93 conference.

Quantitative analysis of UZ-16 core samples, including all reduction of X-ray powder diffraction data, was completed. This information will be included in a Los Alamos report (Milestone LA3372).

Completed Administrative Procedure 5.7 inspection of the Bank of America tower; forwarded letters and notification of findings to the DOE Safety and Health Specialist.

Completed YMP 92-23, "Evacuation Plan - Bank of America" and submitted it to the Plans and Procedures Department for final draft and signature.

Reviewed and drafted comments on DOE Technical Standards: "Asbestos Standard Discussion Paper," "Industrial Hygiene Technical Standard for Non-ionizing Radiation," and "Technical Standards for Hazardous Waste Operations and Emergency Response to Hazardous Substance Release."

On rock characteristics, mapping continued on the Ghost Dance Fault exposure at Antler Ridge. The USGS personnel were on site to view and analyze core at the SMF, and to visit soil gas sampling sites on and around Yucca Mountain.

On Surface Runoff Studies, USGS personnel were on site this week to collect stream gage data for possible runoff events from recent storms.

On Unsaturated Zone Studies, air permeability testing continued at UE-25 UZ-16. Numerous shallow boreholes were logged with neutron meters this week to collect data on near-surface moisture. Work continued on the gas chromatograph in the mobile geochemistry laboratory to try to improve the methodology for detecting SUVA tracer gas.

The USGS continued water level monitoring in numerous deep boreholes on and around Yucca Mountain. Static water level measurements continued in the "C-wells" in Midway Valley.

#### IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

An educational presentation on "Yucca Mountain Johnny" was given to 17 students at McMillan Elementary School on February 8, 1994, in Las Vegas. Also, an educational presentation was given on energy to 100 students at C. P. Squires Elementary School on February 10, 1994, in Las Vegas.

The YMP staff held LESSONS Teacher Workshops on February 9, 1994, on fossils and volcanoes, for 20 teachers at Ruby Thomas Elementary School; and on February 10, 1994, on static electricity, for 28 teachers at Fitzgerald Elementary School, both in Las Vegas.

A general YMP overview and update was given for approximately 35 people at the Conference of Radiation Control Program Directors in Las Vegas on February 9, 1994.

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Tours to Yucca Mountain were conducted on February 9, 1994, for 30 guests for a YMP Orientation; and on February 10, 1994, for 20 guests from the Conference of Radiation Control Program Directors Committee on Radioactive Materials Transportation and 5 guests from the Colorado School of Mines.

Several groups of fifth grade students toured the Las Vegas Yucca Mountain Science Center and attended educational presentations on geology. These included 50 students from Marion Earl Elementary School on February 8, 1994; 60 students from Myrtle Tate Elementary School on February 9, 1994; and 30 students from Myrtle Tate Elementary School on February 10, 1994.

The YMP staff coordinated and attended the Public Participation Plan meeting for the Affected Units of Government on February 10, 1994, and the Affected Units of Government meeting on February 11, 1994, in Las Vegas.

The YMP staff developed and placed a newspaper announcement about the tour program, covering the period February through April 1994.

The YMP staff completed the interim exhibit renovations plan at the Field Operations Center, including new exhibits for the USGS, the ESF, and the LM-300 drill rig.

Eighteen external information requests were completed by YMP staff. This was accomplished by providing written responses to 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 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) 794-7769, 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>
<b>A. <u>Stakeholders Meetings</u></b>			
Thursday- Friday, February 10-11	Affected Units of Government	Las Vegas, NV	E. Lundgaard
<b>B. <u>DOE/HQ Meetings</u></b>			
Monday- Friday, February 14-18	DOE/YMP Technical Program Review (P)	Las Vegas, NV	R. Nelson
Thursday, February 17	OCRWM Director's Program Review (P)	Las Vegas, NV	R. Nelson

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<u>C. CRWMS M&amp;O/DOE Meetings</u>			
Tuesday, February 22	CRWMS M&O Program Management Review (P)	Video- Conference	R. Nelson
<u>D. Internal and DOE/Nevada Operations Office Meetings</u>			
Wednesday, February 23	DOE/NV Monthly Managers Program Review (P)	Las Vegas, NV	R. Nelson
Friday, February 25	Technical Project Officers Meeting	Las Vegas, NV	R. Nelson
Friday, February 25	Planning and Budget Meeting	Las Vegas, NV	R. Nelson
<u>E. NRC Interactions</u>			
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
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

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
E. <u>NRC Interactions</u> (Continued)			
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
F. <u>Nuclear Waste Technical Review Board (NWTRB) Interactions</u>			
Tuesday- Wednesday, March 8-9	NWTRB - Structural Geology and Geoengineering Panel (P)	San Francisco, CA	D. Williams
Thursday- Friday, March 10-11	NWTRB - Engineered Barrier System Panel (P)	Pleasanton, CA	W. Simecka
Monday- Tuesday, March 21-22 (Tentative)	NWTRB - Environment and Public Health 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

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<u>G. Advisory Committee on Nuclear Waste (ACNW) Interactions</u>			
Wednesday- Thursday, February 23-24	61st ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Tuesday, March 22	ACNW Working Group on Low-Level Waste PA (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
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

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
<b>H. <u>National Academy of Sciences (NAS) Interactions</u></b>			
Thursday- Friday, April 28-29	NAS Committee on Yucca Mountain Standards (P)	Las Vegas, NV	S. Jones
<b>I. <u>State and Public Interactions</u></b>			
Friday- Sunday, February 11-13	1994 Nevada Regional High School Science Bowl	Las Vegas, NV	E. Harle
Saturday, February 12	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Monday, February 14	Quannah McCall Sixth Grade Center - General Overview	Las Vegas, NV	J. Peck
Monday, February 14	Las Vegas Gem Club - General Overview/Update	Las Vegas, NV	J. Peck
Tuesday, February 15	C. P. Squires Elementary School - Energy	Las Vegas, NV	E. Harle
Tuesday- Thursday, February 15-17	4-H T.E.C. - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, February 16	Roy Martin Junior High School - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, February 16	White Pine County High School - YMP Update	Ely, NV	J. Peck P. Standish
Wednesday, February 16	White Pine County - YMP Update	Ely, NV	B. Bush J. Peck P. Standish
Thursday, February 17	John R. Beatty Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouille
Friday, February 18	Ernest A. Becker Middle School - Caving	Las Vegas, NV	L. Cuba

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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 19	National Organization for Women - General Overview	Las Vegas, NV	TBD
Tuesday, February 22	Fremont Middle School - Caving	Las Vegas, NV	L. Cuba
Tuesday, February 22	Yucca Mountain Speaker Series (P) - "Fossils Tell a Story"	Las Vegas, NV	A. Gil
Wednesday, February 23	Carson High School - General Overview	Carson City, NV	J. Peck
Thursday, February 24	Yucca Mountain Speaker Series (P) - "Fossils Tell a Story"	Beatty, NV	A. Gil
Monday- Saturday, February 28- March 12	JASON Project - "Rain Forest"	Las Vegas, NV	E. Harle
Tuesday, March 1	John S. Park Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouille
Tuesday, March 1	Solo Club - Native American Culture	Las Vegas, NV	R. Arnold
Thursday, March 3	Waste Management Symposia - Update on Site Characterization	Tucson, AZ	M. Blanchard
Monday, March 7	Derfelt Elementary School - Native American Culture	Las Vegas, NV	R. Arnold
Tuesday, March 8	Roy Martin Junior High School - Environmental	Las Vegas, NV	T. Pysto
Wednesday, March 9	Youth Leadership Las Vegas Program - Environmental	Las Vegas, NV	D. Bradford M. d'Ouille

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
Thursday, March 10	Fremont Middle School - General Overview/Geology	Las Vegas, NV	D. Merritt
Saturday, March 12	Expanding Your Horizons - Math & Science	Las Vegas, NV	A. Gil L. Linden
Monday, March 14	Silver Rim Elementary School - "Gee Whiz Science"	Tonopah, NV	J. Blink
Tuesday, March 15	Hawthorne - "Gee Whiz Science"	Hawthorne, NV	J. Blink
Tuesday, March 15	Ute Perkins Elementary School - Energy	Las Vegas, NV	J. Sizemore M. d'Ouille
Wednesday, March 16	ANS - TBD	San Diego, CA	J. Peck
Wednesday, March 16	Incline Elemen- tary School - "Gee Whiz Science"	Incline, NV	J. Blink
Wednesday, March 16	Bill Yonema Tomiyasu Elementary School - Energy	Las Vegas, NV	J. Sizemore M. d'Ouille
Wednesday, March 16	San Diego Association of Geologists - General Overview	San Diego, CA	G. Fasano
Thursday, March 17	Incline Middle School - "Gee Whiz Science"	Incline, NV	J. Blink
Thursday, March 17	William R. Lummis Elementary School - "Yucca Mountain Johnny"	Las Vegas, NV	J. Hartley
Thursday, March 17	Bill Yonema Tomiyasu Elementary School - Energy	Las Vegas, NV	J. Sizemore M. d'Ouille

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions (Continued)</u>			
Thursday, March 17	William R. Lummis Elementary School - Metric System	Las Vegas, NV	L. Cuba
Friday, March 18	Tonopah Element- ary School - Nye County Egg Drop	Tonopah, NV	J. Blink
Friday, March 18	Association of Girl Scouts Executive Staff - Native American Culture	Las Vegas, NV	R. Arnold
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
Wednesday, March 23	Johnson Junior High School - Paleontology	Las Vegas, NV	A. Gil
Thursday, March 24	Moonstruck Gallery - Native American Culture	Las Vegas, NV	R. Arnold
Sunday, March 27	Yucca Mountain Speaker Series (P) - "Desert Beauties - Spring Wildflowers"	Pahrump, NV	K. Wirtz
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
Wednesday, April 6	C. P. Squires Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouille

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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, April 6	Summerlin Community Association - Neighborhood Dialogues	Las Vegas, NV	TBD
Thursday, April 7	Science and Mountains Teacher Workshop	Las Vegas, NV	E. Harle
Thursday, April 7	Association for Education in Journalism and Mass Communication - General Overview	Reno, NV	TBD
Thursday, April 7	C. P. Squires Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouville
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
Tuesday, April 12	Kirk Adams Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouville
Thursday, April 14	Critical Thinking Teacher Workshop	Las Vegas, NV	E. Harle
Thursday, April 14	Oran Gragson Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouville
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
Tuesday - Wednesday, April 19-20	Gordon McCaw Elementary School - Energy	Las Vegas, NV	J. Sizemore M. d'Ouville
Sunday, April 24	Yucca Mountain Speaker Series (P) - "Eating Your Way Through a Mountain"	Pahrump, NV	L. Destwolinski

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
Tuesday, April 26	Yucca Mountain Speaker Series (P) - "Eating Your Way Through a Mountain"	Las Vegas, NV	L. Destwolinski
Sunday, May 1	Ruth Fyfe Elementary School - Geology	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Tuesday, May 3	Ruth Fyfe Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouille
Wednesday, May 4	Chester T. Sewell Elementary School - Fifth Grade Field Trip - Energy	Las Vegas, NV	J. Sizemore M. d'Ouille
Thursday, May 5	Ruth Fyfe Elementary School - Geology	Las Vegas, NV	J. Sizemore M. d'Ouille
Saturday, May 7	Woolley Elemen- tary School - Teacher Workshop - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Wednesday, May 11	Chester T. Sewell Elementary School - Fifth Grade Field Trip - Energy	Las Vegas, NV	J. Sizemore M. d'Ouille
Tuesday, May 17	Role of Nevada's Scientific and Engineering Community in the Yucca Mountain Suitability Study	Las Vegas, NV	Various YMP Staff
Tuesday, May 31	LESSON Teacher Workshop - Science Workshop	Nevada Test Site, NV	TBD
Saturday, June 4	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Sunday, June 12	Southeast Area Regulatory Utility Commissioners (SEARUC) Conference - TBD	Charleston, SC	TBD
Monday, June 13	LESSON Teacher Workshop - Science Workshop	Las Vegas, NV	TBD

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<u>Date</u>	<u>Event</u>	<u>Location</u>
<b>J. Exhibits Scheduled</b>		
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- Wednesday, March 21-23	Geological Society of America - Cordilleran Section	San Bernardino, CA
Thursday, March 24	Green Valley Civic Association Network	Henderson, NV
Thursday- Sunday, April 7-10	Clark County Fair	Logandale, NV
Saturday, April 16	Public Open House (P)	Las Vegas, NV
Saturday, April 16	Churchill County	Fallon, NV
Saturday, April 23	Earth Day Fair	Las Vegas, NV
Friday- Saturday, May 21-22	Armed Forces Day	Hawthorne, NV
Sunday- Thursday, May 22-26	ASQS Annual Quality Congress	Las Vegas, NV
Sunday- Thursday, May 22-26	IHLRWM	Las Vegas, NV
Sunday- Tuesday, June 12-14	SEARUC	TBD

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<u>Date</u>	<u>Event</u>	<u>Location</u>
J. <u>Exhibits Scheduled</u> (Continued)		
Sunday- Wednesday, June 12-15	American Association of Petroleum Geologists	Denver, CO
Friday- Saturday, June 17-18	Gridley Days	Austin, NV
Friday- Saturday, July 15-16	Mining Days	Battle Mountain, NV
Tuesday- Thursday, July 19-21	ANS	New Orleans, LA
Thursday- Saturday, August 11-13	Nevada League of Cities	Elko, NV
Friday- Sunday, August 12-14	Eureka County Fair	Eureka, NV
Thursday- Sunday, August 18-21	Lincoln County Fair	Panaca, NV
Friday- Sunday, August 19-21	Cantaloupe Festival	Fallon, NV
Tuesday- Tuesday, August 23-30	Nevada State Fair	Reno, NV
Saturday- Sunday, August 27-28	White Pine County Fair	Ely, NV
Friday- Sunday, September 30- October 9	Las Vegas Jaycees State Fair	Las Vegas, NV
Sunday- Friday, October 2-7	Association of Engineering Geologists	Williamsburg, VA
Sunday- Thursday, October 23-27	Geological Society of America	Seattle, WA

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<u>Date</u>	<u>Event</u>	<u>Location</u>
J. <u>Exhibits Scheduled</u> (Continued)		
Wednesday-Saturday, October 26-29	Nevada Library Association Joint Conference	Incline Village, NV
Sunday-Wednesday, November 13-16	ANS	Washington, DC
Wednesday-Friday, November 16-18	NACO Convention	Winnemucca, NV
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>		
Tuesday, February 15	Western Mining Corporation	TBD
Wednesday, February 16	Quannah McCall Sixth Grade Center	TBD
Friday, February 18	South Mountain High School	TBD
Thursday, February 24	Inyo County Grand Jury	TBD
Friday, February 25	Japan Atomic Industrial Forum	TBD
Saturday, February 26	Public Open House (P)	Various Escorts
Thursday, March 3	Japan Electric Power Information Center, Inc.	TBD
Tuesday, March 8	St. Cloud State University (MN)	TBD
Thursday, March 10	Laughlin High School	TBD
Tuesday, March 15	Jewish War Veterans	TBD
Wednesday, March 16	Fremont Middle School	TBD

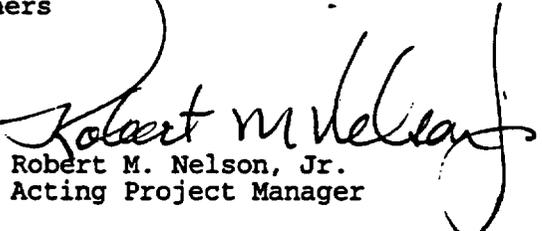
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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled</u> (Continued)		
Saturday, March 19	Public Open House (P)	Various Escorts
Monday, March 21	NWTRB	W. Dixon
Tuesday, March 22	Boulder City Bureau of Reclamation	TBD
Wednesday, March 23	Fremont Middle School	TBD
Tuesday, March 29	W. Mac Lyon Middle School	TBD
Thursday, March 31	National Council, State Garden Club Specific Region Convention	TBD
Thursday, April 7	Southern States Energy Board Advisory Committee on Radioactive Materials Transportation	TBD
Friday, April 8	State of Nevada Technical Review Committee	TBD
Tuesday, April 12	Thurman White Middle School	TBD
Thursday, April 14	Trinity Life Center Seniors	TBD
Friday, April 15	Desert Survivors	TBD
Saturday, April 16	Public Open House (P)	Various Escorts
Monday, April 18	Institute of Shaft Drilling Technology	TBD
Wednesday, April 20	Cannon Junior High School	TBD
Thursday, April 21	St. Frances School	TBD
Thursday, May 12	CVT Gilbert Sixth Grade Center	TBD

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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled</u> (Continued)		
Monday, May 16	African-Americans in Favor of the Yucca Mountain Studies	TBD
Tuesday, May 17	Active Adult Tours	TBD
Thursday, May 19	Western High School	TBD
Monday, May 23	American Society for Quality Control Conference	TBD
Friday, May 27	IHLRWM	TBD
Thursday, June 16	National Federation of Press Women	TBD
Thursday, September 29	National Association of Regulatory Utility Commissioners	TBD

YMP:CLH-2121



Robert M. Nelson, Jr.  
Acting Project Manager



**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

**FEB 22 1994**

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

OFFICE OF GEOLOGIC DISPOSAL WEEKLY HIGHLIGHTS FOR THE WEEK ENDING  
FEBRUARY 4, 1994 (SCP: N/A)

I. FORECAST SIGNIFICANT EVENTS

Meetings

A Stakeholders meeting will be held Thursday-Friday, February 10-11, 1994, in Las Vegas, Nevada, with representatives from Affected Units of Government.

Technical Program Review will be held February 14-18, 1994. The U.S. Department of Energy (DOE) and program participants will participate in this open comprehensive technical review.

Representatives from the Yucca Mountain Site Characterization Project Office (YMPO) and the West Las Vegas African Americans for Study of Yucca Mountain will meet with Dr. Ramona Edelin, president of the National Urban Coalition, on February 24, 1994.

II. CRITICAL ITEM STATUS - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT (YMP)

A. Site Characterization Activities

ESF

Construction

On job package (JP) 92-20, ESF North Portal Pad and Facilities, installed Multi-Purpose Borehole Extensometer instrumentation in the test alcove. Began mobilizing to drill boreholes to support radial borehole and hydrologic testing in the test alcove. The U.S. Geological Survey (USGS) selected locations and orientations of the three radial boreholes to be drilled in ESF Test Alcove 1 next week.

Continued placement of bedding sand in the trench and installation of the pipe for the water line. Continued placing and compacting backfill (center loading) in the water line trench between Well J-13 and the Booster Pump Station.

Began erecting concrete batch plant.

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Construction is continuing on the 69kV power distribution system with trenching for the duct banks and manholes on the pad. Completed placing of concrete for conduits for the 69kV substation on the North Portal Pad. Began placing of rebar for ductbanks. Continued installation of power poles and power lines for temporary power on the pad.

Continued rework of Canyon Substation and modification to switchgear at the substation. Completed removal of the existing transformer pad and the forming for a new pad.

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

69kVA power available  
at the North Portal

February 14, 1994

#### Design

Completed baselining drawing and specifications for Package 2A by the YMP Change Control Board (CCB). Continued formal comment resolution for Design Packages 2B and 1C. Continuing design activities for Packages 1D and 2C.

#### Site Characterization Testing

Exploratory drilling operations progress is summarized as follows:

Borehole	Current Core Depth 02/04/94	Current Ream Depth 02/04/94	Total Planned Depth
UZ-14	1,442.1 feet	1,421.6 feet	2,000 feet
NRG-7/7A	1,243.4 feet	302.1 feet	1,445 feet

On UZ-14, work is temporarily suspended pending mobilization of alternative drilling equipment to the site.

On JP 93-15, Borehole NRG-7A, a direction survey at 1,212 feet showed a 6.75 degree southeast deviation.

On Boreholes NRG-4 and NRG-5, workovers were completed on February 2, 1994.

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

On JP 94-04, Borehole SD-12 Drill Pad and Access Road, drilling started on January 28, 1994, with the LM-300 drill rig. The core depth is 39.2 feet and the ream depth is 16.9 feet. Surface casing is currently being set.

On JP 94-03, UE-25 NRG-2c, North Ramp Borehole, drilling activities began on February 3, 1994. The current depth is 12.25 feet. The planned total depth is approximately 160 feet. Delivery of 10 3/4-inch casing to the location is pending. The rig has been shut down and secured.

On JP 92-05, Trenches A-1 and MWV-T3 (Alice Ridge), the soils report has been issued. The trenches are now ready for mapping.

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On JP 94-02, Exile Hill (West Side) Trenches, excavation is now complete and installation of shoring is pending.

The JP and work authorization is expected next week for the SD-9 Drill Pad and Road. Construction will start upon issuance of same.

Conducted 11 core examinations at the Sample Management Facility (SMF) for Sandia National Laboratories, USGS, the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O), Los Alamos National Laboratory (Los Alamos), and the Nuclear Waste Project Office.

Created approximately 29 specimens from core samples for analysis by Principal Investigators.

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

SCP ACTIVITY	TITLE	COMMENTS
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
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

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SCP ACTIVITY	TITLE	COMMENTS
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

Twelve surveillances were performed by the Safety and Health Division during this reporting period.

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

Stabilization of the topsoil stockpile at the concrete batch plant was completed.

#### LET

A second shift has started work on the heater block tests.

#### Regulatory Interactions

Secretarial concurrence on Progress Report (PR) 9 was received on February 1, 1994, and a camera-ready copy is being prepared for transmittal to DOE/Headquarters (HQ) for printing and distribution. An informal copy of the PR will be transmitted to the U.S. Nuclear Regulatory Commission (NRC) next week. Printing and distribution of the document are scheduled to be completed by February 18, 1994. Not-readily-available references for PR 9 are being assimilated.

Guidance for preparation of PR 10 is being prepared and is scheduled to be received by the participants by February 14, 1994. This will start preparation of the PR several weeks earlier and allow considerably more preparation time.

Acceptance reviews of CRWMS M&O deliverables have been completed on Technical Reports 171 and 232, Annual Technical Implementation Plans for Work Breakdown Structure Elements 1.2.3 and 1.2.5, respectively. Both plans will be considered acceptable if major comments are responded to satisfactorily, and memoranda documenting requirements for acceptability are in concurrence.

#### Site Characterization Plan/Study Plan (SP) Status

The NRC completed initial review of two SPs: SP 8.3.1.2.2.7, Revision 1, "Hydrochemical Characterization of the Unsaturated-Zone;" and SP 8.3.1.3.6.2, "Diffusion." One SP was submitted to the YMPO this week: the activity .2, Underground Nuclear Explosions (UNE), SP 8.3.1.17.3.3, "Ground Motion from Regional Earthquakes and UNEs." No SPs were approved by YMPO this week.

SP BREAKDOWN

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	Initial Plans	Major Revisions
Not Submitted to YMPO .....	35	0
In Screening Review .....	1	0
In YMPO Review .....	2	0
Awaiting Comment Resolution .....	3	3
In Verification Audit .....	5	1
Awaiting YMPO Approval .....	1	0
Awaiting Submission to the NRC .....	0	0
Awaiting NRC Initial Review .....	7	5
Accepted by NRC .....	50	6
Totals .....	<u>104</u>	<u>15</u>
Total Submitted to NRC .....	57	10

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State of Nevada Comments Status:

Received Comments from the State of Nevada.....	29
Responses Transmitted to the State of Nevada .....	19

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NRC Comments Status:

Received Comments from NRC .....	29
Responses Transmitted from the U.S. Department of Energy (DOE) to NRC .....	25

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B. Project Planning and Control

Loaded Monitored Retrievable Storage (MRS) and 9LEG data for December 1993 and produced Planning and Control System reports. Transferred YMP, MRS, and 9LEG data to the program data base and ran produced reports at the program level for the Directors Program Review (DPR) on February 17, 1994.

Staff from CRWMS M&O accompanied Ardyth Simmons, YMPO, to Lawrence Livermore National Laboratory to develop revised planning for the LBT. This was in response to an action assigned during the January 24, 1994, DPR Dry Run.

Preliminary logic has been developed, and review and revisions are underway. The final plan will be reflected in the next participant upload.

Developed a conceptual plan for a Project Management briefing room and presented it to Vincent Iorii and Russell Dyer, YMPO. Proceeding with detail design plan and preliminary report production.

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C. Quality Assurance ImplementationQuality (O)-List Procedure Development

Implementation of the Corrective Action Response (CAR) against CAR YM-94-012 continues with presentations to the Assessment Team (AT) on various aspects of Probabilistic Risk Assessment.

Q-List and Management Control-List Implementation

A change to the Q-List regarding the test alcove in the North Ramp Starter Tunnel is being prepared to include the intersection transition.

Classification and Waste Isolation Evaluations Review

The AT has reviewed revision 7 to the Starter Tunnel Determination of Importance and comments will be sent to YMPO.

An assessment on control of water introduced into the subsurface during ESF construction and operation was completed and is in AT review.

III. GENERAL INFORMATION ITEMS

The staff participated in the following: the NRC site visit on field evidence for the Erosion Topical Report February 1-2, 1994, at the Yucca Mountain site; the Nye County Erosion field trip on February 3, 1994; and the DOE/NRC technical meeting on the ESF February 3, 1994, in Las Vegas.

A summary was prepared regarding Civilian Radioactive Waste Management activities on materials for the Energy Materials Coordinating Committee Annual Report.

Participated in discussions on alternative program scenarios and preparation of briefing materials for the Director, Office of Civilian Radioactive Waste Management (OCRWM).

Prepared summary of DOE activities and preliminary positions on the development of a new U.S. Environmental Protection Agency Standard applicable to a repository at the Yucca Mountain site.

In support of the thermal loading systems study, the impact of subrepository-scale, buoyant, gas-phase convection on hydrothermal performance in the vicinity of emplacement drifts was studied. The most important observation concerns the substantial difference between thermal performance predicted by repository-scale models and that predicted by drift-scale models. For an areal mass loading (AML) of 24.2 metric tons of uranium (MTU)/acre, the repository-scale model predicts a peak temperature of 65 degrees Celsius (C), while the drift-scale model predicts peak temperatures of up to 172 degrees C on the waste package surface and 144 degrees C in the rock adjacent the drift. While the repository-scale model predicts no boiling period, the drift-scale

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model predicts boiling for up to 350 years on the waste package surface. Another important observation about subrepository-scale performance is that the peak temperature varies modestly for AMLs ranging from 24.2 to 55.3 MTU/acre. Because it occurs so early (generally the temperature peak occurs within 25 years of emplacement), the peak temperature is relatively insensitive to whether the distance to the adjacent emplacement drift is 43.4 meters or 99.0 meters. For the high AML cases, the drift spacing is small enough to cause the peak temperature to be sensitive to center-to-center drift spacing. Consequently, the peak temperature is significantly greater for the 110.5-MTU/acre case than for the 83.4-MTU/acre case. Another important observation is that the boiling duration is insensitive to subrepository-scale, buoyant, gas-phase convection for the low and high AML cases (24.2, 35.9, and 110.5 MTU/acre) and modestly sensitive for intermediate-AML cases (55.3 and 83.4 MTU/acre). The spatial extent of moisture movement (i.e., dry-out and condensate buildup) is very dependent on the magnitude of subrepository-scale, gas convection for the low AML cases and insensitive for the high AML cases.

The Los Alamos staff attended a meeting at YMPO to resolve comments on the SP, "Batch Sorption Studies and the Development of Sorption Models." All comments were resolved in a satisfactory manner.

The Los Alamos staff discussed possible ways to elucidate the nature of the vitric-zeolitic transition in the Calico Hills formation. Detailed knowledge of this transition (i.e., whether it is abrupt or gradational and where it occurs across Yucca Mountain) is important in designing ESF tests of this transition and for predicting hydrologic flow at the boundary across the mountain.

Tables were compiled by Los Alamos that show the combined X-ray fluorescence, instrumental neutron activation analysis, quantitative X-ray diffraction, and ion chromatography data, as applicable, for the samples used in the Trench 14 study.

Several sorption samples that exhibited unusually high bulk permeability values for neptunium were analyzed using X-ray powder diffraction by the Los Alamos mineralogy/petrology staff. They found that the samples contain opal, calcite, and sepiolite. Additional samples of opal were provided to the sorption tasks for further sorption experiments.

Criteria statements for the kinetics and thermodynamics study were finalized.

Completed preliminary draft of the fiscal year 1995 Technical Implementation Plan.

On rock characteristics, USGS continued to work on revisions to the lithostratigraphic nomenclature on Yucca Mountain and identified lithology and contacts in additional core. Detailed measurements on a stratigraphic section in Solitario Canyon were performed, along with the continued mapping of Antler Ridge Pavement #1 and other mapping work on Yucca Mountain.

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On tectonics, USGS participated in a field trip for the NRC, which was also attended by representatives from the state and affected counties, to look at exposures described in a recent USGS report on erosion rate studies at Yucca Mountain. Stops included Fortymile Wash, Jake Ridge, and Buckboard Mesa to view terraces, canyon-cutting, erosional events, and colluvial boulders.

#### IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

The YMP sponsored a Girl Scouts geology field trip on January 29, 1994, for ten Amargosa Valley Girl Scouts.

An educational presentation on geology was given to 50 students at Marion B. Earl Elementary School in Las Vegas on February 1, 1994. Educational presentations on energy were given in Las Vegas to 105 students at C. P. Squires Elementary School and to 60 students at Ruth Fyfe Elementary School, both on February 2, 1994; and to 60 students at Ruth Fyfe Elementary School on February 3, 1994. An educational presentation on "Gee Whiz Science" was given to 200 students at Fitzgerald Elementary School in Las Vegas on February 4, 1994.

Presentations on Native American Culture were given in Las Vegas to 60 students at Lewis E. Rowe Elementary School on February 2, 1994; to 200 students at Cannon Middle School on February 3, 1994; and to 10 people at the University of Nevada, Las Vegas, on February 4, 1994.

A general YMP overview was given to 20 guests of the Uptown Kiwanis Club on February 3, 1994, in Las Vegas. A general overview with emphasis on engineering was given to 20 guests of American Society of Civil Engineers/Engineering Design for the Community on February 3, 1994, in Irvine, California.

Tours to Yucca Mountain were conducted on January 31, 1994, for 7 guests from the Steering Committee on High-Level Radioactive Waste Project - Japan, and for 19 guests from the Advisory Committee on Nuclear Waste (ACNW). Tours were also conducted February 1-2, 1994, for 40 guests from the NRC; on February 3, 1994, for a guest from Duke Engineering & Services, Inc. and for two guests from H. G. Hill Company; and on February 4, 1994, for 200 guests from the American Nuclear Energy Council. A pretour general overview presentation was given to the group from the American Nuclear Energy Council at the Las Vegas Yucca Mountain Science Center, by Robert Nelson, Project Manager.

YMP personnel set up and staffed an exhibit for the Southern Nevada Council for the Social Studies in Las Vegas on February 4, 1994. Approximately 300 people visited the displays.

The YMP staff completed 30 external information requests. This was accomplished by providing written responses to written and verbal queries and/or by supplying existing literature.

The YMP staff continued planning and finalizing arrangements for the Public Participation Plan meeting for the Affected Units of Government on February 10, 1994, and for the Affected Units of Government meeting on February 11, 1994, in Las Vegas.



## 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

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

OFFICE OF GEOLOGIC DISPOSAL WEEKLY HIGHLIGHTS FOR THE WEEK ENDING  
JANUARY 28, 1994 (SCP: N/A)

### I. FORECAST SIGNIFICANT EVENTS

#### Site Characterization Activities

##### Exploratory Studies Facility (ESF)

Continue comment resolution from the 90 percent design reviews for Design Packages 2B and 1C. Continue design activities for Packages 1D and 2C.

Begin drilling boreholes to support radial borehole and hydrologic testing in the test alcove.

Continue construction on the 69kV power distribution system with continuation of trenching for duct banks and manholes on the pad and for the 69kV substation on the North Portal Pad. Continue installation of temporary power line on the pad.

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

Continue placement of bedding sand in the trench and installation of the pipe for the water line. Also, continue placing and compacting backfill (center loading) in the water line trench between Well J-13 and the Booster Pump Station. Begin removal of topsoil from tank pads on Exile Hill to the North Portal Pad.

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

Drilling will continue at NRG-7/7A. The LM-300 drilling rig will be set up on the USW SD-12 location. The Stratmaster drilling rig will be set up on UZ-14. One more round will be blasted in the ESF. Rock sawing will continue at the large block. Water level and water pressure testing is tentatively scheduled to begin at the C-Well Complex. Auger drilling and sampling should be completed at NRT-1 and additional excavation is planned.

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II. CRITICAL ITEM STATUS - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT (YMP)

A. Site Characterization Activities

ESF

Construction

Completed excavation of the test alcove with the drilling, loading, shooting, mucking, and installing of ground support for NP-TA-018. Also, completed mapping of the test alcove. The face of the test alcove at the completion of excavation is at 34.5 meters (00+113 feet), measured from the center line of the starter tunnel.

Continued placement of bedding sand in the trench and installation of the pipe for the water line. Continued placing and compacting backfill (center loading) in the water line trench between Well J-13 and the Booster Pump Station. Completed removal of topsoil at the tank pads on Exile Hill.

Completed forming and pouring concrete for the concrete batch plant foundation.

Construction is continuing on the 69kV power distribution system with trenching for the duct banks and manholes on the pad. Began placing concrete for conduits for the 69kV substation on the North Portal Pad. Began installation of the temporary power line on the pad.

Began rework of Canyon Substation with removal of the existing transformer pad and the forming for a new pad.

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

69kVA power available  
at the North Portal February 14, 1994

Design

Completed baselining drawing and specifications for Package 2A by the YMP Change Control Board. Began formal comment resolution for Design Package 2B. Conducted the 90 percent design review meeting on Package 1C and began comment resolution. Continuing design activities for Packages 1D and 2C.

SBT

Exploratory drilling operations progress is summarized as follows:

<u>Borehole</u>	<u>Current Core Depth 01/28/94</u>	<u>Current Ream Depth 01/28/94</u>	<u>Total Planned Depth</u>
UZ-14	1,442.1 feet	1,421.6 feet	2,000 feet
NRG-7/7A	1,134.9 feet	302.1 feet	1,445 feet

On UZ-14, the LM-300 drilling equipment was moved off of the location. Alternative drilling equipment will be mobilized at a later date for completion of the hole to planned depth of 2,000 feet.

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On Job Package (JP) 92-05, Trenches A-1 and MWV-T3, Alice Ridge excavations are complete. The Soils Engineer report will be provided before mapping.

On trenching on the West Side of Exile Hill, mapping and surveying of the exposed portion of Trench NRG-1 was completed. Numerous tests for material density and load bearing capacity were completed. Sampling using an auger drilling rig started on January 13, 1994, and is continuing.

JP 92-3, UZ-16, air permeability testing is scheduled to continue through March 1994.

On JP 94-04, SD-12 Borehole Drill Pad and Access Road, the LM-300 drilling rig and support are on the site. Drilling will begin by January 31, 1994.

On C-Hole Complex Multiple-Well Hydraulic Interference Testing, Phase I, installation of a packer assembly in UE-25 c#1 was completed on January 20, 1994. The work has been slowed by leaking from the packers.

Conducted 21 core examinations at the Sample Management Facility (SMF) for Sandia National Laboratories (SNL); the U.S. Geological Survey (USGS); the U.S. Department of Energy (DOE); the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O); Raytheon Services Nevada; University of Nevada, Reno (UNR); and the Nuclear Waste Project Office.

Created approximately 21 specimens from core samples for analysis by Principal Investigators.

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

SCP ACTIVITY	TITLE	COMMENTS
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
8.3.1.2.1.1	Precipitation & Meteorological Monitoring for Regional Hydrology	Ongoing measurements
8.3.1.2.1.2	Runoff & Streamflow	Ongoing measurements

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SCP ACTIVITY	TITLE	COMMENTS
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

Thirty-five surveillances were performed by the Safety and Health Division during this reporting period.

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

The Underground Injection Control Permit quarterly and annual reports were submitted to the Nevada Division of Environmental Protection.

Staff scientists participated in the 90 percent design review of Design Package 1C, including a presentation addressing environmental issues.

The groundwater appropriation permit for beneficial use of the water to be discharged from the C-Well Complex was received from the Nevada State Engineer.

Large Block Test (LBT)

Sawing is in progress to excavate the sides of the LBT of Topopah Spring welded tuff.

Site Characterization Progress Report

Progress Report 9 completed external DOE concurrence (General Counsel, Policy, and Congressional) and is now in Executive Secretariat.

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Advisory Committee on Nuclear Waste (ACNW) Interactions

The ACNW will be touring Solitario Canyon trenches and the Ghost Dance Fault on January 31, 1994. This site tour is a follow-up to their December 1993 meeting.

Issue Resolution

The Issue Resolution Steering Group will be meeting February 11, 1994, in a video conference from 10 a.m. to 2 p.m. PST. Topics for discussion include the Seismic Hazards Topical Report status.

Site Characterization Plan/Study Plan (SP) Status

No SPs were approved by the Yucca Mountain Site Characterization Project Office (YMPO) this week.

SP BREAKDOWN

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	Initial Plans	Major Revisions
Not Submitted to YMPO .....	36	0
In Screening Review .....	0	0
In YMPO Review .....	2	1
Awaiting Comment Resolution .....	3	2
In Verification Audit .....	5	1
Awaiting YMPO Approval .....	1	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

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State of Nevada Comments Status:

Received Comments from the State of Nevada..... 29  
Responses Transmitted to the State of Nevada ..... 19

NRC Comments Status:

Received Comments from NRC .....

Responses Transmitted from DOE to NRC .....

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B. Project Planning and Control

Completed November 1993 Planning and Control System (PACS) status for Monitored Retrievable Storage and Program Support.

The PACS interpreted scheduled forecast of a potential 30-day slip to the 30-meter ESF excavation milestone planned for September 1994. A tiger team has begun efforts to develop and implement a work around to avoid the slip.

Met with Dennis Williams, DOE, to provide a detailed explanation of the analysis performed on the Lawrence Livermore National Laboratory LBT variance. The Project Control Support staff will provide Dennis Williams, at his request, with a viewgraph to use to explain this complex variance in the next YMPO Monthly Management Meeting or Directors' Program Review if necessary.

C. Quality Assurance Implementation

Q-List and Management Control (MC)-List Implementation

A change to the Q-List and MC-List regarding test alcoves in the north ramp is being prepared.

III. GENERAL INFORMATION ITEMS

Reviewed and provided comments on Section 801 Working Group documents addressing proposed DOE 801 positions and issues framework.

Participated in the Geochemistry Integration Team teleconference on January 24, 1994.

Provided Princeton Research with a summary of National Advanced Drilling and Excavation Technologies Conference presentation given on December 7, 1993.

On WBS 1.2.2.3.2, Metal Barriers, work continues on the sensitivity of the predicted median pit induction time, median number of pits, and median pit depth to the number of "cells" used in the stochastic simulations. At least several hundred cells are required to provide median values of pit quantity and depth that are independent of the number of cells used; the pit induction time appears to be less sensitive to the number of cells. The results of the numerical experiments performed this month using up to 10,000 cells show that the median number of pits and the median depth "saturate" at essentially constant values once the number of cells reaches approximately 400 cells. The presence of this saturation was not clear from the numerical experiments performed last month with fewer total cells.

Neptunium sorption results have been validated for Topopah Spring and Calico Hills tuff using crushed-rock columns. It was found that neptunium sorption onto zeolitized tuff is significantly greater than onto nonzeolitized tuff.

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The Technical Analysis Branch staff continued preparations for the Technical Program Review in February 1994 and prepared input to the three-year review of CRWMS M&O's performance. Review continued of the Technical Integration Plan for WBS 1.2.5 and the Total System Performance Assessment (TSPA) 1993 documents from SNL and CRWMS M&O.

The Performance Assessment staff participated in the Pneumatic Pathways Workshop conducted by Nye County at the Thomas and Mack Center in Las Vegas January 26-27, 1994. The purpose of the meeting was to investigate our ability to define gaseous flow in the unsaturated zone. Representatives from Nye County, State of Nevada, YMPO, USGS, national laboratories, and other invited guests were in attendance. Consensus of opinion: DOE has developed an adequate plan for determining pneumatic pathways and has the infrastructure to execute the plan.

A Los Alamos National Laboratory (Los Alamos) paper entitled, "Dehydration and Rehydration of a Tuff Vitrophyre," has been published (Journal of Geophysical Research, 98, 22309-22320).

The Los Alamos staff presented a talk entitled, "Identification and age of Distal ashes from the Lathrop Wells Volcanic Center in Fault Exposures near Yucca Mountain," at the Yucca Mountain Tectonics Workshop in Estes Park, Colorado. They discussed their recent field, geochemical, and geochronologic studies at the Lathrop Wells volcanic center in which they have identified four major eruptive episodes separated from each other by erosional nonconformities or soil development.

Performed respirable sampling at NRG-7 on two drillers and two geologists. Also sampled respirable dust at the SMF warehouse during janitorial activities.

Completed preliminary draft of a project administrative procedure implementing YMP/93-01, Operation and Maintenance Management Plan.

Laid out environmental clearance boundaries, prepared layout drawing, and detailed directions for locating access trails to the Stagecoach Road Shallow Boreholes.

On rock characteristics, USGS continued working on revisions to the geologic cross-sections of the ESF North Ramp and selected stratigraphic contacts in cores from USW NRG-7/7A and USW UZ-14. The final 25 feet of Test Alcove #1 in the ESF was mapped on January 26, 1994. Work continued on isopach and structural contour mapping for the LYNX three-dimensional geologic model of the site.

The USGS Tectonics group held a meeting of all hands in Colorado this week to discuss the current status of the investigations and plan additional work. The location of a proposed stratigraphic borehole on the hanging wall block of the Stagecoach Road Fault at SCRT #1 was staked and environmental clearance areas were flagged.

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#### IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

Several educational presentations were given. These included presentations in Las Vegas, Nevada, on paleontology to 60 students at Johnson Junior High School on January 25; on "Gee Whiz Science" to 250 students at Ruby Thomas Elementary School on January 26; and on nuclear energy as an energy source to 125 students at Garside Middle School on January 26, 1994. A presentation on caving was given to 100 students at Estes M. McDoniel Elementary School in Henderson, Nevada, on January 26, 1994. A presentation on Native American Culture was also given on January 28, 1994, to 100 students at Ute Perkins Elementary School in Moapa, Nevada.

A general YMP overview was given to 100 students of the Green Valley High School Key Club on January 25, 1994, in Las Vegas.

The Yucca Mountain Speaker Series presentation, "Constructing a Tunnel to Study a Mountain," was presented by Daniel McKenzie, CRWMS M&O, and John Peck, Technical and Management Support Services, at the Las Vegas Yucca Mountain Science Center (YMSC), on January 25, and at the Beatty, Nevada, YMSC, on January 27, 1994. A total of approximately 45 people attended these presentations.

A Public Open House tour of Yucca Mountain was coordinated and conducted on January 22, 1994, for 183 people. Tour participants visited the YMSCs, the Field Operations Center, two laboratories, the LM-300 drill rig, the top of Yucca Mountain, and the ESF north portal construction area.

A tour of Yucca Mountain was conducted on January 27, 1994, for 20 guests of the Procurement and Property Management Review Team.

The YMP staff attended the Nye County Educational Working Group meeting on January 25 in Las Vegas, and the Nye County-sponsored Pneumatic Pathways Workshop January 26-27, at the University of Nevada, Las Vegas. They also attended the Transportation Coordination meeting January 26-27, in Dallas, Texas; and the State of Nevada meeting with Esmeralda County on January 28, 1994, in Carson City, Nevada.

The YMP staff met with Senator Hickey and UNR representatives on January 26, 1994, in Reno, Nevada, to discuss interactive video network capabilities for potential communication linkage between the Nevada legislature, the affected units of government, and DOE.

The Institutional and External Affairs staff completed development of the February Speakers Series fliers which were distributed internally and to the Las Vegas and Beatty YMSCs. The fliers will be modified as newspaper announcements in February 1994.

The YMP staff completed 23 external information requests. This was accomplished by providing written responses to written and verbal queries and/or by supplying existing literature. Ten 1993 Year in Review progress books were mailed to the African Americans in Favor of Yucca Mountain Studies.

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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 Jackie 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) 794-7769, 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>
<b>A. <u>Stakeholders Meetings</u></b>			
Thursday- Friday, February 10-11	Affected Units of Government	Las Vegas, NV	E. Lundgaard
<b>B. <u>DOE/Headquarters Meetings</u></b>			
Monday- Friday, February 14-18	DOE/YMP Technical Program Review (P)	Las Vegas, NV	R. Nelson
Wednesday, February 17	Office of Civilian Radioactive Waste Management Directors Program Review (P)	Videoconf.	R. Nelson
<b>C. <u>CRWMS M&amp;O/DOE Meetings</u></b>			
Tuesday, February 22	CRWMS M&O Program Management Review (P)	Videoconf.	R. Nelson
<b>D. <u>Internal and DOE/Nevada Operations Office (NV) Meetings</u></b>			
Wednesday, February 23	NV Manager's Monthly Program Review	Las Vegas, NV	R: Nelson
Friday, February 25	Project Manager/ Technical Project Officers Meeting	Las Vegas, NV	R. Nelson
Friday, February 25	Planning and Budget Meeting	Las Vegas, NV	R. Nelson
<b>E. <u>NRC Interactions</u></b>			
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

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
E. <u>NRC Interactions</u> (Continued)			
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
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

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<b>F. <u>Nuclear Waste Technical Review Board (NWTRB) Interactions</u></b>			
Tuesday- Wednesday, March 8-9	NWTRB - Structural Geology and Geoengineering Panel (P)	San Francisco, CA	D. Williams
Thursday- Friday, March 10-11	NWTRB - Engineered Barrier System Panel (P)	Pleasanton, CA	W. Simecka
Monday- Tuesday, March 21-22 (Tentative)	NWTRB - Environment and Public Health 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>ACNW Interactions</u></b>			
Monday, January 31	ACNW Site Tour	Yucca Mountain, NV	T. Sullivan M. Tannin
Wednesday- Thursday, February 23-24	61st ACNW Meeting Topic TBD (P)	Bethesda, MD	A. Gil
Tuesday, March 22	ACNW Working Group on Low-Level Waste Performance Assessment	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

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<b>G. <u>ACNW Interactions</u> (Continued)</b>			
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
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	Washington, D.C.	S. Jones
Thursday- Friday, April 28-29	NAS Committee on Yucca Mountain Standards (P)	Las Vegas, NV	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 29	Amargosa Valley Girl Scouts - Geology Field Trip	Las Vegas, NV	A. Gil C. Newbury L. Linden
Tuesday, February 1	Marion B. Earl Elementary School - Geology	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouville
Wednesday, February 2	C. P. Squires Elementary School - Energy	N. 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)			
Wednesday, February 2	Ruth Fyfe Elementary School - Energy	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Wednesday, February 2	Lewis E. Rowe Elementary School - American Indian Culture	Las Vegas, NV	R. Arnold
Thursday, February 3	Ruth Fyfe Elementary School - Energy	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Thursday, February 3	Uptown Kiwanis Club - General Overview	Las Vegas, NV	D. Bradford
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	J. Peck
Friday, February 4	Pretour Briefing, American Nuclear Energy Council - General Overview	Las Vegas, NV	B. Nelson
Friday, February 4	University of Nevada, Las Vegas - Native American Culture	Las Vegas, NV	R. Arnold
Tuesday, February 8	Marion B. Earl Elementary School - Geology	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Wednesday, February 9	Ruby Thomas Elementary School - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Wednesday, February 9	Conference on Radiation Control Program Directors - TBD	Las Vegas, NV	R. Dyer

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions (Continued)</u>			
Wednesday- Thursday, February 9-10	Myrtle Tate Elementary School - Geology	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Friday- Sunday, February 11-13	1994 Nevada Regional High School Science Bowl	Las Vegas, NV	E. Harle
Saturday, February 12	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Monday, February 14	Las Vegas Gem Club - General Overview/Update	Las Vegas, NV	J. Peck
Tuesday- Thursday, February 15-17	4-H T.E.C. - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, February 16	Roy Martin Junior High School - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, February 16	White Pine County High School - YMP Update	Ely, NV	B. Bush J. Peck P. Standish
Saturday, February 19	National Organiza- tion for Women - General Overview	Las Vegas, NV	TBD
Tuesday, February 22	Fremont Middle School - Caving	Las Vegas, NV	L: Cuba
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
Monday- Saturday, February 28- March 12	JASON Project - "Rain Forest"	Las Vegas, NV	E. Harle
Tuesday, March 1	Solo Club - Native American Culture	Las Vegas, NV	R. Arnold

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
Thursday, March 3	Waste Management Symposia - Update on Site Characterization	Tucson, AZ	M. Blanchard
Monday, March 7	Derfelt Elementary School - Native American Culture	Las Vegas, NV	R. Arnold
Wednesday, March 9	Youth Leadership Las Vegas Program - Environmental	Las Vegas, NV	D. Bradford M. d'Ouille
Thursday, March 10	Fremont Middle School - General Overview/Geology	Las Vegas, NV	D. Merritt
Saturday, March 12	Expanding Your Horizons - Math & Science	Las Vegas, NV	A. Gil L. Linden
Tuesday, March 15	Ute Perkins Elementary School - Energy	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Wednesday, March 16	American Nuclear Society (ANS) - TBD	San Diego, CA	J. Peck
Wednesday, March 16	San Diego Association of Geologists - General Overview	San Diego, CA	G. Fasano
Friday, March 18	Girl Scout Conference - Native American Culture	Las Vegas, NV	R. Arnold
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
Thursday, March 24	Moonstruck Gallery - Native American Culture	Las Vegas, NV	R. Arnold

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions (Continued)</u>			
Sunday, March 27	Yucca Mountain Speaker Series (P) - "Desert Beauties - Spring Wildflowers"	Pahrump, NV	K. Wirtz
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
Thursday, April 7	Association for Education in Journalism and Mass Communication - General Overview	Reno, NV	TBD
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
Thursday, April 14	Oran Gragson Elementary School - Geology	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
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

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
<b>I. <u>State and Public Interactions (Continued)</u></b>			
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
Wednesday, May 4	Chester T. Sewell Elementary School - Fifth Grade Field Trip - Energy	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Wednesday, May 11	Chester T. Sewell Elementary School - Fifth Grade Field Trip - Energy	Las Vegas, NV	J. Brandt J. Sizemore M. d'Ouille
Tuesday, May 17	Role of Nevada's Scientific and Engineering Community in the Yucca Mountain Suitability Study	Las Vegas, NV	Various YMP Staff
Tuesday, May 31	LESSON Teacher Workshop - Science Workshop	Nevada Test Site, NV	TBD
Saturday, June 4	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Sunday, June 12	Southeast Area Regulatory Utility Commissioners Conference - TBD	Charleston, SC	TBD
Monday, June 13	LESSON Teacher Workshop - Science Workshop	Las Vegas, NV	TBD

<u>Date</u>	<u>Event</u>	<u>Location</u>
<b>J. <u>Exhibits Scheduled</u></b>		
Monday- Wednesday, February 14-16	Society for Mining and Metallurgy	Albuquerque, NM

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<u>Date</u>	<u>Event</u>	<u>Location</u>
J. <u>Exhibits Scheduled</u> (Continued)		
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- Wednesday, March 21-23	Geological Society of America - Cordilleran Section	San Bernardino, CA
Thursday- Sunday, April 7-10	Clark County Fair	Logandale, NV
Saturday, April 16	Public Open House (P)	Las Vegas, NV
Saturday, April 16	Churchill County	Fallon, NV
Saturday, April 23	Earth Day Fair	Las Vegas, NV
Friday- Saturday, May 21-22	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	International High-Level Radioactive Waste Management (IHLRWM)	Las Vegas, NV
Sunday- Tuesday, June 12-14	SEARUC	TBD
Sunday- Wednesday, June 12-15	American Association of Petroleum Geologists	Denver, CO
Friday- Saturday, June 17-18	Gridley Days	Austin, NV

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<u>Date</u>	<u>Event</u>	<u>Location</u>
J. <u>Exhibits Scheduled</u> (Continued)		
Friday- Saturday, July 15-16	Mining Days	Battle Mountain, NV
Tuesday- Thursday, July 19-21	ANS	New Orleans, LA
Thursday- Saturday, August 11-13	Nevada League of Cities	Elko, NV
Friday- Sunday, August 12-14	Eureka County Fair	Eureka, NV
Thursday- Sunday, August 18-21	Lincoln County Fair	Panaca, NV
Friday- Sunday, August 19-21	Cantaloupe Festival	Fallon, NV
Tuesday- Tuesday, August 23-30	Nevada State Fair	Reno, NV
Saturday- Sunday, August 27-28	White Pine County Fair	Ely, NV
Monday- Wednesday, August 29-31	Nuclear Information and Records Management Association	Milwaukee, WI
Thursday- Monday, September 1-5	Tri-County Fair	Bishop, CA
Friday- Sunday, September 16-18	Pahrump Harvest Days	Pahrump, NV
Saturday, September 24	Fallon Air Show	Fallon, NV
Friday- Sunday, September 30- October 9	Las Vegas Jaycees State Fair	Las Vegas, NV

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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
Wednesday- Friday, November 16-18	NACO Convention	Winnemucca, NV
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>		
Monday, January 31	Steering Committee on High-Level Radioactive Waste Project - Japan	TBD
Monday, January 31	ACNW	A. Gil S. Nesbit
Tuesday - Wednesday February 1-2	NRC	T. Bjerstedt
Wednesday, February 2	DOE/HQ	A. Gil S. Richardson
Thursday, February 3	Duke Engineering and Services, Inc.	TBD
Friday, February 4	American Nuclear Energy Council - Congressional Information Program Leadership Workshop	TBD
Wednesday, February 9	YMP Orientation	TBD

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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled</u> (Continued)		
Thursday, February 10	Conference of Radiation Control Program Directors Committee on Radioactive Materials Transportation	TBD
Thursday, February 10	Colorado School of Mines	TBD
Wednesday, February 16	Quannah McCall Sixth Grade Center	TBD
Friday, February 18	South Mountain High School	TBD
Thursday, February 24	Inyo County Grand Jury	TBD
Saturday, February 26	Public Open House (P)	Various Escorts
Thursday, March 3	Japan Electric Power Information Center, Inc.	TBD
Tuesday, March 8	St. Cloud State University (MN)	TBD
Thursday, March 10	Laughlin High School	TBD
Tuesday, March 15	Jewish War Veterans	TBD
Wednesday, March 16	Fremont Middle School	TBD
Saturday, March 19	Public Open House (P)	Various Escorts
Tuesday, March 22	Boulder City Bureau of Reclamation	TBD
Wednesday, March 23	Fremont Middle School	TBD
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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<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
Friday, April 8	State of Nevada Technical Review Committee	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, May 12	CVT Gilbert Sixth Grade Center	TBD
Tuesday, May 17	Active Adult Tours	TBD
Thursday, May 19	Western High School	TBD
Monday, May 23	American Society for Quality Control Conference	TBD
Friday, May 27	IHLRWM Conference	TBD
Thursday, June 16	National Federation of Press Women	TBD

  
Robert M. Nelson, Jr.  
Acting Project Manager

YMP:RVB-1944