



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

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

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

DATE: December 2, 1993

SUBJECT: OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING NOVEMBER 5, 1993 and YUCCA MOUNTAIN SITE OFFICE (YMSO) ACTIVITY REPORT FOR THE PERIOD FROM OCTOBER 30 TO NOVEMBER 12, 1993

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

WBS 1.2.9.2
QA: N/A

NOV 24 1993

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

OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING
NOVEMBER 5, 1993 (SCP: N/A)

I. FORECAST SIGNIFICANT EVENTS

Site Characterization Activities

Exploratory Studies Facility (ESF)

Design activities will continue with the verification and submittal of Package 2A drawings and specifications to the Yucca Mountain Site Characterization Project (YMP) Change Control Board. Design activities will continue for Packages 1C, 2B, and 2C.

Construction will continue on the 69kVA power distribution system with installation of the underground conduit and grounding grid for the temporary transformer.

It is planned to continue excavation of the trench for the water line and begin installation of the water pipe.

Surface-Based Testing

Coring and reaming will continue at NRG-7. Evaluation of sealing of the water-bearing zone will continue at UZ-14. Phased removal of casing and downhole video camera logging is tentatively scheduled for Boreholes NRG-2A and NRG-2B. Cleanup of the bedrock pavement along a portion of the Ghost Dance fault will continue. Borehole gas permeability testing will begin at UZ-16. Excavation of a drill pad and access road for Borehole SD-12 will continue. Mobilization of equipment will be completed and testing activities are expected to begin at the C-Hole Complex. Preparatory work will continue at the Large Block Experiment.

II. CRITICAL ITEM STATUS - (YMP)

A. Site Characterization Activities

ESF

Construction

Excavation was resumed on the test alcove. Continued grouting and pull testing of pattern bolts in the starter tunnel. Completed drilling of holes to support installation of a Multiple Position Borehole Extensometer (MPBX) in the starter tunnel. The face of the test alcove is at 11.9 meters (00+39 feet), measured from the starter tunnel wall, as of November 5, 1993.

Completed grading of right-of-way for the water line and began excavating the trench for the water line.

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Drilling support recovered core and cuttings from 81.1 feet to 248.1 feet from USW NRG-7/7A.

Removed 213 core specimens from samples for shipment to USGS and Sandia National Laboratories (SNL).

Conducted 12 core examinations at the Sample Management Facility by Principal Investigators from USGS, SNL, and Los Alamos National Laboratory (Los Alamos).

Continued development of a procedure to address ESF sample collecting activities.

Continued to provide monitoring and oversight of prototype drilling tool development activities currently being conducted at Colorado School of Mines.

The results of a safety inspection performed by the Safety and Health Compliance Department per Administrative Procedure (AP) 5.7 were submitted to the various contractors. The inspection was performed in the Bank of America Center in Las Vegas, Nevada.

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

SCP ACTIVITY	TITLE	COMMENTS
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

Four environmental compliance surveillances were conducted at the Yucca Mountain (YM), Nevada, site ensuring compliance with permit and programmatic requirements.

The Safety and Occupational Health staff performed ten surveillances: J-13 trench (4); ESF (2); Batch Plant area (2); UZ-16; and NRG-7A.

The field data collection portion of nighttime cold air movement studies and upper level air diffusion in the mountain terrain near YM was conducted this week. The studies were supported by the National Oceanic and Atmospheric Administration (NOAA) from Oak Ridge, Tennessee, and the NOAA/National Weather Service/Weather Service Nuclear Support Office from Las Vegas, as part of the scientific investigation for Characterization of Wind Patterns Relative to Population Centers.

The Water Resources Monitoring Program Annual Report for Calendar Year 1992 was completed incorporating ground water, spring-flow, and water use data in the YM vicinity.

Air quality permits were approved by the Bureau of Air Quality for a gravel conveyor and a Failing Stratmaster drill rig.

Large Block Test

Cleaning and levelling on the top of the block continued this week. Several small blasts were used to remove irregularities in the rock.

Regulatory Interactions

Site Characterization Progress Report (PR)

The PR 9 draft is completed and in Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) Technical Management Review. The PR is scheduled for delivery to YMP on November 8, 1993, for internal review. The concurrence draft is to be forwarded to DOE/Headquarters (HQ) and the participants on November 12, 1993.

Regulatory Tracking System

Sharon Skuchko, RW-30, HQ, will be in Las Vegas November 8-9, 1993, to discuss the Regulatory Tracking System developed by RW-30 as a mechanism to track regulatory-related commitments and open items. The purpose of the meeting is to work toward developing a consistent integrated approach between HQ and YMP to handling such commitments, including use of the same system.

Advisory Committee on Nuclear Waste (ACNW) Interactions

The agenda for the Unsaturated Zone Working Group meeting scheduled for December 14, 1993, in Las Vegas, has been agreed to by YMP, RW-30, and ACNW staff. A dry run for the presentations has tentatively been scheduled for November 22, 1993, in Las Vegas.

Issue Resolution

A dry run for the Seismic Hazards Technical Exchange was held on November 4, 1993, in Las Vegas. The Technical Exchange will be held on November 17, 1993, in the Forrestal Building in Washington, D.C.

Mined Geologic Disposal System (MGDS) License Application Annotated Outline (AO)

A comment resolution meeting for Revision 3 of the MGDS License Application AO was held on November 1, 1993. The meeting was a teleconference between YMP and RW-30. Current plans call for delivery of Revision 3 to the U.S. Nuclear Regulatory Commission (NRC) in late November 1993. This revision of the AO contains changes to Section 3.1, "Description of Individual Systems and Characteristics of the Site."

Performance Assessment (PA) staff participated in the fiscal year 1994 integrated project schedule meetings November 3-5, 1993. The focus of the meetings was to tie performing participants' efforts together and to ultimately tie major program efforts together.

The Chief of Technical Analysis Branch served as a member of the Program Review Board for Idaho National Engineering Laboratory (INEL) PA in Albuquerque, New Mexico, November 2-3, 1993. The INEL is responsible for a variety of spent nuclear fuels (SNF) and high-level wastes (HLW) and is evaluating different waste forms.

The PA staff attended the NAGRA Nuclear Waste Technical Review Board (NWTRB) meeting in Berkeley, California, October 19-20, 1993. The review emphasized common needs in the Swiss and Yucca Mountain Site Characterization Project Office (YMPO) programs. The emphasis was on the growing realization in the Swiss program of multi-phase flow that occurs around ventilated drifts.

The PA staff attended the workshop on two-phase flow in fractures at Lawrence Berkeley Laboratory November 3-4, 1993. The meeting agenda was to present the state of the art in two-phase flow in fractured rock research with the intent of recommending future research needs. Representatives from YMPO, Waste Isolation Pilot Plant, Swiss and Swedish programs each presented perspectives on the field and laboratory experimental theoretical and numerical efforts.

Loaded Monitor Retrieval System (MRS) test data and establishing software programs to support the addition of MRS and Program Support to the Planning and Control System.

Site Characterization Plan/Study Plan (SP) Status

One new SP was submitted to YMPO: SP 8.3.1.17.3.3.2, "Development of Empirical Models for Underground Nuclear Explosion Ground Motions." Changes to the document are required before it can be reviewed by YMPO.

STUDY PLAN BREAKDOWN

	Initial Plans	Major Revisions
Not Submitted to YMPO.....	37	0
In Screening Review	1	0
In YMPO Review	0	0
Awaiting Comment Resolution	5	3
In Verification Audit	4	1
Awaiting YMPO Approval	0	0
Awaiting Submission to NRC	0	0
Awaiting NRC Phase 1 Review	11	5
Accepted by NRC	46	5
Totals	<u>104</u>	<u>14</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

NRC Comments Status:

Received Comments from NRC	26
Responses Transmitted from DOE to NRC	24

B. Quality Assurance (QA) Implementation

Quality (Q)-List Procedure Development

An Interim Change Notice on AP 6.17Q to resolve a Corrective Action Request was approved.

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

Revisions to the Q-List and the MC-List to incorporate the natural barriers were submitted to DOE for approval. The MC-List has been approved.

The Assessment Team Controlled List, Revision 18, was approved.

Cancellation of the Quality Activities List was approved and cancellation of the Project Requirements List was submitted to DOE for approval.

III. GENERAL INFORMATION ITEMS

The staff participated in several meetings: the Section 801 task force meeting on November 3, 1993, to plan for the November 9-10, 1993, National Academy of Sciences (NAS) meeting in Las Vegas; the comment resolution meeting on the MGDS AO at the CRWMS M&O's Washington, D.C., office on November 1, 1993; the Multi-Purpose Canister (MPC)/Thermal Loading meeting in Las Vegas on November 3, 1993; the INEL Integrated PA workshop on SNF and HLW stored at INEL in Albuquerque, New Mexico, November 2-3, 1993; the Glass Waste Acceptance Technical Review Group meeting in Buffalo, New York, November 4-5, 1993; and the Program Management Meeting to review CRWMS M&O activities on November 4, 1993, in Las Vegas.

Initiated Quality Assurance Procedure 6.2 review of the Systems Design Requirements for MPC implementation. Review comments are due to RW-40 on November 18, 1993.

Attended NWTRB Transportation and Systems Panel meeting on MPCs November 1-2, 1993, in Dallas, Texas.

Initiated review of the Business Management Review Self-Assessment Report. Comments are due to RW-10 by November 5, 1993.

On November 3, 1993, participated in a meeting of the DOE task force on the U.S. Environmental Protection Agency Standard to discuss draft positions on issues related to development of a new standard and topics to be discussed at the November 1993 NAS Committee meeting.

Attended joint meeting of NWTRB Transportation & Systems/Engineered Barriers Systems Panels on Technical Challenges of Interim Storage, November 1-2, 1993, in Dallas.

On Work Breakdown Structure 1.2.2.2.2 (Hydrologic Properties of Waste Package Environment), two models were used to study the effects of hydrogeological heterogeneity on vapor flow and condensate drainage under a variety of thermal loads. High permeability zones are assumed to vertically intersect one or more emplacement drifts; gas pressure differentials between the nominal and high permeability zones preferentially drive vapor toward the high permeability zones. In some cases, the subsequent condensation can be enough to result in persistent dripping into emplacement drifts. The number of dripping locations and the duration of dripping are inversely related since there is only a finite quantity of vapor flow and condensate generation. At extreme cases of heterogeneity, the two-phase effects of focused vapor flow and condensate drainage are more persistent in the vicinity of waste packages for marginal boiling cases, and continue long after temperatures have dropped below the boiling point. For increasing areal mass loading (AML), the effects of focused vapor flow and condensate drainage are decreasingly persistent. For several extreme examples of

heterogeneity, an AML of 49.2 MTU/acre (the reference SCP-CDR thermal load), resulted in two-phase conditions (with a mobile liquid phase in the fractures) for more than 1,500 years at the emplacement drift, long after temperatures had dropped below boiling (159 years). For the same degree of heterogeneity and an AML of 154.7 MTU/acre, two-phase conditions at the emplacement drift ceased within 9 years, and the effects of focused vapor and condensate drainage virtually vanished in the far-field long before temperatures dropped below the boiling point. Clearly, the challenge of adequately understanding repository-heat-driven vapor and condensate flow is at least as formidable for sub-boiling conditions as it is for above-boiling conditions.

Los Alamos staff reported that Quantitative-mineralogy data collection was completed this week for the zeolitized intervals below the Topopah Spring Member in drill core UE-25 UZ-16. These data will be reduced while sample preparation continues on specimens from the devitrified Topopah Spring Member from this core. Sample spacing is closer in this core than in previous core studies, providing greater confidence in mineral-abundance trends important for sorption, water evolution, and thermal loading evaluation.

Los Alamos staff participated in a DOE dry run for a presentation on Probability and Magmatic Effects to be given to the NAS on November 9, 1993.

Los Alamos staff reported that Instrumental neutron activation trace-element analyses for samples from the Lathrop Wells and Sleeping Butte volcanic centers were received from Washington University.

The SNL staff continued design verification activities in the ESF north ramp starter tunnel. These activities are being conducted under SP 8.3.1.15.1.8, "In Situ Design Verification." This week, installation of the rockbolt load cells and tape extensometer anchors in the main starter tunnel was completed. Drilling was completed for installation of the MPBX at the 0+190 station. The load cells (and the MPBX gages) will be read manually until the data acquisition system (DAS) is installed and functioning. Next week, SNL field crews will begin installation of the MPBXs. Installation of junction boxes and conduit for instrumentation cables and the DAS will also be started. There is a serious question as to whether the DAS can be operated until permanent power is installed at the ESF portal. This is not expected until June 1994. Until then, 24 hours-per-day, 7 days-per-week generator power would be required to operate the DAS.

Thermal and mechanical testing of core samples from NRG-6, NRG-5, and NRG-2B continued this week. All data obtained thus far has been submitted to the SNL Participant Data Archive and is available to all participants. Several transfers of data to design and PA groups have been completed under the data transfer procedures.

SNL staff completed QA audits of National Center for Atmospheric Research (NCAR) and the University of Colorado. The NCAR audit was combined with a Readiness Review to determine their readiness to restart Climate Modeling work, which had been on hold due to funding limits and other considerations.

Technical and Management Support Services submitted Revision 2 of the YMP Emergency Evacuation Procedure and Area Evacuation Procedure to the Site Manager for approval.

Delivered two presentations on the Hantavirus at the Site Manager's meeting and Field Operations Center Logistics group safety meeting.

Completed development of sampling plans for silica at the ESF storage facility and erionite fibers at UZ-14.

The USGS supplied a summary of the geology and stratigraphy of the valley west of Exile Hill in a meeting with other YMP participants to discuss geotechnical considerations for the excavation of the ESF north ramp through the area. Preparation of lithologic logs of core from USW UZ-14 and UE-25 NRG-6 is continuing, as are petrographic studies of the Tiva Canyon Tuff from outcrop samples on Whaleback Ridge. The USGS is also discussing a cooperative venture with the Lawrence Livermore National Laboratory to share digital scanning electron microscope images of the Topopah Spring Tuff to characterize textural variations in this unit. Structural contour maps of the Tiva Canyon Tuff continue to be digitized and added to the three-dimensional lithostratigraphic model LYNX software. Geologic mapping data from the ESF starter tunnel has also been processed and entered into a Geologic Information System computerized data base.

The USGS performed some additional mapping and fracture logging this week in the new trenches along the Solitario Canyon Fault in Crater Flat, west of YM. Strike-slip faults were studied in Rock Valley to assess the validity of tectonic models, and field work was performed in the Calico Hills to review the tectonic map of the area and investigate the megabreccia associated with large faults.

The mobile geochemistry laboratory was moved from the UE-25 UZ-16 site to USW UZ-6 to support the collection of water vapor samples from various depths in the borehole. Equipment for air permeability testing has been moved to UE-25 UZ-16, and is undergoing mechanical and electronic checks before being placed in the borehole.

IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

Two tours to YM were conducted on November 3, 1993: for five guests from CRWMS M&O HQ, and for three guests from SNL.

Several educational presentations were given. These include a presentation on volcanoes to 80 students at the Pahrump Fifth and Sixth Grade Center in Pahrump, Nevada, on November 2, 1993; a presentation on earthquakes to 12 members of the Las Vegas Breakfasters Lions Club in Las Vegas on November 4, 1993; and a presentation on "Gee Whiz Science" to 150 students at Fitzgerald Elementary School in North Las Vegas, Nevada, on November 5, 1993.

Gave presentations on Native American Indian Culture to 125 students at Pahrump Intermediate School in Pahrump on November 3, 1993, and to 35 students at Clyde Cox Elementary School in Las Vegas on November 5, 1993. Also gave presentations to 27 students at Paradise Elementary on November 2, 1993, in Las Vegas.

General YMP overviews were given to 31 members of a University of Nevada, Las Vegas, Natural Resources class on November 2, 1993, in Las Vegas, and to 30 guests of International Brotherhood of Electrical Workers on November 5, 1993, in Las Vegas. A general YMP overview was also given to guests of the Chamber of Commerce Program, Discover Southern Nevada, on November 4, 1993, in Las Vegas.

The Jason Project Regional Meeting for all western "down link" sites was held on October 30, 1993, at the Clark County School District (CCSD) Partnership Office. Twenty people attended.

Institutional and External Affairs staff completed and placed public awareness announcements in three newspapers announcing the Public Update Meetings to be held November 8-10, 1993, in Pahrump, Las Vegas, and Reno, Nevada. An announcement was also placed for the West Las Vegas Discovery Day.

Two press releases were distributed by YMPO announcing the Public Update Meetings and other upcoming community events to Nevada media outlets.

The Teacher Steering Committee for the YMP met at the Las Vegas Yucca Mountain Science Center on November 2, 1993. Nine CCSD teachers attended.

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 Rick Moore 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>
A. <u>Stakeholders Meetings</u>			
No significant meetings to report.			
B. <u>DOE/HQ Meetings</u>			
Tuesday, December 7	OCRWM Director's Program Review	Videoconf.	R. Nelson
C. <u>CRWMS M&O/DOE Meetings</u>			
No significant meetings to report.			
D. <u>Internal and DOE/Nevada Operations Office (NV) Meetings</u>			
Wednesday, November 17	NV Managers Monthly Program Review	Las Vegas, NV	R. Dyer

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
E. <u>NRC Interactions</u>			
Wednesday, November 17	Seismic Hazards Assessment Technical Meeting (P)	Washington, DC	T. Bjerstedt
Thursday, November 18	Interactions Scheduling Management Meeting (P)	Washington, DC	T. Bjerstedt
F. <u>NWTRB Interactions</u>			
Monday, November 22	NWTRB Panel on Environment & Public Health (P)	Las Vegas, NV	J. Nesbit
Monday- Wednesday, January 11-12, 1994	NWTRB Full Board Meeting (P)	Arlington, VA	J. Nesbit
Tuesday- Wednesday, March 8-9, 1994 (Tentative)	NWTRB - SG&G Panel (P)	TBD	J. Nesbit
Monday- Wednesday, April 11-13, 1994	NWTRB Full Board Meeting (P)	Reno, NV	J. Nesbit
Monday- Wednesday, July 11-13, 1994	NWTRB Full Board Meeting (P) (Tentative)	Denver, CO	J. Nesbit
Wednesday- Friday, October 12-14, 1994	NWTRB Full Board Meeting (P) (Tentative)	Las Vegas, NV	J. Nesbit
G. <u>ACNW Interactions</u>			
Monday- Tuesday, November 15-16	ACNW 59th Meeting (P)	Bethesda, MD	A. Gil
Monday, December 13	ACNW 60th Meeting (P)	Las Vegas, NV	A. Gil
Tuesday, December 14	ACNW Working Group on Unsaturated Zone Hydrology (P)	Las Vegas, NV	A. Gil
Wednesday, December 15	ACNW Site Tour at YM (P)	Las Vegas, NV	A. Gil

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
H. <u>NAS Interactions</u>			
Tuesday- Wednesday, November 9-10	NAS Committee on YM Standards (P)	Las Vegas, NV	S. Jones
Thursday- Friday, December 16-17	NAS Committee on YM Standards (P)	Washington, DC	S. Jones
Monday- Tuesday, February 7-8, 1994	NAS Committee on YM Standards (P)	TBD	S. Jones
Thursday- Friday, April 28-29, 1994	NAS Committee on YM Standards (P)	TBD	S. Jones

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u>			
Saturday, November 6	Derfelt Elementary School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Saturday, November 6	Discovery Day - Geology, Hydrology, Mining, Gold Panning, Rocks and Minerals	Las Vegas, NV	Various
Monday, November 8	Green Valley Kiwanis - Earthquakes	Henderson, NV	J. Savino
Monday, November 8	Cannon Middle School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Monday, November 8	International Brotherhood of Electrical Workers - General Overview	Las Vegas, NV	D. Bradford J. Peck
Tuesday, November 9	Southeastern Lampac - High-Level Nuclear Waste Disposal	Biloxi, MS	A. Robison
Tuesday, November 9	Clark High School - Native American Indian Culture	Las Vegas, NV	R. Arnold

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions (Continued)</u>			
Tuesday, November 9	Pahrump 5th & 6th Grade School - Earth & Fossils	Pahrump, NV	A. Gil
Wednesday, November 10	Lowman Elementary School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Thursday, November 11	International Brotherhood of Electrical Workers - General Overview	Las Vegas, NV	D. Bradford J. Peck
Friday, November 12	Ruby Thomas Elementary School - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Tuesday, November 16	Nevada Environmental Conference - Environment	Reno, NV	M. Blanchard
Tuesday, November 16	Society for Mining, Metallurgy, and Exploration - General Overview	Pomona, CA	D. McKenzie
Wednesday November 17	Moapa Rotary Club - General Overview	Moapa, NV	A. Robison
Wednesday, November 17	Republican Women - General Overview	Boulder City, NV	J. Younker
Wednesday, November 17	American Society of Civil Engineers - General Overview	Long Beach, CA	D. McKenzie
Wednesday, November 17	Society of Mechanical Engineering - Mechanical Engineering as it relates to YMP	Las Vegas, NV	TBD
Thursday, November 18	American Nuclear Society (ANS) - Results of In-Situ Testing at Geologic Disposal Sites	San Francisco, CA	R. Dyer
Monday, November 22	Pahrump 5th & 6th Grade Center - "Gee Whiz Science"	Pahrump, NV	J. Blink

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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, November 22	George Harris Elementary School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Tuesday, November 23	Variety School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Wednesday, November 24	Will Beckley Elementary School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Monday, November 29	Beatty Elementary School - Fossils	Beatty, NV	M. Pendleton
Tuesday, November 30	Fay Herron Elementary School - "Gee Whiz Science"	Las Vegas, NV	J. Blink
Tuesday, November 30	Fremont Rotary Club - Transportation	Las Vegas, NV	P. Standish
Tuesday, November 30	YM Speaker Series - "Archaeology in Perspective" (P)	Las Vegas, NV	W. Johnson
Thursday, December 2	YM Speaker Series - "Archaeology in Perspective" (P)	Pahrump, NV	W. Johnson
Friday, December 3	G. C. Wallace Engineers & Architects - General Overview	Las Vegas, NV	J. Peck
Monday, December 6	George Harris Elementary School - YM Johnny	Las Vegas, NV	J. Hartley
Wednesday, December 8	Court Continuation School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Friday, December 10	Fay Herron Elementary School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Saturday, December 11	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various

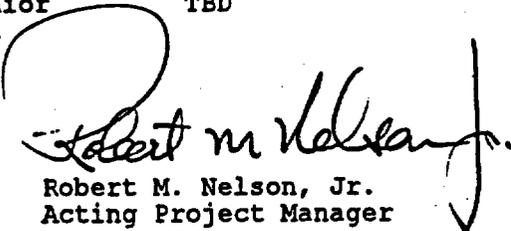
<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. State and Public Interactions (Continued)			
Friday, December 31	Widowed Persons Group - General Overview	Las Vegas, NV	J. Peck
Wednesday, January 19, 1994	Roy Martin Junior High School Native American Indian Culture	Las Vegas, NV	R. Arnold
Tuesday, January 25, 1994	YM Speaker Series - "Constructing a Tunnel to Study a Mountain" (P)	Las Vegas, NV	D. McKenzie J. Peck
Thursday, January 27, 1994	YM Speaker Series - "Constructing a Tunnel to Study a Mountain" (P)	Beatty, NV	D. McKenzie J. Peck
Saturday, February 12, 1994	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Sunday, February 27, 1994	Waste Management Symposia - TBD	Tucson, AZ	TBD
Sunday, March 20, 1994	Risk Management Quarterly Association - TBD	San Diego, CA	TBD
Saturday, April 2, 1994	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Saturday, June 4, 1994	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various

<u>Date</u>	<u>Event</u>	<u>Location</u>
J. Exhibits Scheduled		
Monday, November 8	Public Update Meeting	Pahrump, NV
Tuesday, November 9	Public Update Meeting	Las Vegas, NV
Wednesday, November 10	Public Update Meeting	Reno, NV

<u>Date</u>	<u>Event</u>	<u>Location</u>
J. Exhibits Scheduled (Continued)		
Thursday-Sunday, November 11-14	American Indian Science and Engineering Society	Spokane, WA
Saturday, November 13	Boy Scouts Expo '93	Las Vegas, NV
Sunday-Tuesday, November 14-16	University of Nevada, Reno, Environmental Conference	Reno, NV
Sunday-Wednesday, November 14-17	ANS	San Francisco, CA
Saturday, November 17	Public Open House (P)	Yucca Mountain, NV
Saturday, December 4	Public Open House (P)	Yucca Mountain, NV
Monday-Friday, December 6-10	American Geophysical Union	San Francisco, CA
Monday-Friday, December 13-17	Migration '93	Charleston, SC

<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. Tours Scheduled		
Friday, November 12	Mining Institute of Academy of Sciences - Russia	TBD
Wednesday, November 17	Public Open House (P)	Various Escorts
Wednesday, November 17	NRC	TBD
Thursday, November 18	Senator Trish Weedn	TBD
Tuesday, November 23	Sun City B'nai Brith	TBD
Monday, November 29	NAS Tunnel Technology Committee	TBD
Monday, November 29	Japanese Radioactive Waste Management	TBD

<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled (Continued)</u>		
Saturday, December 4	Public Open House (P)	Various Escorts
Monday, December 6	Stoller Corporation	TBD
Wednesday, December 8	Clark High School	TBD
Thursday, December 9	National Nuclear Safety Administration - China	TBD
Wednesday, December 15	ACNW	A. Gil
Wednesday, December 22	TRW Systems Integration Group	TBD
Thursday, January 6, 1994	Inyo County	TBD
Wednesday, January 12, 1994	YMP Orientation Tour	A. Stephenson
Saturday, January 22, 1994	Public Open House (P)	Various Escorts
Saturday, February 26, 1994	Public Open House (P)	Various Escorts
Thursday, March 31, 1994	National Council, State Garden Club Specific Region Convention	TBD
Wednesday, April 20, 1994	Cannon Junior High School	TBD
Thursday, April 28, 1994	Garside Junior High School	TBD


Robert M. Nelson, Jr.
Acting Project Manager

YMP:RVB-677



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

WBS: 1.2.7.3
QA: N/A

1993

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 October 30, 1993 to November 12, 1993:

1. FIELD OPERATIONS CENTER

A. Management and Administration

- a. Provided operations, administrative, and security support to the Yucca Mountain Site Manager and his DOE staff.
- b. Provided operational and administrative support for site characterization activities in the field.
- c. Provided logistical support for issuing vehicles, first aid kits, fire extinguisher, and other necessary equipment to personnel performing field duty.
- d. Provided operational and logistical support during this period for the following tours: M&O Headquarters, Sandia National Lab, Mining Institute of Academy of Sciences- Russia
- e. Prepared and transmitted daily operations reports to NORSOC, and the biweekly reports to HQ OCRWM. ORPS Report for ORPS YMPO--SAIC-1993-0004 (automobile accident) to Facility Representative for signature. Discussed with OCRWM new acronyms for designated facilities in ORPS System.
- f. Prepared twenty-six (26) badge requests for visitors and field work.
- g. Submitted revision 2 of YMP Emergency Management Plan for review and approval. Submitted Area Evacuation Procedure for approval. Developed 10 drill and exercise scenarios to be conducted during 1994. Updated Area 25 Central Procedure Area maps for inclusion in Area Evacuation Procedure.
- h. Processed one (1) Work Order Requests, providing for communications, field support and building maintenance.
- i. Processed fifteen (15) photographic service/support requests.
- j. Continue to provide photographic coverage of ESF operations.
- k. Provided underground visitors training for visitors and workers requiring access.

- l. Engaged in preparation of organization charts for Site Manager and prepared revised Safety and Health organization chart for Department Manager.
- m. Arranged for FOC to be placed on distribution list for excess computer equipment.
- n. Received draft "C" of YAP 30.1, "Occurrence Reporting and Processing of Operations Information" from PPD and sent to reviewers for concurrence.
- o. Site Manager prepared the JP Authorization Letter along with the Field operations Permit for JP 92-21, "Construction of C-Well Complex Discharge Pipeline."
- p. The Site Manager, with the dual role of YMP Safety & Health Officer, presented to management a presentation at the Monthly Performance Management meeting regarding the FY '93 top initiatives and significant accomplishments in the area of Field Operations and occupational Safety and Health.
- q. The YMP Safety and Health Offices submitted to DOE/YMP, RSN, REECo, SAIC and M&O/TRW results of an inspection performed by SAIC Safety & Health Compliance Department as per AP 5.7 based on a directive by the Safety & Health offices. This was regarding the Bank of America complex in Las Vegas, Nevada.
- r. Site Manager prepared and issued for distribution revision to several Job Packages, i.e. JP 93-05, "Drilling and Testing of Borehole UZ-25 NRG-2A" and JP 93-03, "Construction of Access, Drilling and Testing of Borehole UZ-25 NRG-2B."
- s. Site Manager prepared a Letter of Request for Space Authorization for DOE/NTSO's approval to use the facilities in Area 25/26 for YMP Warehousing and storage. Letter was submitted to the Director, Nevada Test Site Office (NTSO).

B. Project Safety & Health (DOE/SAIC)

- a. Delivered two presentations on the Huntavirus.
- b. Completed draft of presentation for NAS to be delivered by DOE Safety Specialist.
- c. Completed development of sampling plans for silica at ESF storage facility and erionite fibers at UX-14.
- d. Completed development of Emergency Evacuation Plan draft for the BoA complex.
- e. Performed fire extinguisher inspection of SMF, HRF, RSN and Bldg. 4226.
- f. Began update compilation of chemical inventory and MSDS's of all YMP Participants.
- g. Reviewed and commented on Job Package 94-02.

- h. Performed ten surveillances: a) 4 at J-13 Trenches; b) 2 at the ESF; c) 2 at the Batch Plant area; d) 1 at UZ-16; and e) 1 at NRG-7/7A.
- i. Measured air quality and relative humidity during Drilling/Blasting operations at ESF Starter Tunnel Test Alcove and conducted post blast gas sampling at Alcove.
- j. Began follow-up investigation of alleged on-the-job injury for skin exposure to cement at UZ-14.
- k. Conducted a noise survey on the Gardner-Denver (#79578) Air Track Drill operation at SD-12.
- l. Supported on going tours.
- m. OCCURRENCE REPORTS
 - 1. SAIC - one outstanding: 1 waiting for Facility Representative Signature.

C. Bullfrog Planning Commission

- a. Bullfrog Planning Commission forwarded recommendations for warehouse space to the Site Manager.

2. Raytheon Services Nevada, (RSN)

A. Field Support

- a. Completed survey of 69 kV substation.
- b. Supported Geo-mapping in Alcove.
- c. Survey Crew continuing work on A-25 Survey Control Net.
- d. Field Engineering continues to check Trench 14 daily.

B. Quality Control

- a. Continued verification of activities on UZ-14 borehole, utilizing the LM-300 drill rig.
- b. Continued verification of activities on NRG-7/7A borehole utilizing the failing 1500 drill rig.
- c. Performed verification activities at C-Hole complex.

3. Sample Management Facility (SMF/SAIC)

- a. Supported drilling activities on NRG-7/7A and UZ-14.
- b. Recovered core and cuttings from NRG-7/7A.
- c. Supported Sample Overview Committee meeting, 11/3.
- d. Continued monitoring and oversight of prototype drilling tool development conducted at Colorado School of Mines.

- e. Revising procedures and developing a procedure to address Exploratory Studies Facility sample collecting activities.
- f. Conducted 12 core examinations at SMF by PI's from USGS, LANL, and SNL.
- g. Removed 213 specimens from core samples for shipment to USGS and SNL.

4. YMP Hydrologic Research Facility, (USGS)

The following activities were accomplished by USGS Staff:

Geologic Studies Program:

- a. Studied section of exposed Paintbrush Tuff Exposed in Solitario Canyon.
- b. Checked progress on Ghost Dance Pavement.
- c. Mapped Ghost Dance Fault trace on Whaleback Ridge.
- d. Mapped in Rock Valley and in Crater Flats.
- e. Mapped breccia deposits and detachment faults in the Calico Hills and the Big Dune quadrangle.
- f. Logged new trenches in Solitario Canyon.

Hydrologic Investigation Program:

- a. Checked and maintain stream gages in watershed around Yucca Mountain.

Saturated Zone:

- a. Calibrated water level monitoring transducers, performed routine water level measurements and recovered data from deep boreholes in and around Ranch.
- b. Set up equipment and oversee workover and clean-out operations at the C-Well Complex.

Unsaturated Zone:

- a. Worked on resolution of Non-Conformance Reports.
- b. Set up air permeability testing equipment at UZ-16 and ran Tests in interval from 70 to 83 feet.
- c. Worked on power supplies for I/DAS trailers.
- d. Ran wireline density logs in NRG-2a and NRG-2b and full set of geophysical wireline logs in WT-2.
- e. Conducted additional hydrochemistry gas sampling test in rock bolt hole at the ESF.
- f. Sampled water vapor at UZ-6.

5. Reynolds Electric and Engineering Co., Inc. (REECo)A. Drilling

- a. UZ-14, LM-300 drill rig, Cored to 1326.73 feet, reamed to 1326.73 feet. Hole still making water, re-cemented hole. Drilled out hole and ran camera, water coming in hole at 1282 feet and 1313 feet at about 3.4 gallons per hour.
- b. NRG-7/7A, Failing 1500 drill rig, cored to 286.01 feet, drove casing to 247.98 feet. Deviation surveys at 115 feet - 2 degrees 40 minutes; 135 feet - 3 degrees 32 minutes; 200 feet - 3 degrees 25 minutes; and 245 feet - 3 degrees 25 minutes.
- c. C-Well #3, Failing Stratmaster, moved to location and rigged up equipment.

B. Logistics

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

C. Construction

- a. JP 92-20 - REECo continued survey work and excavation of the "raw" waterline from Well J-13. Clearing of right of way and grubbing is underway.
- b. JP 93-10 - "Fran Ridge Large Block Test." REECo continued drilling blast holes for large block excavation.
- c. JP 93-12 - "Ghost Dance Fault Roadcuts." REECo continued excavation and exposure of the Ghost Dance Fault.
- d. JP 93-13 - "SD-12 Access Road and Drill Pad." REECo continued construction of access road and drill pad.
- e. JP 93-10 - "Fran Ridge Large Block Test." REECo completed drilling blast holes for large block excavation; loaded and shot round; cleared away blasted muck and air/water washed block area for mapping.
- f. JP 93-11 - "C" Well Remediation. REECo completed back fill of excavated areas as part of remediation; completed site prep for three drill sites.
- g. JP 93-12 - "Ghost Dance Fault Roadcuts." Continued excavation and exposure of the Ghost Dance Fault.
- h. JP 93-12 - "SD-12 Drill Pad and Access Road." Continued drilling blastholes at SW corner of drill pad; continued hauling fill for pad and road; blasted first round on drill pad and mucked out.

6. Los Alamos National Laboratory, (LANL)

- a. Construction activities consisted of grouting permanent rockbolts in the tunnel.
- b. Test Alcove now at approximately 45 feet.
- c. Load Cell readings were taken at CS 0+50 and extensometer measurements were taken at CS 0+30 and 0+60. Two new geophone locations were identified in the Test Alcove, right rib at CS 0+92 and CS 1+11.
- d. Drilling MPBX holes.
- d. Tracer water used; total to date is 402,204 gallons.

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

- a. Received and Issued to following Controlled Documents:

JOB PACKAGES

YMP/JP92-21, Rev. 1, "Construction C-Well Complex Discharge Pipeline".

TEST PLANNING PACKAGESSPECIFICATIONS

YMP-025-9-SP10, Rev. 0, "Water Line for C-Well Complex Pump Tests".

DRAWINGS

YMP-025-9-SUPT-GE106, Rev. 0, "C-Well Discharge Pipeline".

YMP-025-9-CIVL-PL108, Rev. 0, "C-Well Discharge Pipeline".

YMP-025-9-CIVL-PL109, Rev. 0, "C-Well Discharge Pipeline".

YMP-025-9-CIVL-PL110, Rev. 0, "C-Well Discharge Pipeline".

YMP-025-9-CIVL-CI101, Rev. 0, "C-Well Discharge Pipeline".

YMP-025-9-CIVL-CI102, Rev. 0, "C-Well Discharge Pipeline".

WORK PROGRAMSFCRs

FCR 94/018, "Modify Functional Requirements for USW SD-12 Drill Pad".

FCR 94/012, "Changes to Section 03361 of SP09".

FCR 94/016, "Add Notes to Drawing YMP-025-1-CIVL-PR117, Rev. 1 & PR118, Rev. 1".

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

Page 7

- b. REPRODUCTION:
 12,407 pages copied
 463 drawings copied
- c. DOCUMENTS ISSUED:
 314 controlled documents
 - 138 FCR's
 - 22 SPEC's
 - 22 JP's
 - 132 DWG's
 0 information copies
- d. DTAR logoffs: 298

8. Field Training (SAIC)

- a. ESF Visitor Training, 16 people attended.
 b. GET 1.5 Refresher Training, 3 students passed.
 c. Standard First Aid Training, 3 people attended.
 e. New Underground Worker Training, 8 people attended.
 f. Radiological Control Testing, 7 people attended.

Winfred A. Wilson

Winfred A. Wilson
 Site Manager

YMP:WAW-93/282

cc:

M. B. Blanchard, YMP, NV
 J. R. Dyer, YMP, NV
 R. B. Baumeister, YMP/YMSO, Mercury, NV
 L. R. Hayes, USGS, Las Vegas, NV
 R. W. Craig, USGS, Las Vegas, NV
 R. F. Pritchett, REECo, Las Vegas, NV
~~P. S. Justis, NRC, Las Vegas, NV~~
 R. R. Kovach, LANL/YMSO, Mercury, NV
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