



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

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

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

DATE: October 13, 1993

SUBJECT: Office of Geologic Disposal (OGD) Weekly Highlights for the
Week Ending October 1, 1993 and
Yucca Mountain Site Office (YMSO) Activity Report from
September 17 to October 1, 1993

Please find enclosed the above-referenced information. There is nothing
in these enclosures that require specific management attention.

cc: w/enc: Charlotte Abrams, M/S 4 H 3
Anne Garcia, M/S 4 H 3
Dean Kunihiro, Region 5

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

OCT 11 1993

Lake H. Barrett, Acting Director, Civilian Radioactive Waste Management,
 HQ (RW-1) FORS
 THRU: Linda M. Smith, Acting Associate Director, OGD

OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING
 OCTOBER 1, 1993 (SCP: N/A)

I. FORECAST SIGNIFICANT EVENTS

A. Site Characterization Activities

Exploratory Studies Facility (ESF)

Design activities will continue with preparation of the Basis for Design (BFD) for design verification of Packages 1B and 2A.

Construction activities will continue in the starter tunnel, including grouting of pattern bolts. Excavation will begin on the test alcove.

Surface-Based Testing

Coring and reaming operations are expected to continue at UZ-14. Cleanup of the bedrock pavement along a portion of the Ghost Dance Fault will continue. Gas-phase testing will continue at UZ-16. Test alcove excavation will begin following completion of initial rockbolt placement.

The Sample Management Facility (SMF) staff will support split shift drilling activities on USW UZ-14. They will also begin video and geophysical logging activities on USW WT-2 and geophysical logging activities on all North Ramp Geologic Boreholes.

B. Public Outreach and Institutional Activities

The Institutional and External Affairs (IEA) staff will attend the Western Interstate Energy Board meeting in Portland, Oregon, October 4-6, 1993.

Staff will present an overview of research interests of Office of Civilian Radioactive Waste Management to state representatives of the U.S. Department of Energy's (DOE) Experimental Program to Stimulate Competitive Research on October 8, 1993, in Washington, D.C.

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

A. Site Characterization Activities

Construction

Work within the tunnel, including grouting of pattern bolts, is continuing. All required pattern bolts have been installed, but grouting continues. Preparations have begun for the start of the test alcove entrance.

OCT 11 1993

Construction is continuing on the stormwater diversion channel around the North Portal area. Placement of riprap has been completed.

On Job Package (JP) 92-20, ESF North Portal Pad and Facilities, construction of the 69kV powerline is proceeding on schedule. Erection of the power poles continues. Pumping of grout on the pattern rockbolts in the starter tunnel, as well as set up of office trailers on the pad, continues. Construction of the new bermed parking area for heavy equipment continues.

The following milestones represent the near-term plan for ESF activities:

Complete Excavation of Test Alcove #1	October 29, 1993
69kV power available at the North Portal	December 22, 1993

ESF

Results of a prototype hydrochemical test are being analyzed. Installation of tunnel support began on September 29, 1993, in preparation for excavation of the first test alcove.

Design

Design activities continued on Packages 1B and 2A. Both packages are being prepared for verification. The BFD document is being updated in preparation for the verification task.

Exploratory drilling operations progress is summarized as follows:

<u>Borehole</u>	<u>Current Core Depth 10/01/93</u>	<u>Current Ream Depth 10/01/93</u>	<u>Total Planned Depth</u>
NRG-2B	329.46 feet	263.60 feet	315 feet
UZ-14	1,302.00 feet	1,301.60 feet	2,000 feet

On UZ-14, the hole was cored and reamed 20 feet this week. Monitoring of water levels and inflow rates were then conducted. The U.S. Geological Survey (USGS) Principal Investigator (PI) determined that a second grouting of the borehole to further seal the water-bearing zone encountered at a depth of 1,256.6 feet was required. A second grouting operation is tentatively scheduled for October 1, 1993. The primary purpose of the UZ-14 borehole is to develop baseline unsaturated zone (UZ) hydrologic data.

On UZ-16, gas testing began on August 31, 1993, with a four-packer string in place in the hole. Testing is continuing and is expected to last several weeks.

On the Ghost Dance Fault, the rock has been exposed along the 650-foot-long excavation. Cleaning of the excavation using hand labor, compressed air, and water began on September 27, 1993, and is continuing. The fault, stratigraphy, and fractures will be geologically mapped and analyzed.

OCT 11 1993

Lake H. Barrett

-3-

On the Engineered Barrier Large Block Experiment, drilling of shot holes continues for the excavation around the large block. This activity is preparatory for the Large Block Experiment - Phase I to be conducted at the Fran Ridge test site.

On the Bare Mountain Trenches and Test Pits, completed excavation of BMTP-8, BMTP-9, and BMT-1 on September 29, 1993. Four test pits and two trenches remain to be excavated pending U.S. Bureau of Land Management approval of right-of-way. Trenches and test pits were excavated along the Bare Mountain Fault to provide exposures of the fault and of Quaternary deposits for geologic mapping and age determination.

The work completion report for Soil and Rock Properties, Phase II Test Pits, JP 92-08, was received by the Site Manager.

On JP 93-14, NRG-7 Drill Pad, construction was completed on October 1, 1993. A pad acceptance meeting is scheduled for October 5, 1993.

The SMF supported drilling efforts on USW UZ-14. Drilling Support sampled and collected core and cuttings from 1,282.0 feet to 1,302.0 feet.

Created 56 specimens from core samples for analysis by various PIs.

Ten sample examinations were conducted at the SMF by Sandia National Laboratories (SNL), the U.S. Nuclear Regulatory Commission (NRC), and USGS.

Shipped core specimens for SNL PI analysis.

Revising procedures and developing 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 (CSM). The CSM is analyzing data collected from EXLOG vibration sub studies.

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

OCT 11 1993

SCP ACTIVITY	TITLE	COMMENTS
8.3.1.17.4.3	Quaternary Faulting within 100 km of Yucca Mountain (YM), Nevada	Surface mapping
8.3.1.17.4.4	Quaternary Faulting in NE-Trending Fault Zones	Surface mapping
8.3.1.17.4.10	Geodetic Leveling	Traversing
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
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 Compliance Department conducted ten surveillances this report period including ESF-5, Ghost Dance Fault, and others.

Four environmental compliance surveillances were conducted at the YM site ensuring compliance with permit and programmatic requirements.

The Environmental Monitoring and Mitigation Plan Progress Report (PR) for 1993 was completed and will be distributed to the public and affected state and local agencies.

Large Block Test

The loading frame procurement was completed. Aircraft Engineering Corp. of Paramount City, California, a small disadvantaged business, was awarded the contract of \$498,713.00 on September 20, 1993. Delivery of the frame components to the Nevada Test Site is scheduled for May 25, 1994. The loading frame will simulate lithostatic loading on the large block.

OCT 11 1993

Regulatory InteractionsSite Characterization PR

Preparations for PR 9 are underway and the review draft will be sent on November 5, 1993.

Nuclear Waste Technical Review Board (NWTRB) Interactions

Two dry runs have been held in preparation for the October 1994 Full Board meeting on DOE's Site Characterization Testing Program. Preparations are also underway for the November 1-2, 1993, workshop on Interim Storage (Engineered Barrier System [EBS]/Transportation and Systems [T&S] joint panel) and the November 22, 1993, briefing on the YMP Environmental Program (Environment and Public Health panel).

Advisory Committee on Nuclear Waste (ACNW) Interactions

The location for the ACNW October 1993 meeting has been changed from Las Vegas, Nevada, to Bethesda, Maryland. The meeting will be held October 27-28, 1993; topics for discussion include Low Level Waste Performance Assessment (PA) and a discussion of potential candidates for ACNW membership. (Drs. Stindler and Moeller are retiring as of December 1993).

The working group on UZ hydrology has been rescheduled from November 18, 1993, to the week of December 13, 1993, in Las Vegas; the working group will be held in conjunction with the 60th ACNW meeting and a site tour.

Issue Resolution

The Issue Resolution Steering Group meeting will be a videoteleconference on October 6, 1993, from 10 a.m. to 2 p.m. PST. Topics for discussion include the Seismic Hazards Topical Report, the EBS letter report, and an update of current issues.

Technical Analysis

Technical Analysis Branch and PA staff participated in FOCUS '93 in Las Vegas September 27-29, 1993. The emphasis of this session of FOCUS was site characterization and model validation.

The first draft of the "YMP Performance Assessment Strategy" was completed and delivered to DOE. The principal objective of the document is to provide for a common understanding of the general strategy and methodology of the PAs. The final draft will be issued as a YMP document with input from all PA participants and the YMP.

The PA staff participated in the planning teleconference organized by Les Berkowitz, new chairman of the Issue Resolution Working Group for groundwater travel time. Included in the teleconference discussion were schedule of activities, information assembly needs, ideas for position recommendations, evaluation and example calculations, desirable discussion topics for NRC information exchanges, and document preparation covering progress made.

OCT 11 1993

The PA staff completed revisions to six waste isolation evaluations. Two of the revisions concerned revised water use limits for the North Ramp Alcove #1 and Starter Tunnel. An additional four evaluations were revised to provide a more specific statement on the use of unqualified data.

Site Characterization Plan/Study Plan (SP) Status

STUDY PLAN BREAKDOWN

	Initial Plans	Major Revisions
Not Submitted to Yucca Mountain Site Characterization Project Office (YMPO)		
	38	0
In Screening Review	0	0
In YMPO Review	0	0
Awaiting Comment Resolution	6	3
In Verification Audit	3	1
Awaiting YMPO Approval	0	0
Awaiting Submission to NRC	1	1
Awaiting NRC Phase 1 Review	10	4
Accepted by NRC	46	5
Totals	<u>104</u>	<u>14</u>
Total Submitted to NRC	56	9

State of Nevada Comments Status:

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

NRC Comments Status:

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

B. Project Planning and Control

Submitted draft Planning and Control System system description to Headquarters (HQ).

Uploaded revised fiscal year 1994 cost and schedule planning data from participants and processed to project-level data base.

C. Quality Assurance (QA) Implementation

The Science Applications International Corporation Audit YMP-93-18 was held September 27-October 1, 1993, in Las Vegas.

No other audits will be held until January 1994.

OCT 11 1993

Lake H. Barrett

-7-

Surveillance 94-001, Design Control Improvement Plan Status, of the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O)-Las Vegas, is scheduled for October 11-15, 1993.

Quality (Q)-List Procedure Development

An Interim Change Notice on Administrative Procedure (AP) 6.17Q to resolve a Corrective Action Request is in Quality Assurance Procedure (QAP) 6.2 review.

The CRWMS M&O QAP-2-0, Work Control, and QAP-2-3, Classification of Items, is in QAP 6.2 review.

Q-List and Management Control-List Implementation

The Assessment Team Controlled List has been revised and is in QAP 6.2 review.

III. GENERAL INFORMATION ITEMS

Initiated development of approach to appointment of Chief Scientist.

Developed draft materials for use by RW-1 in discussions with U.S. Congress on repository program issues related to statutory and regulatory framework.

Coordinated development of DOE's list of suggested speakers on topics related to evaluating performance of engineered and natural repository systems for the December 16-17, 1993, meeting of the National Academy of Sciences (NAS) Committee on YM Standards.

Prepared summary of NRC/DOE Management Meeting on ESF Design Process, which was held on September 17, 1993.

Regarding Work Breakdown Structure 1.2.5.4.2 (Waste Package PA), repository-UZ-SZ-scale calculations have generally assumed homogeneous and isotropic fracture permeability. Even for bulk permeability as large as 84 darcy, these calculations have not shown heat pipes resulting in two-phase boiling conditions persisting at the repository horizon for an areal power density (APD) of 114 kW/acre (154.7 MTU/acre). Recent analytical work of J. Nitao and R. Bradford indicates that two-phase conditions can persist in locations of the repository horizon where sufficient focusing of condensate drainage occurs. For an APD of 114 kW/acre with focusing of condensate drainage two to three orders of magnitude greater than the mean condensate drainage flux, two-phase heat-pipe conditions could persist.

The following papers by the Los Alamos National Laboratory (Los Alamos) authors were presented at the FOCUS '93 meeting in Las Vegas:

June Fabryka-Martin, et al. - "Distribution of Chlorine-36 in the Unsaturated Zone at Yucca Mountain: An Indicator of Fast Transport Paths."

OCT 11 1993

Lake H. Barrett

-8-

Bruce M. Crowe, et al.- "Simulation Modeling of the Probability of Magmatic Disruption of the Potential Yucca Mountain Site."

Greg Valentine, et al. - "Effects of Magmatic Processes on the Potential Yucca Mountain Repository: Field and Computational Studies."

Arend Meijer - "Far-field Transport of CO₂ Retardation Mechanisms and Possible Validation Experiments."

Schon Levy - "Natural Alteration in the Cooling Topopah Spring Tuff, Yucca Mountain, Nevada, as an Analog to a Waste-Repository Hydrothermal Regime."

The SNL/YMP project staff moved to a new facility located off of Kirtland Air Force Base. The mailing address for SNL/YMP staff remains the same.

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." Current activities include recording seismic data from each blast round and completing installation of rockbolt load cells. Rock quality data is also being collected from the bench portion of the excavation. These data will be correlated with the ground support classification used and with damage assessments made by inspection of boreholes drilled for instrumentation to verify or improve the design methodology for determining the level of ground support needed in various rock conditions. In the past week, accelerometers were installed into two holes near the perimeter of the alcove drift. These instruments will measure very near field velocities from the initial blast round for the alcove. Additional holes near the perimeter will be used to inspect the near field damage resulting from the blasting. A down-hole TV camera was used to record the initial fracture density observed in these monitoring holes. After the initial blast round for the alcove, the holes will be inspected to determine the additional fracturing resulting from the blasting. By comparing the fracture damage with the measured velocities, quantitative measures can be developed to assist in improving the blast design.

As part of a separate construction monitoring effort, SNL has been monitoring the closure of the tunnel at key locations. This week SNL continued monitoring at two stations on the girders in the first 30 feet of tunnel, the three load cells on the high wall, and three load cells installed at 0 to 50 feet. Vertical closure stations at 60 feet and 100 feet were removed by the bench blasting and are no longer being monitored. These will be replaced by permanent monitoring stations installed as part of the Design Verification Study Plan. The intent of this activity is to provide data to the constructor so that they can make continuous evaluations of safety conditions as construction proceeds.

The USGS prototype LYNX stratigraphic and geometric model was received and installed by SNL. This model will be used for development of information of an integrated property distribution model capability that will incorporate both geostatistically-based physical property distributions and stratigraphic control.

OCT 11 1993

The Technical and Management Support Services (T&MSS) was audited by the Yucca Mountain Quality Assurance Division September 27-October 1, 1993. It was determined that the T&MSS QA Program was effective in all elements audited.

The Field Test Facilities Support Department staff completed two draft APs: AP-1XXX, "Site Maintenance Work Control System and Documentation," and AP-2XXX, "Condition of Property Facilities and Equipment Assessment." They also developed the Schema for Implementing Line Procedure and administrative support for the Operations and Maintenance Management Plan (YMP/93-01).

The Safety and Health Compliance Department staff completed recommendations to functional appraisal of the CRWMS M&O's Safety and Health Plan; resolved comments on YMP Safety and Health Advisory Committee on YMP Safety and Health Plan; conducted inspections on USGS facilities in Area 25 and Bank of America Center; and reviewed and accepted the Job Safety Analysis on pavement cleaning for Ghost Dance Fault.

The USGS performed gravity and magnetic geophysical surveys across the trace of the Ghost Dance Fault on a line extending east and west of the USW WT-2 borehole on YM. Areas to be cleared of overburden on the Ghost Dance pavement excavation were marked by the USGS mapping crew for Reynolds Electrical and Engineering Co., Inc., construction. Staff from USGS and SNL met to discuss the rock properties of the Ranier Mesa Tuff in the north tunnel ramp area.

The USGS PI was on-site to oversee the excavation of the new trench and soil test pits at Tarantula Canyon on Bare Mountain this week. Several interim reports and the Bare Mountain map have been received and are in USGS review. The SP 8.3.1.8.2.1 for tectonic effects on the water table has been written.

Gas is still being pumped from the packers in the UE-25 UZ-16 borehole, and the gas sampling test in the ESF tunnel was completed. The USGS laboratories in Denver, Colorado, are continuing to monitor water movement through the large block and vacuum-distill water samples from UZ cores. The USGS logging van made several measurements of water levels in USW UZ-14 this week, also.

A presentation entitled, "Using Geographic Information Systems for 3-Dimensional Regional Groundwater Flow Modeling in the Death Valley Region, Nevada and California," was presented by USGS technical staff at the 2nd International Workshop on Geographic Information Systems and Environmental Modeling in Breckenridge, Colorado, on September 30, 1993.

IV. PUBLIC OUTREACH AND INSTITUTIONAL ACTIVITIES

Various speakers participated in the Discovery Day held at the Yucca Mountain Science Center (YMSC) in Beatty, Nevada, on September 26, 1993. Approximately 45 members of the public participated in hands-on science activities featuring fossils, hydrology, rocks and minerals, volcanoes, and geology.

OCT 11 1993

A Public Open House tour of YM was coordinated and conducted on September 25, 1993, for approximately 275 people. Tour participants visited the YMSCs, the Field Operations Center, two laboratories, the LM-300 drill rig, the top of YM, and the ESF North Portal construction area.

Tours to YM were conducted on September 28, 1993, for 40 guests of the Southern Nevada Chevron Retirees Association; on September 28, 1993, for 15 guests of Entergy Energy Corporation; and on October 1, 1993, for 25 guests of Chubu Electric Power, Japan. Gave a pretour briefing to the Chevron Retirees group, and to the Entergy Energy and Chubu Electric Power groups at the Las Vegas YMSC.

Gave a Native American Indian Culture presentation at the Children's Discovery Museum on September 26, 1993, in Las Vegas. Gave this presentation to the A. D. Guy Boys and Girls Club on September 29, 1993, in Las Vegas; to the Estes McDaniel Elementary School on September 30, 1993, in Henderson, Nevada; and to the Pahrump Intermediate School on October 1, 1993, in Pahrump, Nevada. Total attendance at these presentations was approximately 830 people.

The YM Speakers Series presentation, "Radiation," was given at the Pahrump YMSC on September 26, 1993, and at the Las Vegas YMSC on September 28, 1993. Approximately 45 people attended these presentations.

Gave a technical presentation at the Emerging Technologies in Hazardous Waste Management conference in Atlanta, Georgia, on September 27, 1993. Approximately 50 people attended.

Gave an educational presentation to 12 members of 4-H Teams Exploring Careers on September 28, 1993, in Las Vegas.

Gave a presentation to the Harriet Treem Elementary School Make It/Take It Teacher Workshop on September 29, 1993, in Henderson. Approximately 40 people attended.

The IEA set up and staffed a YMP exhibit for the Nevada Library Association September 29-October 2, 1993, in Elko, Nevada. Approximately 100 people visited the displays.

The IEA staff accompanied Lincoln and Esmeralda County officials on a tour of the nuclear facilities and met with contractor staff in Oak Ridge, Tennessee, September 27-28, 1993.

Development of a revised Carbon-14 fact sheet entitled, "Nuclear Waste Repositories and Carbon-14 Emissions," was completed by IEA staff.

IEA and YMPO staff attended the U.S. Council on Energy Awareness - sponsored Crisis Communication Seminar in Pittsburgh, Pennsylvania, September 28-29, 1993.

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 Rebecca Nick 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>			
No significant meetings to report.			
C. <u>CRWMS M&O/DOE Meetings</u>			
Wednesday, November 3	CRWMS M&O Program Management Review	Las Vegas, NV	C. Gertz
D. <u>Internal and DOE/Nevada Operations Office Meetings</u>			
Friday, October 29	Technical Project Officers Meeting	Las Vegas, NV	C. Gertz
Friday, October 29	Planning and Budget Meeting	Las Vegas, NV	C. Gertz
E. <u>NRC Interactions</u>			
Monday- Tuesday, October 4-5	Technical Exchange - ESF	Las Vegas, NV	T. Bjerstedt
Wednesday, October 13	Technical Exchange - Radioactive Migration in the UZ (P)	Los Alamos, NM	T. Bjerstedt
Thursday, October 14	Technical Exchange - Near-Field Phenomena Related To Radio- nuclide Releases from the EBS (P)	Los Alamos, NM	T. Bjerstedt
Friday, October 15	Los Alamos Site Visit (P)	Los Alamos, NM	T. Bjerstedt
Wednesday, November 17	Seismic Hazards Assessment Technical Meeting (P)	Washington, DC	T. Bjerstedt

OCT 11 1993

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
E. <u>NRC Interactions</u> (Continued)			
Thursday, November 18	Interactions Scheduling Management Meeting (P)	Washington, DC	T. Bjerstedt
F. <u>NWTRB Interactions</u>			
Tuesday- Wednesday, October 19-20	NWTRB Full Board Meeting (P)	Las Vegas, NV	J. Nesbit
Monday- Tuesday, November 1-2	NWTRB Joint T&S/ EBS Panel Workshop (P)	Dallas, TX	J. Nesbit
Monday- Wednesday, January 10-12, 1994	NWTRB Full Board Meeting (P)	Arlington, VA	J. Nesbit
January or February 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>			
Wednesday- Thursday, October 27-28	ACNW 58th Meeting (P)	Bethesda, MD	A. Gil
Monday- Tuesday, November 15-16	ACNW 59th Meeting (P)	Bethesda, MD	A. Gil
Tuesday- Thursday, December 14-16	ACNW 60th Meeting- ACNW Working Group on UZ Hydrology; ACNW Site Tour (P)	Las Vegas, NV	A. Gil

OCT 11 1993

Lake H. Barrett

-13-

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
<u>H. 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>
<u>I. State and Public Interactions</u>			
Tuesday- Thursday, October 5-7	DOE/SKB Bilateral Meeting	Stockholm, Sweden	R. Levich
Tuesday, October 5	C.P. Squires Elementary School - Teachers In Service	Las Vegas, NV	E. Harle
Tuesday, October 5	Sun City Residents - General Overview	Las Vegas, NV	L. Smith R. Dyer A. Flint
Tuesday, October 5	East Las Vegas Library - General Overview	Las Vegas, NV	J. Peck
Wednesday, October 6	Beatty Elementary School - Native American Indian Culture	Beatty, NV	R. Arnold
Thursday, October 7	Las Vegas Breakfast- ers Lions Club - General Overview	Las Vegas, NV	J. Peck
Saturday, October 9	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Tuesday, October 12	Wasden Elementary School - Native American Indian Culture	Las Vegas, NV	R. Arnold

OCT 11 1993

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions (Continued)</u>			
Wednesday, October 13	Fay Herron Elementary School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Thursday, October 14	Science Now	Las Vegas, NV	C. Gertz
Monday, October 18	Fitzgerald Elementary School - Science	N. Las Vegas, NV	J. Blink
Tuesday, October 19	Community College of Southern Nevada - General Overview	Las Vegas, NV	G. Fasano
Tuesday, October 19	Marion Earl Elementary School - Geology	Las Vegas, NV	D. Merritt
Wednesday, October 20	Las Vegas Rotary Club - General Overview	Las Vegas, NV	J. Peck
Wednesday, October 20	Basset Book Shop - Native American Indian Culture	Las Vegas, NV	R. Arnold
Tuesday, October 26	YM Speaker Series (P) - "Water: Where It Comes From and Where It Goes"	Las Vegas, NV	C. Savard
Thursday, October 28	YM Speaker Series (P) - "Water: Where It Comes From and Where It Goes"	Beatty, NV	C. Savard
Thursday, November 4	Discover Southern Nevada - General Overview	Las Vegas, NV	TBD
Friday, November 5	Fitzgerald Elementary School - Science	N. Las Vegas, NV	J. Blink
Friday, November 5	International Brotherhood of Electrical Workers - General Overview	Las Vegas, NV	J. Peck
Monday, November 8	International Brotherhood of Electrical Workers - General Overview	Las Vegas, NV	J. Peck

OCT 11 1993

Lake H. Barrett

-15-

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions (Continued)</u>			
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	J. Peck
Tuesday, November 16	Society for Mining, Metallurgy, and Exploration - General Overview	Pomona, CA	TBD
Tuesday, November 16	Nevada Environmental Conference	Reno, NV	L. Smith
Wednesday, November 17	Republican Women - General Overview	Boulder City, NV	J. Younker
Thursday, November 18	American Nuclear Society (ANS)-Results of In-Situ Testing at Geologic Disposal Sites	San Francisco, CA	TBD
Sunday, November 21	YM Speaker Series (P) - "Archaeology in Perspective"	Pahrump, NV	W. Johnson
Tuesday, November 23	Variety School - Native American Indian Culture	Las Vegas, NV	R. Arnold
Tuesday, November 30	YM Speaker Series (P) - "Archaeology in Perspective"	Las Vegas, NV	W. Johnson
Monday, December 6	George Harris Elementary School - YM Johnny	Las Vegas, NV	J. Hartley
Saturday, December 11	Girl Scouts - Geology Merit Badge Workshop	Las Vegas, NV	Various
Tuesday, January 25, 1994	YM Speaker Series (P) - "Constructing a Tunnel to Study a Mountain"	Las Vegas, NV	D. McKenzie J. Peck
Thursday, January 27, 1994	YM Speaker Series (P) - "Constructing a Tunnel to Study a Mountain"	Beatty, NV	D. McKenzie J. Peck

OCT 11 1993

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Speaker</u>
I. <u>State and Public Interactions</u> (Continued)			
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. <u>Exhibits Scheduled</u>			
Friday- Sunday, October 1-10	Jaycees State Fair (P)	Las Vegas, NV	
Saturday- Friday, October 9-15	Association of Engineering Geologists	San Antonio, TX	
Wednesday- Friday, October 13-15	Nevada Association of Counties	Pahrump, NV	
Saturday, October 23	Public Open House (P)	Las Vegas, NV	
Monday- Thursday, October 25-28	Geological Society of America	Boston, MA	
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. <u>Exhibits Scheduled</u> (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-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

<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled</u>		
Monday, October 4	Logandale and Area Residents	TBD
Thursday, October 7	License Support System, Advisory Board	TBD
Tuesday, October 12	Sun City Senior Citizens	TBD
Tuesday, October 12	American Nuclear Energy Council	TBD
Wednesday, October 13	LLNL Science and Engineering Research Semester Students	TBD
Thursday, October 14	Nevada Association of Counties	TBD
Monday, October 18	Lincoln County School Board	C. Binzer B. Bush
Wednesday, October 20	Wildland Shrub and Arid Land Restoration Symposium	TBD

OCT 11 1993

<u>Date</u>	<u>Event</u>	<u>Escorts</u>
K. <u>Tours Scheduled (Continued)</u>		
Thursday, October 21	Power Engineer, Inc.	J. Peck
Saturday, October 23	Public Open House (P)	Various Escorts
Tuesday, October 26	National Association of Regulatory Utility Commissioners	TBD
Wednesday, October 27	Dadaelians	M. Voegele
Wednesday, November 17	Public Open House (P)	Various Escorts
Tuesday, November 23	Sun City B'nai Brith	TBD
Monday, November 29	NAS Tunnel Technology Committee	TBD
Friday, December 3	ACNW	A. Gil
Saturday, December 4	Public Open House (P)	A. Gil
Saturday, January 22, 1994	Public Open House (P)	Various Escorts
Thursday, March 31, 1994	National Council, State Garden Club Specific Region Convention	TBD

Handwritten signature of Carl P. Gertz

Carl P. Gertz
Project Manager



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

WBS: 1.2.7.4
QA: N/A

OCT 07 1993

Carl P. Gertz, Project Manager, YMP, NV

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

The following are the significant activities for the period from September 17, 1993 to October 1, 1993:

1. FIELD OPERATIONS CENTER

A. Management and Administration

- a. Provide 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. Supported ten (10) tours of YMP Facilities, including: Public Open House; NV League of Cities; Wastepackage Development; Western Legislative Conference; DOE Programmatic; Jewish Community Center; Southern NV Chevron Retirees Association; Entergy Energy Corp.; Chubu Electric Power, Japan; Focus 93 Group.
- e. Prepared and transmitted daily operations reports to NORSOC, and the biweekly reports to HQ OCRWM. Provided additional information for Final Report for ORPS NVOO-YMPO-SAIC-1993 0004 concerning an automobile accident involving a GSA vehicle. Met with DOE to discuss final format for letters requesting changes in ORPS Authority File. Coordinated with EG&G Idaho to place three persons in the correct facilities category for ORPS reporting.
- f. Prepared sixty (60) badge requests for visitors and field work, including one foreign national.
- g. Processed Job Package, JP 93-14 for the NRG-7 drill pad.
- h. Processed fifty-eight (58) Work Order Requests, providing for communications, field support and building maintenance, also processed one Technical Field Work Request.
- i. Processed fifty-three (53) 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. Completed revision of FOI 4705, "YMP Work Site and Area Access, Controls and Facility Permits".
- m. Continued with edit and revision of Emergency Management Plan and development of 1994 drill/exercise program. Prepared digital scanned images of Emergency Management Plan for other FOC team members. Compiled Nevada Population data; compiled Participant work descriptions and designed six forms to be used by the Emergency Management Program.
- n. Demonstrated GIS capabilities to DOE and SAIC personnel.
- o. Developed briefing slides for Site Manager.
- p. Installed and fine tuned OCR Software for scanner on FOC PC.
- q. Coordinated with REECo concerning out-of-compliance CARS on ORPS Reports and on rodent control for the SMF warehouse and other Area 25 buildings.
- r. Coordinated with RSN on letter from Martin & Peltyn, architects for FOC, concerning the soundness of Bldg 4015.
- s. Coordinated with WILTEL concerning unused phone lines in FOC, unused lines will be disconnected.
- t. Worked on reconciliation worksheet for FY94 for Information Resources.
- u. Reviewed YMP 30.1, "Occurrence Reporting and Processing of Operations Information", for input. Completed revisions of draft A, and submitted to PPD for preparation of draft B.
- v. Investigated a REECo accident on a drill rig in which an employee received a cut on his arm.
- w. Site Manager approved and authorized two Job Packages. JP 92-20E, "Hydrochemistry Tests in the North Ramp Starter Tunnel Alcove", and JP 93-13, "Construction of Access Road and Drill Pad for Borehole USW SD-12."
- x. Site Manager received from REECo the Work Completion Report for Soil and Rock Properties, Phase II Test Pits, JP 92-08.

B. Project Safety & Health (DOE/SAIC)

- a. Worked with M&O to develop presentation for Site Manager's monthly managers meeting.
- b. Developed program and schedule for weekly safety presentations at FOC weekly staff meetings.

- c. Provided research and guidance for Rodent Control program at SMF and other support buildings at the "Ranch".
- d. Completed inspection of Bank of America Phase II, for potential vermin infestation problems.
- e. Completed draft of UZ-14 Zeolite fiber sampling plan.
- f. Reviewed and commented on Job Packages JP 93-13; JP 93-14; and JP 93-9.
- g. Began development of Phase II revisions to "Underground Training Program" in cooperation with Training Department.
- h. Completed recommendations for M&O Safety and Health Functional Appraisal findings.
- i. Conducted five (5) surveillance: 1) 1 at C-Well Complex; 2) 2 at Ghost Dance Fault; 3) 1 at ESF shop and auxiliary facilities; and 4) 1 at ESF Pad Area.
- j. Conducted an AP 5.7 inspection of USGS Facilities.
- k. Reviewed and accepted the JSA for Ghost Dance Fault work of pavement cleaning.
- l. Reviewed MSHA, OSHA and CTSO for requirements of redundant fans on electrical systems for underground operations and provided recommendations to the DOE Safety Specialist.
- m. Reviewed the RSN project "Functional Needs" document.
- n. Submitted suggested language for safety paragraph for inclusion in the Nye County Drilling Protocol.
- o. Resolved comments from YMP Safety and Health Advisory Committee on YMP Safety and Health Plan.
- p. Performed rodent inspections of Area 25 buildings and coordinated meeting to develop a sanitation plan for rodent control in Area 25.
- q. Measured air quality and relative humidity during rockbolt drilling/installation operations at ESF Starter Tunnel.
- r. Supported on going tours.
- s. OCCURRENCE REPORTS
 - 1. REECo - one outstanding: 1 awaiting Program Manager Signature.
 - 2. SAIC - one outstanding: 1 awaiting Facility Manager Signature.

2. Raytheon Services Nevada, (RSN)

A. Field Support

- a. Survey of Starter Tunnel is on going.
- b. Location of Surface Conveyor System is complete.
- c. Location of siting for trailers on ESF is complete.

- d. Support of Fran Ridge Large Block Sawing is ongoing.
- e. Layout of Environmental Clearance and Test Pits for Aggregate Study Area.
- f. As-Built Borehole NRG-2B, calculations remain.
- g. Surveyed drill holes in Starter Tunnel.
- h. Restake of NRG-7 borehole with rough grade of drill pad is complete.
- i. Layout of Grounding Grid and trenches for 69kV Power Line at ESF is complete.
- j. Survey of SD-12 environmental clearance area is complete.
- k. Survey Crew continuing work on A-25 Survey Control Net.
- l. 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. Performed inspection on 60 kV Temporary Power Line. No Nonconformances identified.
- c. Performed weekly surveillance on trenches on Stagecoach Road (SCR-T1-T2-T3) and in Crater Flats (SCF T-2-CF-1 and Trench 8). Fences being reinstalled around trenches.
- d. Monitored construction of Bare Mountain Trenching Operations for BMT-1, TP-8, and TP-9.

3. Sample Management Facility (SMF/SAIC)

- a. Continued supporting drilling on UZ-14.
- b. Seventeen sample examinations were conducted by SNL, USGS, DOE, NRC and LANL.
- c. Continued monitoring and oversight of prototype drilling tool development conducted at Colorado School of Mines (CSM). CSM analyzing data collected from EXLOG studies.
- d. Continue converting Branch Technical Procedures to Implementing Line Procedures and revising Administrative Procedures to incorporate new QARD requirements.
- e. Shipped core specimens for SNL PI for analysis.
- f. Created 71 specimens from core samples for analysis by various Principle Investigators.

4. YMP Hydrologic Research Facility, (USGS)

The following activities were accomplished by USGS Staff:

- a. The USGS Facilities underwent H & S inspection by DOE.

Geologic Studies Program:

- a. Met with LANL ESF planning staff.
- b. Monitored seismic stations in Jackass Flats and on Rainier Mesa for Kiloton Chemical Explosion and the Death Valley Seismic Shot.
- c. Observed excavation work at Ghost Dance Fault exposure on Antler Ridge and marked exposures for pavement cleaning.
- d. Maintained and calibrated seismic network stations on Yucca Mountain, Little Skull Mountain and Nellis Air Force Range and retrieved and packaged equipment used for the kiloton chemical explosion.
- e. Logged trenches and soils in Midway Valley.
- f. Mapped Stagecoach Road Trenches (SCRT-1 & SCRT-3).
- g. Performed gravity and magnetic surveys across Ghost Dance Fault on line east and west of borehole WT-2.
- h. Met with Agapito personnel to discuss rock properties of Rainier Mesa Tuff in the North Tunnel Ramp Area.
- i. Observed excavation of new trench and soil test pits at Tarantula Canyon on Bare Mountain.
- j. Obtained nonwelded tuff samples from Yucca Mountain.

Hydrologic Investigation Program:

Saturated Zone:

- a. Calibrated water level monitoring transducers, performed routine water level measurements and recovered data from deep boreholes in and around Ranch.
- b. Delivered and set up equipment at C-Well Complex.

Unsaturated Zone:

- a. Ran gas sampling test at UZ-16 and assembled prototype gas sampling test in a split set hole at ESF Tunnel.
- b. Completed prototype testing of air permeability packer system in C-1.
- c. Logged fractures in core samples at SMF.
- d. Moved trailer for perched water sampling to ESF pad.
- f. Monitored leak test on cement job through perched water zone and provide technical input for next cement job at UZ-14.

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

A. Drilling

- a. JP 92-17, UZ-14, LM-300 drill rig, reamed cement to 1274.00 feet. Finished cleaning hole to 1282.00 feet. Evaluated cement job and monitored water influx.

B. Logistics

- a. Continued requisitioning supplies, materials, and services for YMP Field Operations Center.
- b. Supported ongoing tours, including an open house public tour.
- c. Supported construction efforts in Area 25.
- d. Arranged for rodent trapping and clean up of droppings at the Sample Management Facility.

C. Construction

N/A

6. Los Alamos National Laboratory, (LANL)

- a. Construction activities consisted of installing permanent rockbolts in the tunnel except at the location of the test alcove.
- b. Assisted DOE/FTC in collecting extremely large rocks for Sandia National Laboratory.
- c. Load Cell readings were taken at CS 0+50 and extensometer measurements were taken at CS 0+30 and 0+60.
- d. Tracer water used total to date is 377,293 gallons.
- e. Four blast vibration monitoring holes were drilled in preparation of blasting the test alcove.
- f. J.F.T. Agapito set up geophones to record the Chem-KT blast at N Tunnel.
- g. Test blast to determine the effect on surrounding rock was completed 09/20 for the Fran Ridge Large Block Test.
- h. Drilled a dry 2 meter hole in face of test alcove, a splitset rockbolt was inserted and the PI installed a packer and started sampling air.

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

- a. Received and Issued to following Controlled Documents:

JOB PACKAGES

YMP/JP93-14, Rev. 0, "Construction of the Drill Pad for Borehole USW NRG-7".
YMP/JP92-20E, Rev. 0, "Hydrochemistry Tests in the ESF North Ramp Starter Tunnel Alcove #1".

TEST PLANNING PACKAGES n/a

SPECIFICATIONS n/a

DRAWINGS

YMP-025-1-MING-MG121, Rev. 2
YMP-025-1-MING-MG123, Rev. 3
YMP-025-1-MING-MG126, Rev. 2
YMP-025-1-MING-MG128, Rev. 2
YMP-025-1-MING-MG135, Rev. 2
YMP-025-1-MING-MG137, Rev. 1
YMP-025-1-MING-MG138, Rev. 2
YMP-025-1-MING-MG139, Rev. 2
YMP-025-1-MING-MG147, Rev. 2
YMP-025-1-MING-MG148, Rev. 1
YMP-025-9-STRU-ST100, Rev. 0

WORK PROGRAMS n/a

FCRs

FCR 93/503, "Reinstatement of TBV and Unverified notes on MG121, MG122, and MG125".
FCR 93/514, "Pagination Correction to Section 03361".
FCR 93/512, "Material Dedication (Replacement for FCR 93/491)".
FCR 93/519, "Revised Excavation Procedure".
FCR 93/521, "Test Alcove Changes to YMP-025-1-SP09".

- b. REPRODUCTION:
 - 15,666 pages copied
 - 1,227 drawings copied
- c. DOCUMENTS ISSUED:
 - 705 controlled documents
 - 385 DWG's
 - 251 FCR's
 - 69 JP's
 - 319 information copies
- d. DTAR logoffs: 283
- e. Delivered 231 full size drawings of FOC bldg to DOE.

8. Field Training (SAIC)

- a. ESF Visitor Training, 48 people attended.
- b. GET 1.5 Refresher Training, 7 students passed.
- c. Radiological Control Testing, 7 people tested.
- d. New Underground Worker Training, 4 people attended.

- e. GERT/GET 1.2, 1.3, & 1.4 Training, 23 people attended.
- f. Facilitated team meeting on MacCSITS System at SMF.
- g. Conducted special ESF Visitor Training for 23 people.

Winfred A. Wilson

Winfred A. Wilson
Site Manager

YMP:WAW-93/237

CC:

L. R. Hayes, USGS, Las Vegas, NV
R. W. Craig, USGS, Las Vegas, NV
R. F. Pritchett, REECo, Las Vegas, NV
P. S. Justus, NRC, Las Vegas, NV
R. R. Kovach, LANL/YMSO, Mercury, NV
N. Z. Elkins, LANL, Las Vegas, NV
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