



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

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

Tel: (702) 388-6125

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

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

DATE: FEBRUARY 10, 1993

SUBJECT: YUCCA MOUNTAIN SITE OFFICE (YMSO) FIELD ACTIVITY REPORT FOR THE WEEKS ENDING JANUARY 22, AND JANUARY 29, 1993 AND OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEKS ENDING JANUARY 22 AND JANUARY 29, 1993

Please find enclosed the above-referenced reports.

There is nothing requiring specific management attention in the reports.

cc: w/enc.: Charlotte Abrams, M/S 4 H 3  
Rosetta Virgilio, M/S 3 D 23  
Dean Kunihiro, Region 5

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PDR WASTE  
WM-11 PDR

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WM-11  
N403



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

**FEB 04 1993**

Carl P. Gertz, Project Manager, YMP, NV

YUCCA MOUNTAIN SITE OFFICE (YMSO) FIELD ACTIVITY REPORT

The following are the significant field activities for the weeks ending January 22, 1993 and January 29, 1993:

1. Field Operations Center, (YMSO)

A. Management and Administration

- a. The Site Manager and FOC staff participated in and provided operational and logistical support to several tours conducted during this period. These were: Sacramento Bee, Tonopah Middle School, Savannah River, NV Nuclear Waste Study Committee Advisory Board, Japan Electric Power, M&O Employees and Jo Mackey 6th Grade Center.
- b. The Site Manager, in support to the accelerated drilling activities at NRG-6, will have 2-members of his staff activating the FOC from 1600 hours to 0030 hours from February 1, 1993 through February 19, 1993.
- c. Select staff members of the FOC reviewed the forthcoming JP 93-1, Drilling of Borehole, NRG-3.
- d. Site Manager on January 27, authorized REECO to commence with repairing and upgrading the road leading to the top of Yucca Mountain again. This was necessary due to the severe inclement weather that was prevalent here at Area 25 during the past several months. Major deterioration and water erosion currently exists due to the rain fall and snow/ice cover.
- e. Completed paperwork, signatures and other administrative procedures for issuing vehicles, first aid kits, fire extinguishers, and other necessary equipment to personnel performing field duty.
- f. Processed fifteen (15) work order requests.

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- g. Performed end-of-day building lock-up and security tasks.
- h. Removed previously reported computer virus from additional FOC computer and reloaded all software.
- i. Met with DOE and SAIC representatives to discuss hook up of VAX service to west wing of FOC and discussed the saturation status of 56K communication line to Las Vegas.
- j. The Bullfrog Planning Commission continuing with development of data base for Facilities Management Program.
- k. Preparing for presentation of Initial (Winn 1) Facilities data base program to Site Manager.
- l. Attended DOE/NV Emergency Management Working Group quarterly meeting.
- m. Filed final ORPS Report on Power Outage at FOC (ORPS Report 1992-0005). Files notification report on power failure at MET Tower, 1/16 (ORPS Report 1993-0001).
- n. Coordinated taking of Stereo Photos, Still Photos, and Video of excavation face of the ESF North Portal.
- o. Drafted three instructions (trench/pit, stereo, and construction progress photography) to augment FOI 4002, sent to PI's for comment.
- p. Submitted six daily operations reports to NORSOC.
- q. Met with Site Manager to discuss FOC duty officer requirements for second shift operations.
- r. Prepared report on standard computer usage in the FOC.
- s. Commenced training another individual on ORPS System.
- t. Responded to rush request for weekly construction progress photos for Gertz, Wilson, Petrie and Catozzi.

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- u. A Still Photo Mission was conducted to document Gate 510, Lathrop Wells Road and Area 25 Support Facilities, 1/26.
- v. Initial YMSO Field Activities Video Report (for internal use only) was completed; to be delivered to Site Manager 2/2.
- w. Video tape footage is being time coded and new footage shot for First Official Media release to be distributed subsequent to 2/28.

B. Project Safety and Health, (DOE/SAIC)

- a. Attended several meetings with REECO, M&O, DOE/EDD, T&MSS Training, and T&MSS SHCD to determine how the training for underground work is to proceed.
- b. Reviewed 44 CFR, "Federal Emergency Management Administration" to see if YMP can use any of their procedures.
- c. SHCD staff attended GERT Training.
- d. Reviewed changes on the MET Tower and submitted report of conclusions.
- e. Surveillances conducted: ESF = 2; SMF - 1; and Site Maintenance Building = 1. Issued two reports on surveillance findings on the ESF.
- f. Occurrence Reports - none awaiting FM Signature.
  - 1. REECO - 7 outstanding: 3 rejected (2 on 06/02/92; 1 on 09/33/92; and 3 -10 day notification (11/23/92; 12/28/92 and 01/14/93).
  - 2. SAIC - 3 outstanding: 1 rejected (by F, 07/27/92); and 1 - 10 day update (12/09/92); and 1 notification (01/18/92).
- g. Collected dust samples at NRG-2 to test for silica.
- h. Surveillances conducted: SAA at UZ-16 = 1; UZ-16 =1; NRG-2 =1 and NRG-6 = 1. Issued two reports on surveillance findings on the ESF.
- i. Worked on REECO Job Safety Analysis for starter tunnel, Occupational Safety & Health Training requirements for FY 93, Underground Tunnel Access Training Requirements, and Five Year Safety and Health Plan.

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- j. Briefing paper on the OSHA Reform Act was prepared for presentation to Carl Gertz.
- k. Materials for two presentations were prepared as overheads for Site Manager to use.
- l. Reviewed JP 93-01 for safety requirements.

2. Raytheon Services Nevada, (RSN)

A. Field Support

- a. Geologic mapping survey of Ghost Dance Fault in progress.
- b. Geologic Mapping of North Portal Box Cut is underway. Calculations remain.
- c. Field Engineering continues to check Trench 14 Daily to insure suitability for operations.
- d. Issued for (4) initiations (WIs) in support of ongoing and upcoming job packages.
- e. As build survey of NRG-2 Drill Pad in progress. Access Road must be surveyed. Calculations remain.
- f. Verified vertical alignment on CME-850, at NRG-2 location.
- g. Verified vertical alignment on LM-300, at UZ-16 location.
- h. Survey crew continuing to work on Area 25 Survey Control Net.
- i. Electrical as built of the FOC, Building 4015, are complete and are in the signatory process.
- j. Survey reconfirmed the NRG-4 Borehole location.
- k. As build survey of NRG-2 Drill Pad is complete, Job Package to be transmitted.
- l. Completed survey for environmental survey of NRG-2.
- m. Survey of UZ-1 pad, as-built, is complete. Calculations remain.

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**B. Quality Control**

- a. Continued verification of activities on UZ-16 borehole.
- b. Closed the following packages and sent to RSN Records Coordinator:
  1. RF-3, 3B and 5, FVP-92-027, YMP/WP/93-05 (Borehole Security Program #6).
- c. Performed surveillance on the trenches in Crater Stagecoach Road Area (SCR-T1, T2 and T3).

**3. Sample Management Facility, (SMF/SAIC)**

- a. Continued supporting drilling operations and processing core and cuttings from UZ-16, UZN-61, NRG-6 and NRG-2.
- b. Supported Sample Overview Committee Meeting, 1/19.
- c. Shipped two boxes of core specimens to Los Alamos.
- d. Removed from UZN-55, 31 core specimens for USGS.
- e. Preparing geologic cross-section through North Ramp for FTC to check projection of Bow Ridge Fault.
- f. Shipped 31 barrels of cuttings specimens to Tucson AZ.
- g. Supported DOE QA surveillance on BTP-SMF-002.
- h. Laid out approximately 250 boxes of core for examination by USGS and DOE.

**4. YMP Hydrologic Research Facility, (USGS)**

- a. Scott Lundstrom in field looking at possible volcanic ash localities in upper Yucca Wash. Conducted field trip with Emily Taylor, John Wesling and Andy Thomas.
- b. Pete Striffler, Gordan Ratray and Murrey Beasley monitoring tracer gas injection and observing core collection for hydrochemical studies.
- c. Steve Beason, Paul Berger and Mike Fahey, USBR, conducting mapping of exile hill, North Portal Box Cut.
- d. John Wesley and Andy Thomas, Geometrics, described soil profiles in Midway Valley Trench 5a.

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- e. Chris Mengbes, Scott Lundstrom and Emily Tyler, at site to continue trench logging studies. Trench 14D reviewed, compared to original mapping with new mapping. Cleaned exposures of Busted Butte and started mapping stratigraphy. Checked condition of Staecoach trenches.
- f. Joe Whelan at SMF conducting studies of samples of Busted Butte.
- g. David Buech at SMF conducting sample studies.
- h. Mark Kurzmack, Denver, working Calibration Lab.
- i. Joe Vukovich and Staff, National Mapping Division, in Beatty, Lathrop Wells are mapping.
- j. Chris Menges, at site to continue trench logging studies. Cleaned exposures of Busted Butte and started mapping stratigraphy.
- k. Tom Cane, USGS-WRD, at Yucca Mountain collecting data.
- l. Rick Spengler, Scott Lundstrom, Larry Martin, Ron Linden and Art Braun at Yucca Mountain in support of Geological Field Trip involving Ghost Dance Fault.

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

Activities conducted during week ending January 22, 1993:

A. Drilling

- a. JP 92-3, UZ-16, LM-300, cored to 1,279.01 feet, reamed to 1,262.78 feet. Deviation survey 1238 feet - 2 degrees.
- b. JP 92-11, NRG-6, Joy #1, cored to 351.10 feet, reamed to 317.42 feet. Deviation survey 310 - 0 degrees 25 minutes. At 317.42 feet casing stopped moving down hole, made 2 inches with hammer. Tripped out and made preparations for change over to the Odex 115 system.
- c. JP 92-13, Borehole Security Program 3, secured 3 water table boreholes and 6 neutron holes with and photographed same.
- d. JP 92-14, Borehole Security Program 2, secured 14 boreholes with locks and photographed same.

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- e. JP 92-19, CME-850, NRG-2, Rigged up, cored to 144.57 feet, reamed to 133.62 feet. Recovered crown of core bit from hole. At 131.01 feet hole sloughed in sticking core pipe, worked pipe free and continued operations.
- B. Logistics
- a. Continued requisitioning supplies, materials, and services for YMP Field Operations Center.
- C. Construction
- a. JP 92-20, "ESF North Portal Pad & Facilities"... REECO continued cut and fill at the pad, as well as continued excavation of the north drainage channel.

Activities conducted during week ending January 29, 1993:

- A. Drilling
- a. JP 92-3, UZ-16, LM-300, cored to 1,339.06 feet, reamed to 1,319.01 feet. Deviation survey 1278 feet -2 degrees.
  - b. JP 92-11, NRG-6, Joy #1, cored to 351.10 feet, reamed to 344.87 feet. Still having trouble getting back i into hole, hole is still tight at 262 feet.
  - c. WP 92-13 Borehole Security Program 3, secured 11 water table boreholes and 89 neutron holes with and photo-graphed same. Completed.
  - d. JP 92-14, Borehole Security Program 2, secured 49 boreholes and photographed same. Completed.
  - e. JP 92-19, CME-850, NRG-2, cored to 215.15 feet, reamed to 172.93 feet. Total depth reached, 1/27. Laid down tools and rigged down.
- B. Logistics
- a. Continued requisitioning supplies, materials, and services for YMP Field Operations Center.
  - b. Supported tours during the week.
  - c. Supported REECO Construction Department in acquiring specialty items needed in operations.

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C. Construction

- a. JP 92-20, "ESF North Portal Pad & Facilities,".... REECo continued cut and fill at the pad; excavation of North and South drainage channels; continued installation of split-set rock bolts at boxcut.

6. Los Alamos National Laboratory, (LANL)

- a. Coordinating support for mapping of "boxcut" excavation at the North Portal. First Mapping Effort completed 1/22. Mapping effort consisted of Surface (USGS/USBR), survey to target points (RSN) and stereo photography (SAIC/JC).
- b. Discussed use of water for cleaning face with REECo. Water usage is being monitored and logging as mapping proceeds.
- c. Discussed with SAIC processing, distribution, and archiving of photographs. Draft FOI is being developed to cover this topic.
- d. Safety requested Job Safety Analysis's be in place prior to second mapping session. Working on complying with this request.
- e. Monitored construction at the North Portal box cut and investigation requirements for Job Safety Analysis covering the geologic surface mapping of the box cut.
- f. Discussions continued with SAIC concerning processing, distribution, and archiving of photographs. Draft FOI is being developed to cover this topic.

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

Activities during week ending January 22, 1993:

- a. Received and Issued to following Controlled Documents:  
Job Packages: JP 91-1, Rev. 0, Obsolescence of this Job Package.  
JP 91-2, Rev. 0, Obsolescence of this Job Package.

FCRs: FCR 93/080, Rev. 0, "Replacement for FCR 03/009: Pavement clearing at NRG-1."  
FCR 93/107, Rev. 0, "Clarification to SP09. 02165 Rockbolts & Accessories."  
FCR 93/111, Rev. 0, "RSN Program Number."  
FCR 93/114, Rev. 0, "Remove One Sentence from Part B.1.d of the Job Package."

- b. Reproduction: 9,914 pages copied.  
146 drawings copied.
- c. Documents Issued: 317 controlled documents.  
7 uncontrolled documents.
- d. DTAR logoffs: 118.
- e. Printed and folded "first" engineering copies with new Xerox 5080 drawing copier.

Activities during week January 29, 1993:

- a. FCRs: FCR 91/082, Rev. 0, Obsolescence  
FCR 91/083, Rev. 0, Obsolescence  
FCR 91/084, Rev. 0, Obsolescence  
FCR 91/086, Rev. 0, Obsolescence  
FCR 91/105, Rev. 0, Obsolescence  
FCR 91/106, Rev. 0, Obsolescence  
FCR 91/107, Rev. 0, Obsolescence  
FCR 92/044, Rev. 0, Obsolescence  
FCR 92/045, Rev. 0, Obsolescence  
FCR 93/113, Rev. 0, "Add JPRC and Record Package Tracking of the Job Package."  
FCR 93/116, Rev. 0, "Remove one sentence from Part B.1.d of the Job Package."  
FCR 93/116, Rev. 0, "Add Attachment #2 to Job Package."

- b. Reproduction: 11,170 pages copied.  
3,390 square feet of drawings.
- c. Documents Issued: 447 controlled documents.  
227 uncontrolled documents.
- d. DTAR logoffs: 342.

8. Field Training, (SAIC)

- a. Training was conducted for GET 1.1, 1.2, 1.3, & 1.4. A total of 36 people attended.
- b. 14 GET 1.5 exams were administered. All examinees passed.

Carl P. Gertz

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- c. Red Cross Standard First Aid Training was given. A total of 7 people attended.

*Winfred A. Wilson*

Winfred A. Wilson  
Site Manager

YMP:WAW-36

cc:

R. M. Cameron, CRWMS M&O/YMSO, Mercury, NV  
R. R. Schneider, SAIC/YMSO, Mercury, NV  
M. D. Voegele, SAIC, Las Vegas, NV  
G. K. Beall, SAIC, Las Vegas, NV  
J. H. Peck, SAIC, Las Vegas, NV  
E. M. Gardiner, SAIC, Las Vegas, NV  
C. J. Cotten, SAIC, Las Vegas, NV  
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J. R. Dyer, YMP, Las Vegas, NV  
S. B. Jones, YMP, Las Vegas, NV  
D. R. Williams, YMP, Las Vegas, NV  
J. T. Sullivan, YMP, Las Vegas, NV  
R. B. Baumeister, YMP/YMSO, Mercury, NV  
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R. J. White, YMP/YMSO, Mercury, NV  
Phil Justus, NRC, Las Vegas, NV

bcc:

A. C. Bonk, REECo, Las Vegas, NV



WBS 1.2.9.2  
QA: N/A  
**Department of Energy**  
Yucca Mountain Site Characterization  
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P. O. Box 98608  
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**FEB 04 1993**

Lake H. Barrett, Acting Director, Civilian Radioactive Waste Management,  
HQ (RW-1) FORS

OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING  
JANUARY 29, 1993

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

A. Site Characterization Planning

Field Operations

The Site Manager and Field Operations Center staff participated in and provided logistical support for five major tours this reporting period.

On Job Package (JP) 92-3, UZ-16, drilling continues with the LM-300 drill rig. As of January 26, 1993, the borehole had been cored and reamed to 1319.01 feet.

Regarding drilling activities at NRG-2 (30-degree angle hole) with the CME-850 drill rig, Reynolds Electrical & Engineering Co., Inc. (REECo), has cored to a depth of 199.36 feet with the Odex casing at 172.93 feet.

Drilling continues with the Joy 1 rig at NRG-6. As of January 26, 1993, REECo had cored to a depth of 351.10 feet with the six-inch Odex casing down to 339.45 feet.

On JP-92-20, North Exploratory Studies Facility (ESF) Portal Pad and Access Road, REECo continues to cut and fill on the North Portal Pad. Excavation of the high wall and box cut has begun. Geologic mapping of the box cut is underway with a two-man crew from the U.S. Geological Survey (USGS)/U.S. Bureau of Reclamation. Work continues with the excavation of the north draining ditch.

Starting February 1, 1993, and continuing through February 19, 1993, two drill crews will be working a day shift and a swing shift (4 p.m. to 12 a.m.).

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Sample Management Facility (SMF)

Thirty-one barrels of cuttings specimens were shipped to Hydro-Geo-Chem, Inc., in Tucson, Arizona.

The U.S. Department of Energy (DOE) Quality Assurance (QA) surveillance on Branch Technical Procedure SMF-002 was supported.

Approximately 250 boxes of core were laid out for examination by USGS and DOE.

Core specimens are being removed from UE25 UZ-16 for USGS and Los Alamos National Laboratory (Los Alamos).

Drilling operations were supported for UE25 UZ-16, USW NRG-6, and UE25 NRG-2.

Processing of core and cuttings from UE25 UZ-16, USW NRG-6, and UE25 NRG-2 continued.

Sixty-nine feet of Calico Hills core from UE25 UZ-16 were logged (100 percent recovery).

Ninety-five feet of core from UE25 NRG-2 were logged. The Rainier Mesa/Tiva Canyon fault contact is at 168.8 feet.

The geologic cross section through the North Ramp is being prepared for Field Test Control to check projection of the Bow Ridge Fault.

Regulatory InteractionsIssue Resolution

The proposed resolutions to all comments on the Erosion Topical Report have been completed and forwarded to the reviewers. The report is currently being revised to incorporate these comments; a revised draft will be sent to the reviewers next week.

Advisory Committee on Nuclear Waste (ACNW) Interactions

Topics of discussion at the ACNW's 50th Meeting, which was held January 27-28, 1993, in Bethesda, Maryland, included the following: changes in the National Energy Policy Act, impacts of changes to the U.S. Environmental Protection Agency standard to a health-based standard, placing active institutional controls on a potential system for postclosure oversight, and the feasibility of predictions on engineered barrier performance. The Center for Nuclear Waste Regulatory Analysis (CNWRA) will brief the ACNW on their work on area natural analogues.

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ESF Task Force Activities

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

|  |                  |
|--|------------------|
| Receive Tunnel Boring Machine (TBM) Vendor Proposals | February 9, 1993 |
| Award Subcontract for Underground Construction       | April 1993       |
| Award TBM Contract                                   | April 1993       |
| Start Excavating TBM Launch Chamber                  | April 2, 1993    |

Site Characterization Plan (SCP) Study Plan (SP) Status

One SP was approved by the Yucca Mountain Site Characterization Project Office (YMPO) this week: SP 8.3.1.17.4.3, "Quaternary Faulting Within 100 Kilometers of Yucca Mountain, Including the Walker Lane."

STUDY PLAN BREAKDOWN

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|   |    |
|---|----|
| In Screening Review .....   | 0  |
| In YMPO and DOE/Headquarters (HQ) Review .....                            | 6  |
| Awaiting Comment Resolution .....   | 9  |
| Awaiting Author Revision .....  | 3  |
| In YMPO/HQ Verification Audit .....                                       | 6  |
| Preparing to Submit or Awaiting YMPO Approval .....                       | 1  |
| Awaiting Submission to the U.S. Nuclear Regulatory Commission (NRC) ..... | 2  |
| NRC Phase 1 Review .....  | 22 |
| NRC Acceptance .....  | 30 |
| Total .....   | 79 |

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SCP/SP Status:

|   |     |
|---|-----|
| Total SPs Assigned to Cover 106 Studies ..... | 104 |
| SPs Not Yet Submitted for Review .....        | 36  |
| SPs Submitted for Initial Review .....        | 68  |
| Revised SPs Submitted for Review .....        | 5   |
| Revised ESF SPs Submitted for Review .....    | 6   |
| Total SPs Submitted for Review .....          | 79  |

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State of Nevada Comments Status:

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|--|----|
| Received Comments from the State of Nevada .....   | 13 |
| Responses Transmitted to the State of Nevada ..... | 10 |

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NRC Comments Status:

|  |    |
|--|----|
| Received Comments from NRC .....               | 17 |
| Responses Transmitted from OGD to DOE/HQ ..... | 16 |

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Critical ESF SP Status:

SP 8.3.1.2.2.4, "Characterization of the Yucca Mountain Unsaturated Zone ESF Study," was transmitted to NRC on January 21, 1993.

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B. Project Planning and Control

Written analyses were completed from all Planning and Scheduling Account Variance Analysis Reports that exceeded established cost and schedule variance thresholds. In-depth reviews of participant planning of carryover funding were completed.

C. QA Implementation

Determination of Importance and Grading Enhancement

Implementation

The results of the Early Classification of Natural Barriers workshop were presented to the Assessment Team (AT) for review. The report documenting these results has been submitted to the workshop participants for approval. The AT review has been initiated.

The review of the draft of the phase-out approach for cancellation of AP 6.17Q, Classification of Items Important to Safety and Waste Isolation, continues.

The proposed approach for conducting Probabilistic Risk Assessment efforts as part of classification of the Engineered Systems has been developed and presented to the AT for review.

D. Public Outreach and Institutional Activities

Carl Gertz, Project Manager, was a guest on a KCEP radio talk show in Las Vegas, Nevada, on January 23, 1993.

Tours to Yucca Mountain, Nevada, were conducted on January 25, 1993, for five guests of Japan Electric Power; on January 27, 1993, for eight Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) employees; and on January 28, 1993, for 120 guests from Joe Mackey Sixth Grade Center.

Tom Pysto, Technical & Management Support Systems (T&MSS), gave a general project overview and a presentation on Native American culture to sixth and seventh grade classes at Burkholder Middle School in Las Vegas on January 26, 1993. Approximately 40 students attended these presentations.

A. C. Robison, YMPO, provided a general overview presentation to 45 members of the Americana Group Realtors in Las Vegas on January 26, 1993. Gregory Fasano, T&MSS, also provided a general overview to approximately 25 members of the Breakfast Club Exchange on January 28, 1993.

Richard Arnold, a consultant, gave two presentations on Native American Culture to approximately 96 eleventh grade students at Green Valley High School in Henderson, Nevada, on January 27, 1993, and to the Cub Scouts Pack 223 at C. H. Decker Elementary School in Las Vegas on January 28, 1993. Approximately 150 people attended the second presentation, including first through fourth grade students and parents.

The Institutional and External Affairs (IEA) staff completed final production and delivery of the ESF training video to the Engineering and Development Division. The 22-minute video explains Yucca Mountain site characterization elements and includes computer animation of the underground ESF laboratory and planned tests.

The IEA staff developed a YMP overview exhibit specifically designed to be permanently displayed at DOE/HQ in Washington, D.C. The exhibit features photographs, graphs, and organization charts to illustrate site characterization activities at Yucca Mountain.

The IEA staff attended meetings in Carson City, Nevada, January 25-26, 1993, and provided requested information on the YMP to government officials and other leaders.

## II. ANALYSIS & VERIFICATION DIVISION

The staff attended the ACNW 50th Meeting in Bethesda, Maryland, January 27-28, 1993.

The staff attended the NRC-sponsored Workshop on Unsaturated Zone (UZ) Ground-Water Hydrology January 25-28, 1993, in Tuscon, Arizona. The primary focus of the workshop was on field methods to investigate UZ ground water as applicable to the Apache Leap Site.

A paper entitled, "The DOE Waste Acceptance Process for the Vitrified High-Level Waste Form," was submitted for the International High-Level Radioactive Waste Management Conference in Las Vegas in April 1993.

Comments were provided to RW-5 on the fiscal year 1992 Office of Civilian Radioactive Waste Management (OCRWM) Annual Report to Congress.

Comments were provided on a draft report resulting from the DOE's Workshop on the Use of Expert Judgment in Decision Making held November 18-20, 1992.

### III. GENERAL INFORMATION ITEMS

#### Lawrence Livermore National Laboratory

Hydrothermal calculations of the UZ and saturated zone (SZ) show that the spatial domain of hydrothermal effects extends at least 1 kilometer below the water table and 15 kilometers radially away from the heat source.

Because of the dominance of repository-heat-driven hydrothermal flow, preemplacement UZ ground water travel time (GWTT) is not a suitability discriminator of the hydrological performance of an extended dry repository. Moreover, conditions that are conducive to deep nonequilibrium fracture flow in the UZ also benefit rapid shedding of condensate away from the boiling zone, thereby promoting effective rock dry-out. Therefore, fast GWTTs in the UZ would be indicative of a site that is well suited for an extended dry repository concept. On the other hand, it is possible (although unlikely) that fractures in the UZ are either too sparse or too poorly connected to promote either deep fracture flow (from meteoric sources) or large-scale dry-out. The absence of large-scale dry-out is not indicative of unsuitable conditions because the same conditions also prevent deep fracture flow from meteoric sources. Therefore, for an extended dry repository concept, the site could be suitable with either fast or slow GGWT in the UZ.

#### Los Alamos

Ines Triay and staff completed batch and column experiments using crushed tuff to evaluate neptunium (Np) sorption onto Yucca Mountain tuffs. Both sets of experiments yielded similar sorption coefficients, which indicates a sorption mechanism that is linear,

reversible, and instantaneous. Based on these results, we now believe that Np retardation can be modeled using a sorption coefficient and folded into the performance assessment process. Two papers on this subject were completed and submitted to YMPO for approval. The next phase of this work will involve the use of columns of solid tuff to evaluate Np sorption.

Laboratory measurements of the paleomagnetic data for the lava flow units of the Lathrop Wells center have been completed. These data are nondiscriminatory with respect to monogenetic or polycyclic eruptive models. The trenches dug at Lathrop Wells center are being infilled this week, with the exception of the north part of Trench LW-1, which will be fenced and kept open for stratigraphic studies.

The staff completed determining the tracer requirements for construction-related water and compressed air usage in the ESF. These requirements will be used to facilitate the design and procurement of tracer systems.

#### Sandia National Laboratories

Laboratory thermal testing has revealed a potentially-important mineral phase transition that impacts thermal expansion behavior and that may also change specific heat. Thermal expansion tests run at a heating rate of 1/4 degrees Celsius (C) per minute yielded alpha-to-beta silica polymorph phase transitions at 165 degrees C and 250 degrees C. Follow-on tests will examine higher heating rates (1 degree C per minute) to examine whether or not phase changes occur at consistent temperatures.

Planning for rock mechanics testing for samples from the NRG-6 borehole included meetings with the USGS and CRWMS M&O. Discussions defining sample selection and handling, and testing scope and schedule are ongoing.

During the periodic review of the total-system assessment, the staff reported the completion of two tasks: the provision of permeability data to the SZ modeling and the construction of a computer mesh for calculations with the composite-porosity model. Action items were assigned in order to solve technical and procedural problems in the use of the data base that supports the assessment.

#### USGS

The U.S. Bureau of Reclamation completed four traceline surveys (one horizontal and three vertical surveys) in the ESF North Ramp Portal cut in preparation for geologic mapping. Photogrammetry targets were placed on the exposed rock and overlapping stereophotos were taken. Mapping of the first round was completed.

The USGS staff attended and presented papers at Workshop VI on Flow and Transport through Unsaturated Fractured Rocks as Related to High-Level Radioactive Waste Disposal sponsored by NRC, CNWRA, and the University of Arizona.

Runoff and streamflow occurred during the period January 16-19, 1993. Streamflow occurred in Fortymile Wash from above Pah Canyon to approximately 2,000 feet upstream from the paved road crossing near Well J-13. Water pulse moving through the UZ was observed in Wells UE-29 UZN-91 and UE-25 UZN-92. Water level rises in the SZ were observed in Wells UE-29 a1, UE-29 a2, and UE-29 UZN-91.

#### IV. 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 Kevin Rohrer at (702) 794-7769, Public Update Meetings are coordinated by Joanna Magruder at (702) 794-7056, and tours are coordinated by Carleén Hill at (702) 794-7375 or Bradley Bush at (702) 794-5347.

| <u>Date</u>  | <u>Event</u>                                   | <u>Location</u>    | <u>YMPO Contact</u> |
|--|--|--------------------|---------------------|
| <u>A. DOE/HQ Meetings</u>                                    |  |                    |                     |
| Wednesday-<br>Thursday,<br>February 10-11                    | First OCRWM<br>Quarterly Progress<br>Review    | Las Vegas,<br>NV   | C. Gertz            |
| <u>B. CRWMS M&amp;O/DOE Meetings</u>                         |  |                    |                     |
| Tuesday,<br>February 2                                       | YMPO Monthly<br>Management Meeting             | Las Vegas,<br>NV   | C. Gertz            |
| <u>C. Internal and DOE/Nevada Field Office (NV) Meetings</u> |  |                    |                     |
| Wednesday,<br>February 3                                     | State of the<br>Project                        | Los Alamos,<br>NM  | C. Gertz            |
| Thursday,<br>February 4                                      | State of the<br>Project                        | Albuquerque,<br>NM | C. Gertz            |
| Wednesday,<br>February 17                                    | DOE/NV Monthly<br>Program Review               | Las Vegas,<br>NV   | C. Gertz            |
| <u>D. NRC Interactions</u>                                   |  |                    |                     |
| Thursday-<br>Friday,<br>March 25-26<br>Tentative             | NRC Site Visit (P)                             | Las Vegas,<br>NV   | T. Bjerstedt        |
| Monday,<br>May 3   | Management Meeting<br>on Topical Report<br>(P) | Las Vegas,<br>NV   | T. Bjerstedt        |

D. NRC Interactions (Continued)

| <u>Date</u>           | <u>Event</u>  | <u>Location</u>      | <u>YMPO Contact</u> |
|-----------------------|---|----------------------|---------------------|
| Monday,<br>May 17     | Technical Exchange -<br>Program Planning and<br>Integration (P)   | Video-<br>Conference | T. Bjerstedt        |
| Tuesday,<br>May 18    | Technical Exchange -<br>OCRWM Technical<br>Baseline Documents (P) | Video-<br>Conference | T. Bjerstedt        |
| Monday,<br>June 7     | NRC Management Meeting<br>for Interactions<br>Scheduling          | Las Vegas,<br>NV     | T. Bjerstedt        |
| Tuesday,<br>June 8    | Technical Exchange -<br>Geophysics<br>Integration (P)             | Las Vegas,<br>NV     | T. Bjerstedt        |
| Wednesday,<br>June 9  | Technical Exchange -<br>Volcanism (P)                             | Las Vegas,<br>NV     | T. Bjerstedt        |
| Wednesday,<br>July 28 | Technical Exchange -<br>ESF Title II Design (P)                   | TBD                  | T. Bjerstedt        |

E. Nuclear Waste Technical Review Board (NWTRB) Interactions

|                                      |                                 |                  |           |
|--------------------------------------|---------------------------------|------------------|-----------|
| Tuesday-<br>Friday,<br>April 20-23   | NWTRB Full Board<br>Meeting (P) | Reno,<br>NV      | J. Cooper |
| Tuesday-<br>Saturday,<br>June 1-12   | NWTRB International<br>Trip     | TBD              | J. Cooper |
| Monday-<br>Thursday,<br>July 12-15   | NWTRB Full Board<br>Meeting (P) | Denver,<br>CO    | J. Cooper |
| Tuesday-<br>Friday,<br>October 19-22 | NWTRB Full Board<br>Meeting (P) | Las Vegas,<br>NV | J. Cooper |

F. ACNW Interactions

|   |                          |                 |        |
|---|--------------------------|-----------------|--------|
| Wednesday-<br>Thursday,<br>February 24-25 | ACNW 51st Meeting<br>(P) | Bethesda,<br>MD | A. Gil |
| Wednesday-<br>Thursday,<br>March 24-25    | ACNW 52nd Meeting<br>(P) | TBD             | A. Gil |

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| <u>Date</u>                                | <u>Event</u>             | <u>Location</u> | <u>YMPO Contact</u> |
|--|--------------------------|-----------------|---------------------|
| F. <u>ACNW Interactions</u> (Continued)    |                          |                 |                     |
| Wednesday-<br>Thursday,<br>April 28-29     | ACNW 53rd Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>May 19-20       | ACNW 54th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>June 23-24      | ACNW 55th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>July 21-22      | ACNW 56th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>August 25-26    | ACNW 57th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>September 22-23 | ACNW 58th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>October 27-28   | ACNW 59th Meeting<br>(P) | TBD             | A. Gil              |
| Monday-<br>Tuesday,<br>November 22-23      | ACNW 60th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>December 15-16  | ACNW 61st Meeting<br>(P) | TBD             | A. Gil              |

| <u>Date</u>                             | <u>Event</u>              | <u>Location</u>  | <u>Speaker</u> |
|---|---------------------------|------------------|----------------|
| G. <u>State and Public Interactions</u> |                           |                  |                |
| Monday,<br>February 1                   | Orr Junior High<br>School | Las Vegas,<br>NV | A. Colarusso   |
| Tuesday,<br>February 2                  | Huffaker School           | Reno,<br>NV      | J. Blink       |
| Wednesday,<br>February 3                | Foreign Press<br>Center   | Las Vegas,<br>NV | A. Robison     |

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| <u>Date</u>   | <u>Event</u>                                    | <u>Location</u>        | <u>Speaker</u> |
|---|---|------------------------|----------------|
| G. <u>State and Public Interactions</u> (Continued) |   |                        |                |
| Wednesday,<br>February 3                            | Brownies Troop<br>562                           | Las Vegas,<br>NV       | J. Hartley     |
| Wednesday-<br>Thursday,<br>February 3-4             | Bijou Elementary<br>School                      | Lake Tahoe,<br>NV      | J. Blink       |
| Thursday,<br>February 4                             | Scottish Rite<br>Masons                         | Las Vegas,<br>NV       | P. Standish    |
| Saturday,<br>February 6                             | Girl Scouts<br>Geology Workshop                 | Las Vegas,<br>NV       | E. Harle       |
| Monday,<br>February 8                               | Las Vegas<br>Gem Club                           | Las Vegas,<br>NV       | R. Arnold      |
| Wednesday,<br>February 10                           | Martin Luther<br>King, Jr.<br>Elementary School | Las Vegas,<br>NV       | R. Arnold      |
| Thursday,<br>February 11                            | Robert E. Lake<br>Elementary School             | Las Vegas,<br>NV       | R. Arnold      |
| Thursday,<br>February 11                            | Chemehuevi<br>District Round<br>Table           | Las Vegas,<br>NV       | R. Arnold      |
| Friday,<br>February 12                              | American Nuclear<br>Energy Council              | West Palm<br>Beach, FL | A. Robison     |
| Tuesday,<br>February 16                             | Construction<br>Specification<br>Institute      | Las Vegas,<br>NV       | G. Fasano      |
| Wednesday,<br>February 17                           | Boulder City<br>Rotary Club                     | Boulder<br>City, NV    | C. Gertz       |
| Thursday,<br>February 18                            | Teamsters Local 14                              | Las Vegas,<br>NV       | K. Beall       |
| Thursday,<br>February 18                            | Galena High<br>School                           | Reno,<br>NV            | A. Gil         |
| Friday,<br>February 19                              | McQueen High<br>School                          | Reno,<br>NV            | A. Gil         |
| Saturday,<br>February 20                            | Boy Scouts<br>Geology Merit<br>Badge Workshop   | Las Vegas,<br>NV       | E. Harle       |

| <u>Date</u>   | <u>Event</u>  | <u>Location</u>  | <u>Speaker</u>        |
|---|---|------------------|-----------------------|
| G. <u>State and Public Interactions</u> (Continued) |   |                  |                       |
| Tuesday,<br>February 23                             | Iowa State<br>University  | Ames,<br>IA      | C. Gertz              |
| Friday-<br>Sunday,<br>February 26-28                | DOE Regional<br>Science Bowl,<br>University of<br>Nevada, Las Vegas | Las Vegas,<br>NV | E. Harle              |
| Monday-<br>Saturday,<br>March 1-13                  | Jason Telepresence<br>Project, Cheyenne<br>High School              | Las Vegas,<br>NV | E. Harle              |
| Tuesday,<br>March 2                                 | Waste Management<br>'93   | Tucson,<br>AZ    | C. Gertz<br>B. Reilly |
| Saturday,<br>March 6                                | Cadet Girl Scouts<br>Geology Workshop                               | Las Vegas,<br>NV | E. Harle              |
| Thursday,<br>March 11                               | American Nuclear<br>Society (ANS)                                   | Denver,<br>CO    | C. Gertz              |
| Saturday,<br>March 13                               | Cadet Girl Scouts<br>Field Trip                                     | Las Vegas,<br>NV | E. Harle              |
| Wednesday,<br>March 17                              | Nevada<br>Environmental<br>Health<br>Association                    | Las Vegas,<br>NV | G. Fasano             |
| Thursday,<br>March 18                               | Orr Junior High<br>School   | Las Vegas,<br>NV | J. Cooper             |
| Tuesday-<br>Wednesday,<br>March 23-24               | Henderson<br>Community<br>College                                   | Las Vegas,<br>NV | M. Powell             |
| Friday,<br>March 26                                 | Reserve Officers<br>Association                                     | Las Vegas,<br>NV | G. Fasano             |
| Tuesday,<br>April 6                                 | Orr Junior High<br>School   | Las Vegas,<br>NV | W. Wilson             |
| Saturday,<br>April 10                               | Girl Scouts<br>Geology Workshop                                     | Las Vegas,<br>NV | E. Harle              |
| Thursday,<br>April 15                               | ANS/American<br>Society of<br>Mechanical<br>Engineers               | New York,<br>NY  | C. Gertz              |

| <u>Date</u>   | <u>Event</u>   | <u>Location</u>  | <u>Speaker</u> |
|---|--|------------------|----------------|
| G. <u>State and Public Interactions</u> (Continued) |  |                  |                |
| Saturday,<br>April 24                               | Boy Scouts<br>Atomic Energy<br>Merit Badge<br>Workshop         | Las Vegas,<br>NV | E. Harle       |
| Tuesday,<br>May 4                                   | Underground<br>Structures,<br>Colorado School<br>of Mines      | Golden,<br>CO    | C. Gertz       |
| Saturday,<br>May 8                                  | Boy Scouts Atomic<br>Energy Merit Badge<br>Workshop            | Las Vegas,<br>NV | E. Harle       |
| Monday,<br>June 14                                  | Rapid Excavation<br>& Tunneling<br>Conference                  | Boston,<br>MA    | C. Gertz       |
| Tuesday-<br>Friday,<br>August 17-20                 | Second<br>International<br>Mixed Waste<br>Symposium            | Baltimore,<br>MD | C. Gertz       |
| Monday-<br>Wednesday,<br>September 27-29            | Industrial &<br>Engineering<br>Chemistry Division<br>Symposium | Atlanta,<br>GA   | C. Gertz       |

| <u>Date</u>                                     | <u>Event</u>   | <u>Location</u>  |
|---|--|------------------|
| H. <u>Exhibits Scheduled</u>                    |  |                  |
| Friday-<br>Saturday,<br>February 5-6            | Southern Nevada<br>Council for the<br>Social Studies | Las Vegas,<br>NV |
| Monday-<br>Thursday,<br>February 15-18          | Society for Mining<br>Metallurgy<br>and              | Reno,<br>NV      |
| Saturday,<br>February 20                        | Public Open House (P)                                | Las Vegas,<br>NV |
| Sunday-<br>Thursday,<br>February 28-<br>March 4 | Waste Management<br>Symposia                         | Tucson,<br>AZ    |

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| <u>Date</u>                              | <u>Event</u>                                     | <u>Location</u>  |
|--|--|------------------|
| H. <u>Exhibits Scheduled</u> (Continued) |  |                  |
| Saturday,<br>March 27                    | Public Open House (P)                            | Las Vegas,<br>NV |
| Saturday,<br>April 24                    | Public Open House (P)                            | Las Vegas,<br>NV |
| Wednesday,<br>May 19                     | Public Open House (P)                            | Las Vegas,<br>NV |
| <u>Date</u>                              | <u>Event</u>                                     | <u>Escorts</u>   |
| I. <u>Tours Scheduled</u>                |  |                  |
| Wednesday,<br>February 3                 | Green Valley<br>High School                      | TBD              |
| Wednesday,<br>February 3                 | Foreign Press<br>Center                          | S. Patrick       |
| Monday,<br>February 8                    | New Zealand<br>Geothermal Group                  | B. Levich        |
| Tuesday,<br>February 9                   | Western Governors<br>Association                 | TBD              |
| Wednesday,<br>February 10                | Swedish Embassy                                  | TBD              |
| Thursday,<br>February 11                 | Booker Sixth Grade<br>Center                     | TBD              |
| Tuesday,<br>February 16                  | State Legislature Natural<br>Resources Committee | TBD              |
| Thursday,<br>February 18                 | University of<br>Minnesota                       | M. Voegele       |
| Saturday,<br>February 20                 | Public Open House<br>(P)                         | Various Escorts  |
| Wednesday,<br>February 24                | Tonopah Middle<br>School                         | TBD              |
| Thursday,<br>February 25                 | Senior Tripsters                                 | TBD              |
| Thursday,<br>March 4                     | National Conference of<br>State Legislatures     | TBD              |

| <u>Date</u>                           | <u>Event</u>                             | <u>Escorts</u>     |
|---------------------------------------|--|--------------------|
| I. <u>Tours Scheduled</u> (Continued) |  |                    |
| Friday,<br>March 5                    | Waste Management '93                     | TBD                |
| Thursday,<br>March 11                 | Meadows School                           | TBD                |
| Thursday,<br>March 18                 | Gabs School                              | TBD                |
| Wednesday,<br>March 24                | Thurman White<br>Middle School           | TBD                |
| Saturday,<br>March 27                 | Public Open House (P)                    | Various<br>Escorts |
| Monday,<br>March 29                   | Eureka County                            | TBD                |
| Thursday,<br>April 1                  | Orr Junior High<br>School                | TBD                |
| Monday,<br>April 19                   | Hydrology Field Trip                     | A. Flint           |
| Tuesday,<br>April 20                  | Round Mountain<br>High School            | TBD                |
| Saturday,<br>April 24                 | Public Open House (P)                    | Various<br>Escorts |
| Monday,<br>April 26                   | High-Level Waste<br>Conference           | TBD                |
| Thursday,<br>May 6                    | Pahrump Junior High                      | TBD                |
| Wednesday,<br>May 19                  | Public Open House (P)                    | Various<br>Escorts |
| Monday,<br>June 21                    | Girl Scouts Wider<br>Opportunity Program | TBD                |
| Tuesday,<br>August 17                 | Senior Tripsters                         | TBD                |

  
 for Carl P. Gertz  
 Project Manager



WBS 1.2.9.2  
Department of Energy QA: N/A  
Yucca Mountain Site Characterization  
Project Office  
P. O. Box 98608  
Las Vegas, NV 89193-8608

**JAN 28 1993**

Lake H. Barrett, Acting Director, Civilian Radioactive Waste Management,  
HQ (RW-1) FORS

OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING  
JANUARY 22, 1993

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

A. Site Characterization Planning

Field Operations

The Site Manager and Field Operations Center (FOC) staff participated in and provided logistical support for four major tours this reporting period. On January 16, 1993, there were 235 visitors on the general public tour despite the inclement weather. The next public open house and site tour is scheduled for February 20, 1993.

Regarding drilling activities at NRG-2 (30-degree angle hole) with the CME-850 drill rig, Reynolds Electrical & Engineering Co., Inc. (REECo), recovered the crown of a drill bit. As of January 19, 1993, the core hole depth was 104.67 feet with the Odex casing at 84.39 feet.

Drilling continues with Joy 1 rig at NRG-6. As of January 19, 1993, REECo had cored to a depth of 351.10 feet with the six-inch Odex casing down to 311.63 feet.

On Job Package (JP) 92-3, UZ-16, drilling continues with the LM-300 drill rig. The borehole has been cored to a depth of 1257.50 feet with the 12 1/2-inch casing at 1238.98 feet.

Regarding JP 92-20, North Exploratory Studies Facility (ESF) Portal Pad and Access Road, REECo continues with the excavation of the north drainage ditch and the box cut for the pad. Hauling of topsoil to the storage area has been completed.

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Sample Management Facility

Drilling operations were supported for UE25 UZ-16, USW NRG-6, and UE25 NRG-2. Processing of core and cuttings from UE25 UZ-16, USW NRG-6, and UE25 NRG-2 continued. Two boxes of core specimens were shipped to Los Alamos National Laboratory (Los Alamos). Thirty-one core specimens were removed from USW UZN-55 for the U.S. Geological Survey (USGS). The Sample Overview Committee meeting was supported on January 19, 1993.

Regulatory InteractionsIssue Resolution

The Erosion Topical Report is currently being revised to incorporate comments resulting from the review.

An Issue Resolution Steering Group meeting was held on January 15, 1993, in Las Vegas, Nevada. Topics of discussion included updates on the status of the Volcanism and Seismic Hazards issues. Also, the status of the Erosion Topical Report revision was discussed. Budgets for all working groups were summarized.

Advisory Committee on Nuclear Waste (ACNW) Interactions

The ACNW's 51st Meeting will be held January 27-28, 1993, in Bethesda, Maryland. Discussions of natural analogues and the effect of the new energy bill on the high-level waste program are included on the agenda.

ESF Task Force Activities

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

|   |                  |
|---|------------------|
| Receive Tunnel Boring Machine<br>(TBM) Vendor Proposals | February 9, 1993 |
| Award Subcontract for Underground<br>Construction       | April 1993       |
| Award TBM Contract                                      | April 1993       |
| Start Excavating TBM Launch Chamber                     | April 2, 1993    |

Site Characterization Plan (SCP) Study Plan (SP) Status

The Yucca Mountain Site Characterization Project Office (YMPO) approved the following this week: SP 8.3.1.2.3.3, "Saturated Zone Hydrologic System Synthesis and Modeling," and one minor revision to SP 8.3.1.4.2.1, Revision 1, "Characterization of the Vertical and Lateral Distribution of Stratigraphic Units Within the Site Area."

JAN 28 1993

## STUDY PLAN BREAKDOWN

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|   |    |
|---|----|
| In Screening Review .....   | 0  |
| In YMPO and U.S. Department of Energy<br>(DOE)/Headquarters (HQ) Review ..... | 6  |
| Awaiting Comment Resolution .....   | 9  |
| Awaiting Author Revision .....  | 3  |
| In YMPO/HQ Verification Audit .....   | 6  |
| Preparing to Submit or Awaiting YMPO Approval .....                           | 2  |
| Awaiting Submission to the U.S. Nuclear<br>Regulatory Commission (NRC) .....  | 1  |
| NRC Phase 1 Review .....  | 22 |
| NRC Acceptance .....  | 30 |
| Total .....   | 79 |

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## SCP/SP Status:

|   |     |
|---|-----|
| Total SPs Assigned to Cover 106 Studies ..... | 104 |
| SPs Not Yet Submitted for Review .....        | 36  |
| SPs Submitted for Initial Review .....        | 68  |
| Revised SPs Submitted for Review .....        | 5   |
| Revised ESF SPs Submitted for Review .....    | 6   |
| Total SPs Submitted for Review .....          | 79  |

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## State of Nevada Comments Status:

|  |    |
|--|----|
| Received Comments from the State of Nevada .....   | 13 |
| Responses Transmitted to the State of Nevada ..... | 10 |

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## NRC Comments Status:

|  |    |
|--|----|
| Received Comments from NRC .....               | 17 |
| Responses Transmitted from OGD to DOE/HQ ..... | 16 |

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## Critical ESF SP Status:

SP 8.3.1.2.2.4, Revision 1, "Characterization of the Yucca Mountain Unsaturated Zone ESF Study," should be transmitted to the NRC this week.

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B. Project Planning and Control

The project-level data base of December 1992 cost and schedule data was rolled; project cost performance reports and status reports were produced for Project Manager Carl Gertz, Division Directors, project work breakdown structure (WBS) element managers, and Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) functional managers. Analyses of December 1992 cost and schedule status data were also prepared for the Division Directors and WBS element managers.

C. Quality Assurance Implementation

Determination of Importance and Grading Enhancement

Management Control (MC) List and Procedure Development

Draft B of Administrative Procedure (AP) 5.40 (requirements extraction and MC List) has been finalized and a comment resolution meeting has been scheduled for January 27, 1993.

Implementation

The Early Classification of Natural Barriers workshop was conducted January 19-21, 1993, and involved technical experts from various YMP organizations. A classification recommendation will be forwarded to YMPO by January 29, 1993.

A draft of the phase-out approach for cancellation of AP 6.17Q, Classification of Items Important to Safety and Waste Isolation, is being reviewed by the Assessment Team and YMP management.

D. Public Outreach and Institutional Activities

April Gil, YMPO, and Effie Harle, Technical and Management Support Services (T&MSS), presented a two-hour workshop for Girl Scouts Troop 319 at the Las Vegas Yucca Mountain Information Office (YMIO) on January 16, 1993. The six Girl Scouts and two leaders who had attended an earlier Girl Scouts Geology Workshop, received more information about fossils, which they had requested.

The Twenty-third Public Open House tour of Yucca Mountain, Nevada, was conducted on January 16, 1993, for approximately 235 people. Tour participants visited the Las Vegas YMIO, the FOC, two laboratories, and the LM-300 drill rig.

Gregory Fasano, T&MSS, gave a general overview presentation to the Veterans of Foreign Wars on January 16, 1993, in Tonopah, Nevada. Joseph Mills, Nevada Nuclear Waste Study Committee (NNWSC), also spoke to the Veterans. Approximately 100 people were in attendance.

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Tours to Yucca Mountain were conducted on January 19, 1993, for a reporter from the Sacramento Bee; on January 20, 1993, for 90 guests of the Tonopah Middle School; on January 21, 1993, for five guests from Savannah River; and on January 22, 1993, for 12 guests from the NNWSC Advisory Board. Pretour briefings were provided by Carl Gertz for the Sacramento Bee reporter, and by A. C. Robison, YMPO, for the NNWSC Advisory Board.

The Institutional and External Affairs (IEA) staff met on January 19, 1993, at Cheyenne High School in Las Vegas with representatives from DOE Nevada Field Office (DOE/NV); Raytheon Services Nevada; EG&G Energy Measurements, Inc.; Clark County School District; Computer Science Corporation; and REECO; to further plan for the Jason telepresence broadcast.

Todd Kaish, CRWMS M&O, gave a general overview presentation to the Southeast Valley Exchange Club on January 19, 1993, in Henderson, Nevada. Approximately 12 people attended the presentation.

Richard Arnold, a consultant, gave a presentation on Native American culture to approximately 128 third grade students at Parson Elementary School in Las Vegas on January 20, 1993.

The IEA staff attended meetings in Carson City, Nevada, January 18-19, 1993, and provided requested information on YMP to government officials and other leaders.

On January 21, 1993, A. C. Robison gave general project overviews to members of the Breakfast Lion's Club and the North Las Vegas Chamber of Commerce in Las Vegas. Approximately 58 people attended these presentations.

James Agnew, CRWMS M&O, provided a Career Day presentation on geologists to first through fifth grade students at Bartlett Elementary School on January 21, 1993, in Las Vegas. Approximately 25 students attended the presentation.

Tom Pysto, T&MSS, gave an educational presentation on wildlife and the environment to approximately 30 fourth grade students at Eisenberg Elementary School on January 22, 1993.

Carl Gertz, YMPO; Jean Younker, CRWMS M&O; and Michael Voegele, T&MSS; provided a general overview and addressed scientific issues at the West Las Vegas Community meeting on January 22, 1993.

## II. ANALYSIS & VERIFICATION DIVISION

The staff participated in the comment resolution teleconference on January 21, 1993, regarding SP 8.3.1.2.2.2, Revision 1, "Waste Movement Test."

JAN 28 1993

Review of the Center for Nuclear Waste Regulatory Analysis report on Regulatory Operational Criteria Analysis was initiated. Comments are to be completed by February 1, 1993.

### III. GENERAL INFORMATION ITEMS

#### Lawrence Livermore National Laboratory

Hydrothermal calculations of the unsaturated and saturated zones (UZ and SZ) indicate that the bulk permeability threshold for significant UZ dry-out (approximately  $10^{-14}m^2$ ) is similar to that for significant buoyancy-driven flow in the SZ ( $10^{-16}$  to  $10^{-13}m^2$ ). It is possible that UZ heater tests could determine whether SZ fracture properties are conducive to SZ buoyancy flow.

#### Los Alamos

June Fabryka-Martin, Los Alamos, attended a USGS-sponsored UZ modeling meeting and presented the latest chlorine-36 results from studies performed from samples taken from shallow neutron boreholes.

#### Sandia National Laboratories

The draft implementation matrix for the Quality Assurance Requirements and Description (DOE\RW-0333P) was completed and submitted to YMPO on January 15, 1993.

Two additional papers for the International High-Level Radioactive Waste Management Conference have been completed. One paper discusses a newly-developed modeling technique for simulating finger flow in unsaturated fractures and the second discusses experimental techniques that are being developed for imaging fracture-matrix interactions in volcanic tuff using X-ray techniques. Purchase of an industrial X-ray source has been completed. This source will be used to carry out extensive testing of a variety of fundamental unsaturated flow processes.

The staff completed and forwarded to YMPO a proposed change to Appendix I of the ESF Design Requirements. This change incorporates the results of ESF Analysis 13, "Underground Water Movement from Surficial Water Used Outside the Perimeter Drift Boundary."

#### USGS

The staff demonstrated the LYNX Geoscience Modeling System in a two-day presentation in Denver, Colorado. This three-dimensional modeling software develops multiple stacked cross sections using surface and subsurface data from a USGS constructed digitized data base. Representatives from DOE, CRWMS M&O, EG&G, and USGS attended the presentation and established the initial date of April 1993 for a developed modeling product. The progress on this activity more than met DOE's expectations.

The staff completed 1:6000-scale cross sections of the North Portal, South Portal, and main Topopah-level drift beneath Yucca Mountain. Review of the sections has been completed and changes mandated by quality checks are being made. These cross sections, which describe lithologically significant subdivisions of the Topopah Springs Formation and mapped subdivisions of the Tiva Canyon Formation, will be incorporated into the digitized data base for three-dimensional modeling.

Five V-notch weirs were installed to monitor streamflow from micro watersheds as part of the arid-zone geochemistry project at Organ Pipe National Monument. Preparations were made for installing additional meteorological equipment at the site.

#### IV. 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 Kevin Rohrer at (702) 794-7769, Public Update Meetings are coordinated by Joanna Magruder at (702) 794-7056, and tours are coordinated by Carleen Hill at (702) 794-7375 or Bradley Bush at (702) 794-5347.

| <u>Date</u>                               | <u>Event</u>  | <u>Location</u>    | <u>YMPO Contact</u> |
|---|---|--------------------|---------------------|
| <u>A. DOE/HQ Meetings</u>                 |   |                    |                     |
| Wednesday-<br>Thursday,<br>February 10-11 | First Office of<br>Civilian Radioactive<br>Waste Management<br>(OCRWM) Quarterly<br>Progress Review | Las Vegas,<br>NV   | C. Gertz            |
| <u>B. CRWMS M&amp;O/DOE Meetings</u>      |   |                    |                     |
| Wednesday,<br>January 27                  | CRWMS M&O Program<br>Management Review  | Vienna,<br>VA      | C. Gertz            |
| Tuesday,<br>February 2                    | YMPO Monthly<br>Management Meeting  | Las Vegas,<br>NV   | C. Gertz            |
| <u>C. Internal and DOE/NV Meetings</u>    |   |                    |                     |
| Wednesday,<br>February 3                  | State of the<br>Project   | Los Alamos,<br>NM  | C. Gertz            |
| Thursday,<br>February 4                   | State of the<br>Project   | Albuquerque,<br>NM | C. Gertz            |
| Wednesday,<br>February 17                 | DOE/NV Monthly<br>Program Review  | Las Vegas,<br>NV   | C. Gertz            |

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| <u>Date</u>   | <u>Event</u>  | <u>Location</u>      | <u>YMPO Contact</u> |
|---|---|----------------------|---------------------|
| <u>D. NRC Interactions</u>  |   |                      |                     |
| March TBD   | NRC Site Visit (P)  | Las Vegas,<br>NV     | T. Bjerstedt        |
| Monday,<br>May 3  | Management Meeting<br>on Topical Report (P)                       | Las Vegas,<br>NV     | T. Bjerstedt        |
| Monday,<br>May 17   | Technical Exchange -<br>Program Planning and<br>Integration (P)   | Video-<br>Conference | T. Bjerstedt        |
| Tuesday,<br>May 18  | Technical Exchange -<br>OCRWM Technical<br>Baseline Documents (P) | Video-<br>Conference | T. Bjerstedt        |
| Monday,<br>June 7   | NRC Management Meeting<br>for Interactions<br>Scheduling          | Las Vegas,<br>NV     | T. Bjerstedt        |
| Tuesday,<br>June 8  | Technical Exchange -<br>Geophysics Integration<br>(P)             | Las Vegas,<br>NV     | T. Bjerstedt        |
| Wednesday,<br>June 9  | Technical Exchange -<br>Volcanism (P)                             | Las Vegas,<br>NV     | T. Bjerstedt        |
| Wednesday,<br>July 28   | Technical Exchange -<br>ESF Title II Design (P)                   | TBD                  | T. Bjerstedt        |
| <u>E. Nuclear Waste Technical Review Board (NWTRB) Interactions</u> |   |                      |                     |
| Tuesday-<br>Friday,<br>April 20-23                                  | NWTRB Full Board<br>Meeting (P)                                   | Reno,<br>NV          | J. Cooper           |
| Tuesday-<br>Saturday,<br>June 1-12                                  | NWTRB International<br>Trip                                       | TBD                  | J. Cooper           |
| Monday-<br>Thursday,<br>July 12-15                                  | NWTRB Full Board<br>Meeting (P)                                   | Denver,<br>CO        | J. Cooper           |
| Tuesday-<br>Friday,<br>October 19-22                                | NWTRB Full Board<br>Meeting (P)                                   | Las Vegas,<br>NV     | J. Cooper           |

| <u>Date</u>                                | <u>Event</u>             | <u>Location</u> | <u>YMPO Contact</u> |
|--|--------------------------|-----------------|---------------------|
| F. <u>ACNW Interactions</u>                |                          |                 |                     |
| Wednesday-<br>Thursday,<br>January 27-28   | ACNW 50th Meeting<br>(P) | Bethesda,<br>MD | A. Gil              |
| Wednesday-<br>Thursday,<br>February 24-25  | ACNW 51st Meeting<br>(P) | Bethesda,<br>MD | A. Gil              |
| Wednesday-<br>Thursday,<br>March 24-25     | ACNW 52nd Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>April 28-29     | ACNW 53rd Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>May 19-20       | ACNW 54th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>June 23-24      | ACNW 55th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>July 21-22      | ACNW 56th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>August 25-26    | ACNW 57th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>September 22-23 | ACNW 58th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>October 27-28   | ACNW 59th Meeting<br>(P) | TBD             | A. Gil              |
| Monday-<br>Tuesday,<br>November 22-23      | ACNW 60th Meeting<br>(P) | TBD             | A. Gil              |
| Wednesday-<br>Thursday,<br>December 15-16  | ACNW 61st Meeting<br>(P) | TBD             | A. Gil              |

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| <u>Date</u>                             | <u>Event</u>                                    | <u>Location</u>   | <u>Speaker</u> |
|---|---|-------------------|----------------|
| G. <u>State and Public Interactions</u> |   |                   |                |
| Thursday,<br>January 28                 | Cub Scouts<br>Pack 223                          | Las Vegas,<br>NV  | R. Arnold      |
| Monday,<br>February 1                   | Foreign Press<br>Center                         | Las Vegas,<br>NV  | C. Gertz       |
| Tuesday,<br>February 2                  | Huffaker School                                 | Reno,<br>NV       | J. Blink       |
| Wednesday,<br>February 3                | Brownies Troop<br>562                           | Las Vegas,<br>NV  | J. Hartley     |
| Wednesday-<br>Thursday,<br>February 3-4 | Bijou Elementary<br>School                      | Lake Tahoe,<br>NV | J. Blink       |
| Thursday,<br>February 4                 | Scottish Rite<br>Masons                         | Las Vegas,<br>NV  | P. Standish    |
| Saturday,<br>February 6                 | Girl Scouts<br>Geology Workshop                 | Las Vegas,<br>NV  | E. Harle       |
| Monday,<br>February 8                   | Las Vegas<br>Gem Club                           | Las Vegas,<br>NV  | R. Arnold      |
| Wednesday,<br>February 10               | Martin Luther<br>King, Jr.<br>Elementary School | Las Vegas,<br>NV  | R. Arnold      |
| Thursday,<br>February 11                | Robert E. Lake<br>Elementary School             | Las Vegas,<br>NV  | R. Arnold      |
| Thursday,<br>February 11                | Chemehuevi<br>District Round<br>Table           | Las Vegas,<br>NV  | R. Arnold      |
| Tuesday,<br>February 16                 | Construction<br>Specification<br>Institute      | Las Vegas,<br>NV  | G. Fasano      |
| Wednesday,<br>February 17               | Boulder City<br>Rotary Club                     | Las Vegas,<br>NV  | C. Gertz       |
| Thursday,<br>February 18                | Galena High<br>School                           | Reno,<br>NV       | A. Gil         |

| <u>Date</u>   | <u>Event</u>  | <u>Location</u>  | <u>Speaker</u>        |
|---|---|------------------|-----------------------|
| G. <u>State and Public Interactions</u> (Continued) |   |                  |                       |
| Friday,<br>February 19                              | McQueen High<br>School  | Reno,<br>NV      | A. Gil                |
| Saturday,<br>February 20                            | Boy Scouts<br>Geology Merit<br>Badge Workshop                       | Las Vegas,<br>NV | E. Harle              |
| Tuesday,<br>February 23                             | Iowa State<br>University  | Ames,<br>IA      | C. Gertz              |
| Friday-<br>Sunday,<br>February 26-28                | DOE Regional<br>Science Bowl,<br>University of<br>Nevada, Las Vegas | Las Vegas,<br>NV | E. Harle              |
| Monday-<br>Saturday,<br>March 1-13                  | Jason Telepresence<br>Project, Cheyenne<br>High School              | Las Vegas,<br>NV | E. Harle              |
| Tuesday,<br>March 2                                 | Waste Management<br>'93   | Tucson,<br>AZ    | C. Gertz<br>B. Reilly |
| Saturday,<br>March 6                                | Cadet Girl Scouts<br>Geology Workshop                               | Las Vegas,<br>NV | E. Harle              |
| Saturday,<br>March 13                               | Cadet Girl Scouts<br>Field Trip                                     | Las Vegas,<br>NV | E. Harle              |
| Wednesday,<br>March 17                              | Nevada<br>Environmental<br>Health<br>Association                    | Las Vegas,<br>NV | G. Fasano             |
| Tuesday-<br>Wednesday,<br>March 23-24               | Henderson<br>Community NV<br>College                                | Las Vegas,<br>NV | M. Powell             |
| Saturday,<br>April 10                               | Girl Scouts<br>Geology Workshop                                     | Las Vegas,<br>NV | E. Harle              |
| Saturday,<br>April 24                               | Boy Scouts<br>Atomic Energy<br>Merit Badge<br>Workshop              | Las Vegas,<br>NV | E. Harle              |
| Tuesday,<br>May 4                                   | Underground<br>Structures,<br>Colorado School<br>of Mines           | Golden,<br>CO    | C. Gertz              |

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| <u>Date</u>   | <u>Event</u>   | <u>Location</u>  | <u>Speaker</u> |
|---|--|------------------|----------------|
| G. <u>State and Public Interactions</u> (Continued) |  |                  |                |
| Saturday,<br>May 8                                  | Boy Scouts Atomic<br>Energy Merit Badge<br>Workshop            | Las Vegas,<br>NV | E. Harle       |
| Monday,<br>June 14                                  | Rapid Excavation<br>& Tunneling<br>Conference                  | Boston,<br>MA    | C. Gertz       |
| Tuesday-<br>Friday,<br>August 17-20                 | Second<br>International<br>Mixed Waste<br>Symposium            | Baltimore,<br>MD | C. Gertz       |
| Monday-<br>Wednesday,<br>September 27-29            | Industrial &<br>Engineering<br>Chemistry Division<br>Symposium | Atlanta,<br>GA   | C. Gertz       |

| <u>Date</u>                                     | <u>Event</u>   | <u>Location</u>  |
|---|--|------------------|
| H. <u>Exhibits Scheduled</u>                    |  |                  |
| Friday-<br>Saturday,<br>February 5-6            | Southern Nevada<br>Council for the<br>Social Studies | Las Vegas,<br>NV |
| Monday-<br>Thursday,<br>February 15-18          | Society for Mining<br>and Metallurgy                 | Reno,<br>NV      |
| Saturday,<br>February 20                        | Public Open House (P)                                | Las Vegas,<br>NV |
| Sunday-<br>Thursday,<br>February 28-<br>March 4 | Waste Management<br>Symposia                         | Tucson,<br>AZ    |
| Saturday,<br>March 27                           | Public Open House (P)                                | Las Vegas,<br>NV |

| <u>Date</u>               | <u>Event</u>                     | <u>Escorts</u>  |
|---------------------------|----------------------------------|-----------------|
| I. <u>Tours Scheduled</u> |                                  |                 |
| Monday,<br>January 25     | Japan Electric Power             | P. Cloke        |
| Thursday,<br>January 28   | Joe Mackey Sixth<br>Grade Center | TBD             |
| Wednesday,<br>February 3  | Green Valley<br>High School      | TBD             |
| Wednesday,<br>February 3  | Foreign Press                    | S. Patrick      |
| Monday,<br>February 8     | New Zealand<br>Geothermal Group  | B. Levich       |
| Tuesday,<br>February 9    | Western Governors<br>Association | TBD             |
| Wednesday,<br>February 10 | Swedish Embassy                  | TBD             |
| Thursday,<br>February 11  | Booker Sixth Grade<br>Center     | TBD             |
| Thursday,<br>February 18  | University of<br>Minnesota       | M. Voegele      |
| Saturday,<br>February 20  | Public Open House<br>(P)         | Various Escorts |
| Wednesday,<br>February 24 | Tonopah Middle<br>School         | TBD             |
| Thursday,<br>February 25  | Senior Tripsters                 | TBD             |
| Friday,<br>March 5        | Waste Management '93             | TBD             |
| Thursday,<br>March 11     | Meadows School                   | TBD             |
| Thursday,<br>March 18     | Gabs School                      | TBD             |
| Wednesday,<br>March 24    | Thurman White<br>Middle School   | TBD             |

| <u>Date</u>                           | <u>Event</u>                             | <u>Escorts</u>     |
|---------------------------------------|--|--------------------|
| I. <u>Tours Scheduled</u> (Continued) |  |                    |
| Saturday,<br>March 27                 | Public Open House (P)                    | Various<br>Escorts |
| Monday,<br>March 29                   | Eureka County                            | TBD                |
| Thursday,<br>April 1                  | Orr Junior High<br>School                | TBD                |
| Monday,<br>April 19                   | Hydrology Field Trip                     | A. Flint           |
| Tuesday,<br>April 20                  | Round Mountain<br>High School            | TBD                |
| Saturday,<br>April 24                 | Public Open House (P)                    | Various<br>Escorts |
| Monday,<br>April 26                   | High-Level Waste<br>Conference           | TBD                |
| Thursday,<br>May 6                    | Pahrump Junior High                      | TBD                |
| Wednesday,<br>May 19                  | Public Open House (P)                    | Various<br>Escorts |
| Monday,<br>June 21                    | Girl Scouts Wider<br>Opportunity Program | TBD                |
| Tuesday,<br>August 17                 | Senior Tripsters                         | TBD                |

YMP:VFI-2153

  
 Carl P. Gertz  
 Project Manager