



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

Reply to:

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M E M O R A N D U M

DATE: September 15, 1989

FOR: John J. Linehan, Director, Repository Licensing and
Quality Assurance Project Directorate (HLPD), Division
of High-Level Waste Management

FROM: Paul T. Prestholt, Sr. DR - YMP *PJP*

SUBJECT: NNWSI Site Report for the month of August, 1989

I. GEOLOGY-GEOPHYSICS

A. Prototype Drilling

As reported last month, the prototype drilling program has been located at the now abandoned "Horn Silver" mine near Milford, Utah. During the month of August, hole number UZP-3A was abandoned after being drilled to a depth of 550 feet because of water in-flow (this was the second hole at this site). Hole number UZP-3B was abandoned at 535 feet because of water in-flow and hole UZP-3C was abandoned at 514 feet because of caving and the presence of sticky clay. UZP-3C was located only 75 feet from the Horn Silver shaft that is 1,300 feet deep and dry.

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PDR WASTE
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1 FULL TEXT ASCII SCAN

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WM-1,
NH03

It has been decided to find another drill site altogether. A site in Arizona, just east of Hoover Dam is being considered. This site would be in tuffs similar to those in the vicinity of Yucca Mountain.

John Peshel, HLEN, and I visited the Milford drill site on August 10 and 11. We observed the Lang Model LM-120 rig perform wireline dry coring using a standard 10 foot diamond core barrel and "blown" coring using a highly modified rock bit.

The wireline coring technique developed by the DOE and its contractors resulted in a coring rate of 9 to 10 feet per hour and recovery averages about 95%. The core was in good condition with no visually detected alteration due to excessive heat. Tests will be conducted to assure that no mineral alteration takes place during coring and to determine if there is any change in fluid content.

The good results achieved by the prototype drilling program to date must be viewed with caution since the deepest test so far is only 550 feet. The DOE personnel in charge feel that successful core recovery from depths of 1,000 feet must be achieved before they are satisfied that the dry core drilling system is fully operational.

B. GEOPHYSICS INTEGRATION WORKSHOP

On August 28-30, the Yucca Mountain Project (YMP) conducted a "Geophysics Integration Workshop". The purpose of the meeting was (from the handout) "to coordinate and integrate planned site investigations to better address the issues-resolution needs of the multiple users of many of the geophysical surveys, and to establish lines of communication, between geologists and geophysicists and in different participant organizations".

A lead scientist was designated for each major topic area. They were:

- Kenneth Fox, USGS - Tectonics
- Bruce Crowe, LANL - Volcanism
- John Czarnecki, USGS - Hydrology
- Dick Mast, USGS - Natural Resources
- Ernie Hardin, SAIC - Feasibility Testing

On day one, the group left Las Vegas and traveled to the Lathrop Wells cone and the Point of Rocks detachment fault. Discussed was the problem of defining igneous features at depth, such as:

- problems with defining buried basaltic flows, dikes and sills
- of obtaining volume estimates of buried basalts

Also, the problem of defining structures that may control basalt penetration to the surface and the use of geophysics to define crustal magma chambers and thermal anomalies.

On the topic of tectonics, discussions continued on the problem of integrating regional seismic (reflection) data with gravity, magnetic and geoelectric data, discussions concerning the multiple uses of data collected for regional tectonics studies, remote sensing techniques and studies of faults.

The second day started with a trip to drill hole G-2 and an overlook of Yucca Wash. Discussions centered on those geophysical techniques that might aid hydrologists in resolving the problem of the large hydraulic gradient just north of the proposed repository.

Also discussed was the possibility of extending the regional seismic lines across Yucca Mountain.

On the subject of mineral resources, discussions were held concerning the application of geophysical surveys to identify structures, lithologies, alteration, some minerals and elements, density and other anomalies pertaining to oil and minerals exploration.

Concerning feasibility testing, topics discussed included:

- borehole techniques such as tomography and VSP;
- radiometric and remote sensing studies;
- shallow seismic characterization of depth-to-bedrock, fracturing and faults;
- magnetic and paleomagnetic studies.

A report is under preparation detailing the results of this meeting.

This was a very positive meeting. The scientists working on the various problems were specific in discussing their needs and in presenting their perception of how the various geophysical techniques might help in their investigations. The non-geophysicists displayed a good working understanding of the techniques most used in support of their work and showed a real interest in developing an integrated geophysical program for site characterization.

The geophysical "White Paper" that has been edited by Dr. Ernest Hardin, SAIC, is in final review and should be released in September.

C. Coyote Wash Resistivity Anomaly TAR

The Technical Assessment Review (TAR) of the resistivity anomaly reported by Smith and Ross (USGS OFR 82-182)

is completed and report is in final review. The report should be released in September.

II. HYDROLOGY

The Geophysics Integration Workshop discussed in Section I, Geology-Geophysics, covered the geophysical techniques that might aid the YMP hydrologists to characterize the large hydraulic gradient just north of the proposed repository. Discussed was the possibility of developing a 3-D lithologic model using a combination of geophysical techniques including gravity and magnetic surveys, magnetotelluric soundings and reflection and refraction seismic surveys.

It is hoped that additional boreholes combined with an integrated geophysical exploration program will provide the data needed to develop a defensible model of this feature.

III. GEOCHEMISTRY

Enclosed is a copy of the July Los Alamos Project Status Report.

IV. REPOSITORY ENGINEERING-ESF (UNDERGROUND)

This office has received a description and schedule for the review of the design packages described in the July, 1989 monthly report. Fenix and Scisson (F&S) has identified 16 design packages (drawings and specifications) for the Exploratory Shaft Facility (ESF). The review schedule for the design packages supposes that the present ESF construction schedule (fall of 1990) holds.

The review schedule provides for two management reviews, the first at 50% package completion, and the second at 90% package

completion. A verification review at 100% package completion will be performed by F&S. A design package presentation to all project associated organizations as well as the State of Nevada and the NRC will take place at the end of the verification review. Finally, a design acceptance review will be accomplished by YMPO. The enclosed handout describes each of these reviews in detail.

It is important to note that prior to design acceptance, the State and the NRC will have the opportunity to review each design package in detail and comment. Design acceptance will not take place until State and NRC comments are addressed. The design package presentation for design package number one is presently scheduled for December, 1989.

V. LICENSING AND DOE-NRC INTERACTIONS

A. Study Plans

The review status of study plans is as follows (from the handout):

REVIEW STATUS	
Concurrent PO/HQ Review	18
Post-PO/HQ Review	1
Post-HQ Revision	3
Post-Review Audit	2
At HQ (PO Approved)	1
At NRC	7

Total Submitted by Participants	32

The status of study plans for near-term surface-based studies is (from the handout):

STATUS OF STUDY PLANS FOR NEAR-TERM SURFACED BASED STUDIES

		TO NRC		
STUDY		STATUS	PLANNED	EXPECTED*
8.3.1.2.2.4	UZ Percolation-ESF (Multi-Purpose Boreholes)	Approved	Sent	
8.3.1.2.2.3	UZ Percolation Surface- Based (Unsaturated Zone Drilling)	Revision & Resolution	6/89	10/89
8.3.1.2.2.1	UZ Infiltration (Shallow UZ Neutron Holes)	To PD 9/89	7/89	3/90
8.3.1.4.3.1	Systematic Drilling Program	To PD 9/89	12/89	2/90
8.3.1.2.1.3	Ground Water Flow System (40-Mile Wash Drilling)	To PD 10/89	9/89	4/90
8.3.1.2.3.1	SZ Ground Water Flow (Act.7) (Water Table Drilling; C-Well Tracer)	Revision/ Audit	6/89	9/89
8.3.1.2.3.1	SZ Ground Water Flow (Act.1-6)	In PD/HQ Review	10/89	12/89
8.3.1.5.2.1	Quaternary Regional Hydrology (Calcite-Silica Trenching/Drilling)	Approved	Sent	
8.3.1.17.4.2	Faulting Near Surface Facilities (Midway Valley Trenching)	Approved	Sent	
8.3.1.17.4.6	Quaternary Faulting Site Area (Trenching)	Revised/ Need QALAS	6/89	11/89
8.3.1.2.1.2	Runoff and Streamflow (40-Mile Wash Flumes)	PD/HQ Review	10/89	12/89

(Planned delivery dates to NRC reflect 4/89 estimate by DOE)

* Preliminary Estimate

The status of remaining FY 89 priority study plans is (from the handout):

		<u>TO NRC</u>		
<u>STUDY</u>		<u>STATUS</u>	<u>PLANNED</u>	<u>EXPECTED*</u>
O/SB	Ground Water Flow System	To PD	9/89	4/90
8.3.1.2.1.3	(40-Mile Wash Drilling)	10/89		
O/SB	UZ Infiltration (Shallow	To PD	7/89	3/90
8.3.1.2.2.1	UZ Neutron Holes)			
O/SB	UZ Perc. Surface-Based	Revision	6/89	10/89
8.3.1.2.2.3	(UZ Drilling)	& Resolution		
O	Hydrochemistry UZ	Post HQ	7/89	10/89
8.3.1.2.2.7		Review		
O/SB	Site SZ Ground Water	PD/HQ	10/89	12/89
8.3.1.2.3.1	Flow (Activities 1-6)	Review		
O/SB	Site SZ Ground Water	Revision/	6/89	9/89
8.3.1.2.3.1	Flow (Act.7; C-Well	Audit		
	Tracer) (Water Table			
	Drilling)			
O	Hist. Min./Pet./Chem.	HQ Audit	4/89	10/89
8.3.1.3.2.1	of Transport Pathways			
O	Hist. Min. Alternation	In Revision	5/89	9/89
8.3.1.3.2.2	at YM			
O	Batch Sorption Studies	HQ Review	7/89	11/89
8.3.1.2.4.1				
O	Mech. Prop. Intact Rock	Final	4/89	9/89
8.3.1.15.1.3		Revision		

0	Hist. and Current	To PO-TBD	9/89	TBD
8.3.1.17.4.1	Seismicity			
0/SB	Quaternary Faulting	Revised/	6/89	11/89
8.3.1.17.4.6	(Trenching)	Need QALAS		
8.3.1.9.2.1	Natural Resource Assess-	In	TBD	TBD
	ment (Mineral & Energy	Preparation		
	Resources)			

(Planned Delivery Dates to NRC Reflect 4/89 Estimate by DOE)

* Preliminary estimate

0 - Ongoing

SB - Near-Term Surface-Based Testing

The following pages are a graphical summary of the study plan review status: (See Insert A, B, C and D)

B. Biannual Status Report (BSR)

Purpose: Report detailed status/progress of site characterization activities at lowest SCP level of detail

Scope: SCP preparatory activities, technical program and references

WBS Level Report: 7th or lower (SCP subactivity level)

WBS Level Input: 7th or lower (SCP subactivity level)

Audience: Scientific community; project oversight groups, including NRC and State of Nevada

Report Frequency: Biannual

Report Input Schedule: April 30; September 30

Input Provided By: TPO's (provided by PI's)

Degree of Management Review of Input: Management and technical reviews suitable for input to be used as referencable document.

The BSR is a technical report.

SUMMARY OF STUDY PLAN REVIEW STATUS

4/87 6/87 8/87 10/87 12/87 2/88 4/88 6/88 8/88 10/88 12/88 2/89 4/89 6/89 8/89

8.3.1.2.1.2

8.3.1.2.2.2

8.3.1.2.2.3

8.3.1.2.2.4

8.3.1.2.2.5

8.3.1.2.2.6

8.3.1.2.2.7

8.3.1.2.3.1.1-6

8.3.1.2.3.1.7

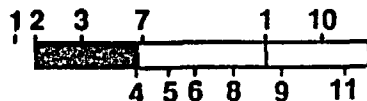
INSERT A

KEY

 HQ REVIEW  PROJECT REVISION  NRC REVIEW

FORMAT

ABOVE BAR - PROJECT OFFICE EVENTS



BELOW BAR - HEADQUARTERS EVENTS

EVENT KEY

- | | |
|-----------------------|-------------------------|
| 1 NEW DRAFT TO PO | 6 HQ CONSOLIDATION |
| 2 PO TECHNICAL REVIEW | 7 PO COMMENTS TO PI |
| 3 PO AP-1.10Q START | 8 RESOLUTION MEETING |
| 4 DRAFT TO HQ | 9 HQ AUDIT/VERIFICATION |
| 5 HQ ACCEPTANCE | 10 PO APPROVAL |
| | 11 HQ APPROVAL |

FOOTNOTES

- A HQ REVIEW PENDING APPROVAL OF THEIR LINE IMPLEMENTING PROCEDURE
- B ASSIGNED LOW PRIORITY BY HQ

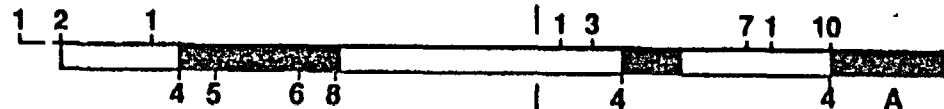
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DATE AP 1.10Q

SUMMARY OF STUDY PLAN REVIEW STATUS

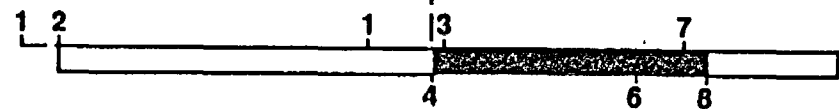
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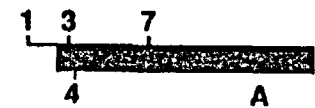
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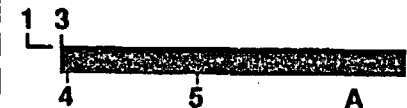
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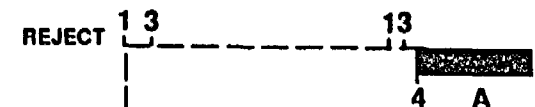
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8.3.1.3.4.1 & 3



8.3.1.3.4.2



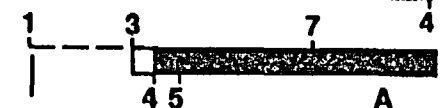
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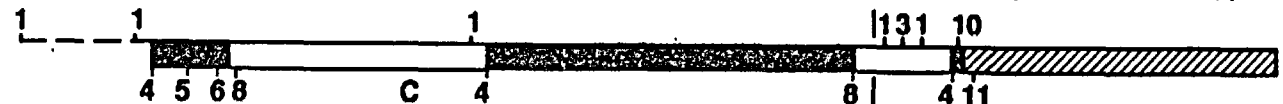
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8.3.1.3.7.1



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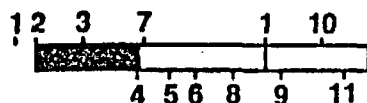


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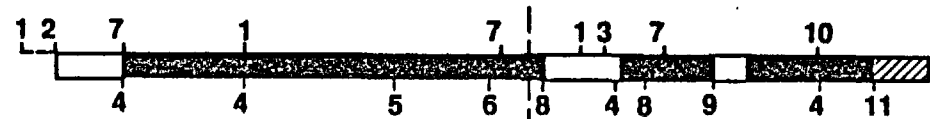
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SUMMARY OF STUDY PLAN REVIEW STATUS

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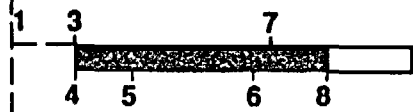
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8.3.1.8.1.1



8.3.1.8.5.1



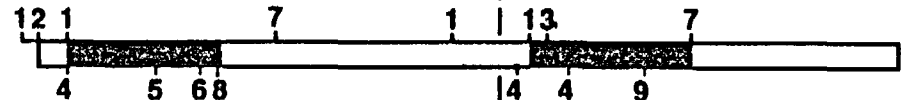
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8.3.1.15.1.2



8.3.1.15.1.3



EFFECTIVE
DATE AP 1.10Q

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BELOW BAR - HEADQUARTERS EVENTS

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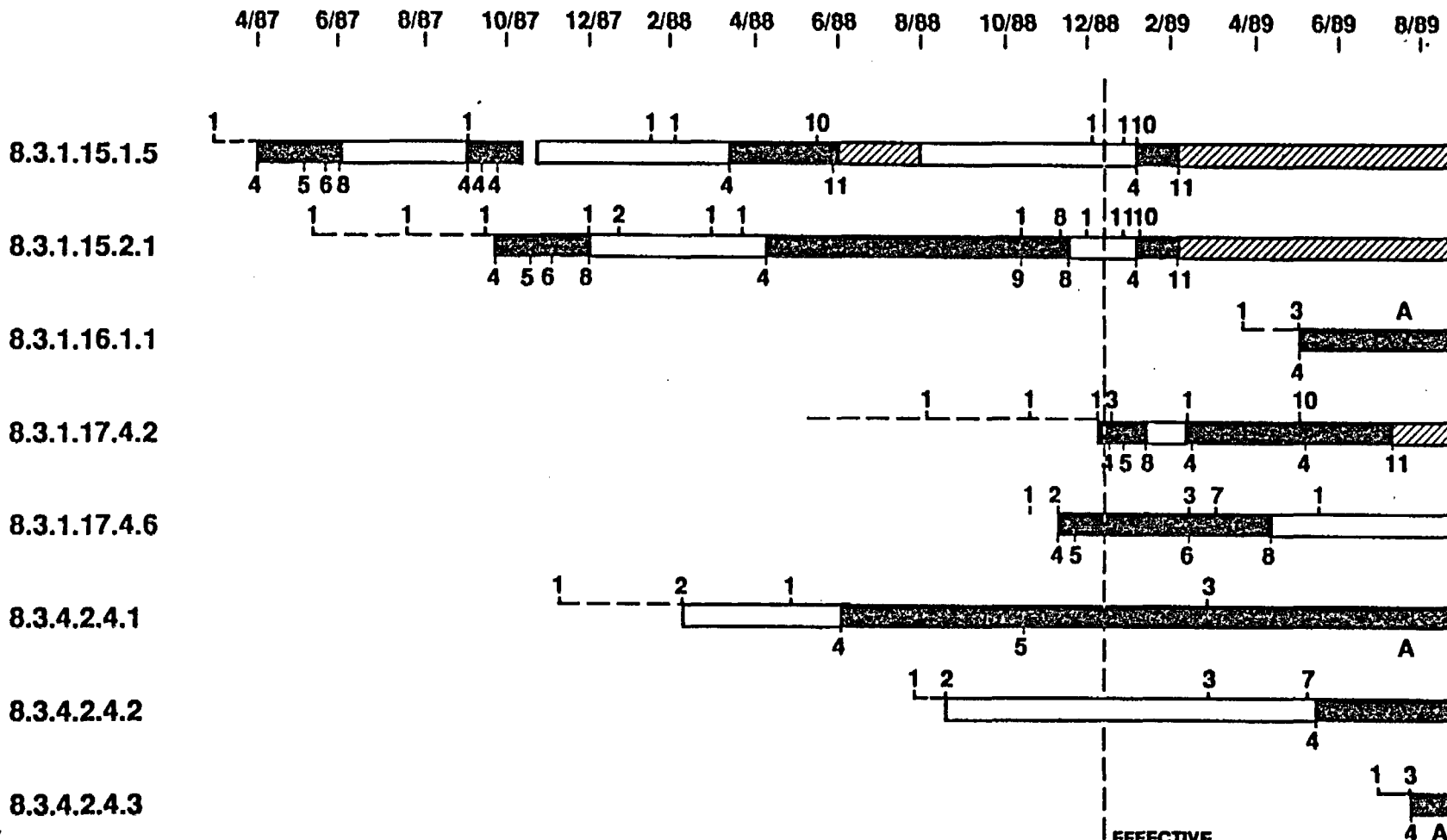
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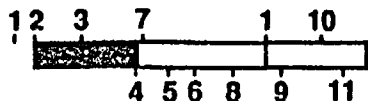


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- B ASSIGNED LOW PRIORITY BY HQ

EFFECTIVE
DATE AP 1.10Q

C. Meetings Attended

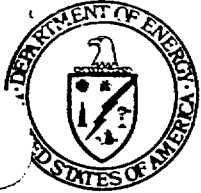
8/7 Meeting with Carl Gertz
8/8 Meeting with Ed Wilmot
8/9,10,11 Trip to Milford, Utah with John Peshel, HLEN
8/14 Trip to NTS with Robert Johnson, HLPD
8/15 Meeting with Dave Dobson, YMPD
8/22 Meeting with Dave Dobson, YMPD
8/22 Meeting with Leo Little, YMPD
8/28,29,30 Geophysics Integration Workshop

VI. STATE OF NEVADA INTERACTIONS - None

There are no new issues that this office has identified that have not been brought to management's attention.

cc: With enclosures: K. Stablein, M/S 4 H3, R. Adler, J. E. Latz
Without enclosures: C. P. Gertz, R. E. Loux, M. Glora, G. Cook,
D. M. Kunihiro, K. Turner, R. E. Browning, M/S 4 H3;
R. Bernero, M/S 6 A4, H. Thompson, M/S 17 G21;
H. Denton, M/S 17 F2; S. Gagner, M/S 2 G5;
L. Kovach, M/S NLS260

Enclosures: Info re: Geophysics Integration Workshop, 8/28-30/89;
TPD Meeting Project Level Status Reports, 8/31/89; YMP Project
Manager-Technical Project Officer Meeting Agenda; Status of
Prototype Drilling and the LM 250 Drill Rig, 8/31/89, (Clanton,
TPD Meeting); Geophysics "White Paper" Report on Geophysical
Activities for the Yucca Mountain Project, 5/89 (Draft); ESF
Design Package Reviews, 8/15/89 (Draft); LANL July Project Status
Report



Department of Energy

Nevada Operations Office
P. O. Box 98518
Las Vegas, NV 89193-8518

WBS #1.2.9.1.1
"QA: N/A"

AUG 17 1989

Mark W. Frei, HQ (RW-22) FORS
Leslie J. Jardine, LLNL, Livermore, CA
Larry R. Hayes, USGS, Las Vegas, NV
Richard J. Herbst, LANL, Los Alamos, NM
Thomas O. Hunter, SNL, 6310, Albuquerque, NM
John H. Nelson, SAIC, Las Vegas, NV

GEOPHYSICS INTEGRATION WORKSHOP, AUGUST 28-30, 1989 (NN1-1989-3260)

The Yucca Mountain Project Office (Project Office) has scheduled a workshop on the topic of integration of the geophysics program, to be held on the Nevada Test Site (NTS) on August 28, 29, and 30, Monday through Wednesday. The workshop will bring together the principal users and collectors of geophysical data in the Yucca Mountain Project and will consist of two half-day field trips and two half-days and one full day of indoor presentations and discussions.

The purpose of this meeting is to coordinate and integrate planned site investigations to better address the issues-resolution needs of the multiple users of many of the geophysical surveys, and to establish lines of communication, between geologists and geophysicists and in different participant organizations.

For each of the major topic areas we will cover, a lead scientist will be designated to guide the discussions, to organize a final agenda for presentations and discussions, and to construct a memo summarizing results and recommendations, and action items for future efforts. Kenneth Fox of the U.S. Geological Survey (USGS), Bruce Crowe of Los Alamos National Laboratory, John Czarnecki of USGS, Dick Mast of USGS, and Ernie Hardin of Science Applications International Corporation have been nominated to lead the workshop in the topics of tectonics, volcanism, hydrology, natural resources, and feasibility testing, respectively. A preliminary agenda for the workshop is enclosed (enclosure 1). Any participant wishing to make a presentation indoors or in the field, or to add an item to the agenda for discussion, should contact the appropriate topic leader.

The Project Office will supply field vehicles, transportation from the Project Office in Las Vegas to Mercury, and back, and will reserve housing in Mercury on the nights of August 28 and 29. For indoor meetings, the Project Office has reserved the small conference room in Building 111, the U.S. Department of Energy Support Office in Mercury. All participants must have visitors' badges to participate because the workshop will be held on the NTS. Allow at least two weeks for processing of the badging paperwork if you do not have an NTS badge. The group will leave the Project Office in Las Vegas at 6 a.m. on Monday.

AUG 17 1989

The enclosed list (enclosure 2) is an initial attempt to define personnel who may benefit from attending this workshop, but it is not intended to be a comprehensive or exclusive list. We believe the workshop will be most effective if attendance is limited to a small, but representative group of participants from the various programs using geophysics. Participants may wish to attend only that part of the workshop that applies to their own investigations. In order to coordinate lodging and transportation, please contact Christopher Fridrich of my staff of your nominated attendees. This information should be received by August 21, 1989, and should include the following:

1. Name(s) of attendees and organization represented
2. Portion of workshop to be attended
3. Nights of desired lodging in Mercury

Attendees are responsible for their own badging. Enclosure 3 is included for this purpose.

We welcome any suggestions on the format and content of the workshop. If you have any questions, please contact Christopher J. Fridrich of my staff at (702) 794-7587 or FTS 544-7587.



Carl P. Gertz, Project Manager
Yucca Mountain Project Office

YMP:CJF-5434

Enclosures:

1. Preliminary Agenda
2. Proposed Attendees
3. Badging Information Form

cc w/encls:

S. J. Brocoum, HQ (RW-221) FORS
Jeffrey Kimball, HQ (RW-221) FORS
R. B. Raup, USGS, Denver, CO

PRELIMINARY AGENDA

August 28 Monday:

MORNING: Field Trip: Leaving at 6:00 a.m. from the Yucca Mountain Project Office in Las Vegas

Visit: (1) Lathrop Wells cone
(2) Point of Rocks detachment fault

NOON: Badging for visitors, lunch in Mercury

AFTERNOON: Meeting in the small conference room, Building 111 in Mercury:

Volcanism:

- (1) Defining igneous features at depth:
 - o Problems with defining buried basaltic flows, dikes, and sills
 - o obtaining volume estimates of buried basalts
- (2) Defining structures that may control basalt penetration to the surface
- (3) Use of geophysics to define crustal magma chambers and thermal anomalies

Tectonics:

- (1) Regional seismic lines, integration of those lines with gravity, magnetic, geoelectric data
- (2) Multiple uses of data collected for regional tectonics studies
- (3) Remote sensing techniques and studies of faults

August 29 Tuesday:

MORNING: Field Trip: Leaving at 7:00 from in front of the cafeteria in Mercury for the Little Prow on Yucca Mountain to contemplate seismic lines across Yucca Mountain and surveys directed at the large hydraulic gradient

AFTERNOON: Meeting in the small conference room, Building 111

Tectonics: Extension of regional seismic lines across Yucca Mountain

Hydrology:

- (1) Study of the large hydraulic gradient area and 3-D lithologic characterization
 - o Gravity and magnetic surveys
 - o Magnetotelluric soundings
 - o Seismic reflection and refraction surveys

August 30 Wednesday:

In Las Vegas

~~MORNING: Meeting in the small conference room, Building 111~~

Finish Hydrology:

- (2) VSP, well logging and cross-hole techniques
- (3) fracture characterization

Mineral Resources: Applications of geophysical surveys identifying structures, lithologies, alteration, some minerals and elements, and density and other anomalies to oil and minerals exploration

In Las Vegas

~~AFTERNOON: Meeting in small conference room, Building 111~~

Feasibility Testing:

- (1) Borehole techniques, tomography, and VSP
- (2) radiometric and remote sensing studies
- (3) shallow seismic characterization of depth-to-bedrock, fracturing, and faults
- (4) magnetic and paleomagnetic studies

OUTSTANDING ISSUES, ESPECIALLY INTERFACES BETWEEN ACTIVITIES

LIST OF PROSPECTIVE PARTICIPANTS

DOE/HQ

Mohammad Mozumder
Jeffrey Kimball

WESTON/WASHINGTON, DC

Dan Haymond

USGS/DENVER, CO

Kenneth F. Fox
John S. Stuckless
Rick W. Spengler
John Czarnecki
Philip H. Nelson
Joe S. Downey
William Langer
Walter Mooney
Thomas Brocher
Doug P. Klein
Dick Mast
John Grow
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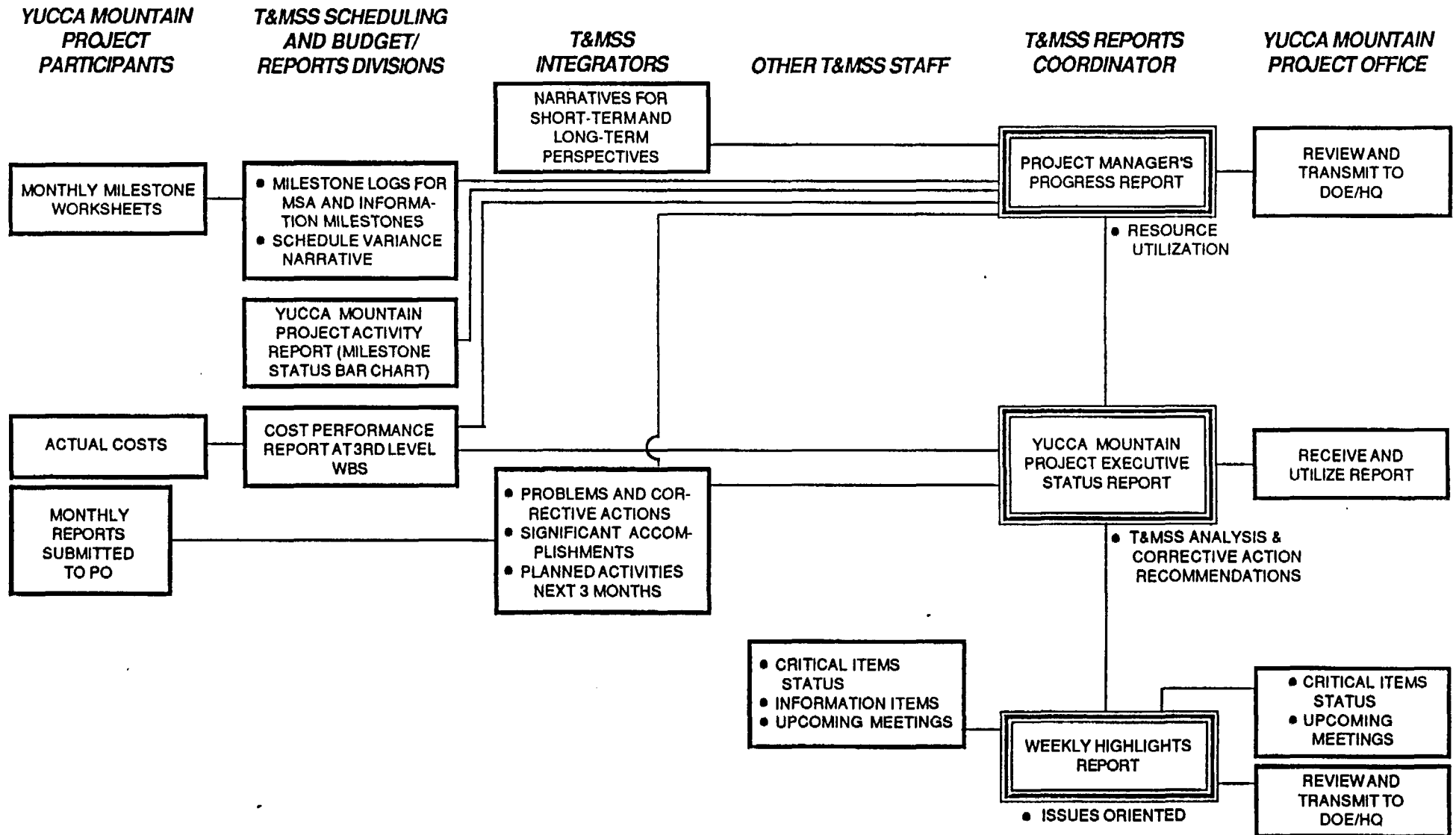
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TPO MEETING

PROJECT LEVEL STATUS REPORTS

AUGUST 31, 1989

YUCCA MOUNTAIN PROJECT MONTHLY AND WEEKLY STATUS REPORTING SYSTEM



COMPARISON OF PROJECT LEVEL REPORTS

	PROJECT MGR'S MONTHLY PROGRESS REPORT	PLANNING & CONTROL SYSTEM (PACS)	BSR
PURPOSE	REPORT PROGRESS OF YUCCA MOUNTAIN PROJECT TO OCRWM MANAGEMENT AND SECRETARY OF ENERGY	PLAN, ANALYZE, REPORT AND CONTROL WORK ON THE YMP	REPORT DETAILED STATUS/PROGRESS OF SITE CHARACTERIZATION ACTIVITIES AT LOWEST SCP LEVEL OF DETAIL
SCOPE	MSA MILESTONE STATUS, SCHEDULE, COST, MAJOR ACCOMPLISHMENTS	PROJECT COST AND SCHEDULE STATUS AND VARIANCES FROM PLANNED BASELINES	SCP PREPARATORY ACTIVITIES, TECHNICAL PROGRAM AND REFERENCES
WBSLEVEL- REPORT	3RD LEVEL	4TH LEVEL (OR WBS MANAGER LEVEL)	7TH OR LOWER (SCP SUBACTIVITY LEVEL)
WBSLEVEL- INPUT	4TH LEVEL	SUMMARY ACCOUNT	7TH OR LOWER (SCP SUBACTIVITY LEVEL)
AUDIENCE	DOE/HQ MANAGEMENT	PROJECT MANAGEMENT	SCIENTIFIC COMMUNITY; PROJECT OVERSIGHT GROUPS, INCLUDING STATE OF NEVADA

COMPARISON OF PROJECT LEVEL REPORTS

(CONTINUED)

	PROJECT MGR'S MONTHLY PROGRESS REPORT	PLANNING & CONTROL SYSTEM (PACS)	BSR
REPORT FREQUENCY	MONTHLY	MONTHLY	BIANNUAL
REPORT INPUT SCHEDULE	7TH WORKING DAY	10TH WORKING DAY	APRIL 30; SEPTEMBER 30
INPUT PROVIDED BY	TPO'S AND T&MSS WBS INTEGRATORS	TPO'S (COST ACCOUNT MANAGERS)	TPO'S (DEVELOPED BY PI'S)
DEGREE OF MANAGEMENT REVIEW OF INPUT	SUITABLE FOR INTERNAL PROJECT/PROGRAM USE	TBD	MANAGEMENT AND TECHNICAL REVIEWS SUITABLE FOR INPUT TO BE USED AS REFER- ENCEABLE DOCUMENT

COMPARISON OF PROJECT LEVEL REPORTS

(CONTINUED)

WEEKLY HIGHLIGHTS REPORT	
PURPOSE	REPORT STATUS OF CRITICAL ITEMS TO DOE/HQ. SHARE CURRENT PROJECT INFORMATION WITH STATE AND NRC
SCOPE	SELECTED ISSUES: SCP, ESF, ENVIRONMENTAL PERMITTING, QA, SMF, PROTOTYPE DRILLING, UPCOMING MEETINGS & PUBLIC INTERACTIONS
WBS LEVEL-REPORT	N/A
WBS LEVEL-INPUT	N/A
AUDIENCE	SAME AS PROGRESS REPORT, PLUS STATE OF NEVADA AND NRC
REPORT FREQUENCY	WEEKLY
REPORT INPUT SCHEDULE	WEDNESDAY COB
INPUT PROVIDED BY	SELECTED YMPO/T&MSS STAFF
DEGREE OF MANAGEMENT REVIEW OF INPUT	LIMITED. DRAFT REPORT IS REVIEWED BY YMPO BEFORE TRANSMITTAL

CONCLUSIONS

- **BSR IS A TECHNICAL REPORT. ALL OTHER EXISTING REPORTS ARE PROJECT MANAGEMENT REPORTS**
- **EXISTING PROJECT LEVEL REPORTS DO NOT CURRENTLY NEED OR COLLECT THE DEGREE OF DETAIL NEEDED BY THE BSR**
- **EXISTING REPORTS MAY BE USEFUL TO TPO'S IN PREPARING INPUT FOR BSR BUT CANNOT BE SUBSTITUTED FOR IT**

YUCCA MOUNTAIN PROJECT
PROJECT MANAGER-TECHNICAL PROJECT OFFICER MEETING
AGENDA

N-AD-C28

1/89

Location: 101 Convention Center Drive , Room 450
 Las Vegas. NV 89109

REVISED

Page: 1 of 1

Date: Aug. 31, 1989

TIME	WHAT	WHO	EXPECTED OUTCOME
9:00-9:15	Introduction/Roles Agenda/Outcome Review 7/27/89 Minutes Date for Next Meeting: 10/6/89	C. Gertz	Agree to Agenda/ Outcome Approve Minutes Agree to Date
9:15-9:45	Manager FYIs	C. Gertz	Understand FYI Items
9:45-10:45	FYIs	Division Directors/TPOs	Understand FYI Items
10:45-11:00	Break		
11:00-11:15	Project Office Input to SPR	T. Bjerstedt	Introduce Project Strategy for SPR2 Input
11:15-11:30	Project-Level Status Reports	B. McKinnon	Understand Scope, Schedule, and Audience
11:30-11:45	Preview of Data Management Presentation for ACNW	R. Levich	Understand Issues to be Discussed
11:45-12:00	Status of Prototype Drilling	U. Clanton	Understand Status
Noon	Adjourn		

TPO MEETING

**STATUS OF
PROTOTYPE DRILLING
AND THE LM 250 DRILL RIG**

PRESENTED BY

UEL S. CLANTON

**AUGUST 31, 1989
LAS VEGAS, NEVADA**

PHASE I PROTOTYPE DRILLING

● OBJECTIVE

- CONDUCT PROTOTYPE DRILLING OUTSIDE OF THE PROPOSED REPOSITORY BLOCK FOR THE PURPOSE OF EQUIPMENT DEVELOPMENT

● LOCATION

- MILFORD, UTAH

● GOALS

- DETERMINATION OF BEST METHOD FOR CORE RECOVERY
- ESTABLISH PENETRATION RATES FOR DRILLING/CORING
- DETERMINE OPTIMUM BIT CONFIGURATION
- PROVIDE HIGH QUALITY BORE HOLES FOR GEOPHYSICS AND HYDROLOGY STUDIES

PHASE 1C ACTIVITIES - JULY AND AUGUST

● ABANDONED UZP-3 JULY 30, 1989

- 222' DEEP
- WATER INFLOW: 100 GPM*

● ABANDONED UZP-3A AUGUST 8, 1989

- 550' DEEP
- WATER INFLOW: 15 GPM*

● ABANDONED UZP-3B AUGUST 15, 1989

- 535' DEEP
- WATER INFLOW: 5 GPM*

● SET SURFACE CASING FOR UZP-3C AUGUST 16, 1989

- LOCATION IS ABOUT 75' FROM THE HORNSILVER SHAFT
- MINE IS 1300' DEEP AND DRY

*** PERCHED WATER, WATER TABLE IS AT 1600 FT. IN THE AREA**

SUMMARY

- **DRILLING IN VOLCANICS BUT NOT WELDED TUFF**
- **DIAMOND CORING HAS PRODUCED EXCELLENT CORE**
 - CORING RATES AVERAGED 5' TO 6' PER HOUR
 - RECOVERY AVERAGES 99-100%
- **MODIFIED BLOWN CORE SYSTEM IS A SIGNIFICANT IMPROVEMENT OVER PHASE 1A**
 - CORING RATES AVERAGED 9' TO 10' PER HOUR
 - RECOVERY AVERAGES ABOUT 95%
- **BECAUSE ONLY LIMITED CORE HAS BEEN OBTAINED, CORING RATES AND CORE RECOVERY SHOULD BE EXTRAPOLATED WITH CAUTION**

NRC MILFORD VISIT TO OBSERVE PROTOTYPE DRILLING/CORING

● STAFF

- PAUL PRESTHOLT, NRC, SITE REP.
- JOHN PESHEL, NRC, HQ, HLEN

● DATES OF VISIT

- AUGUST 10-11, 1989

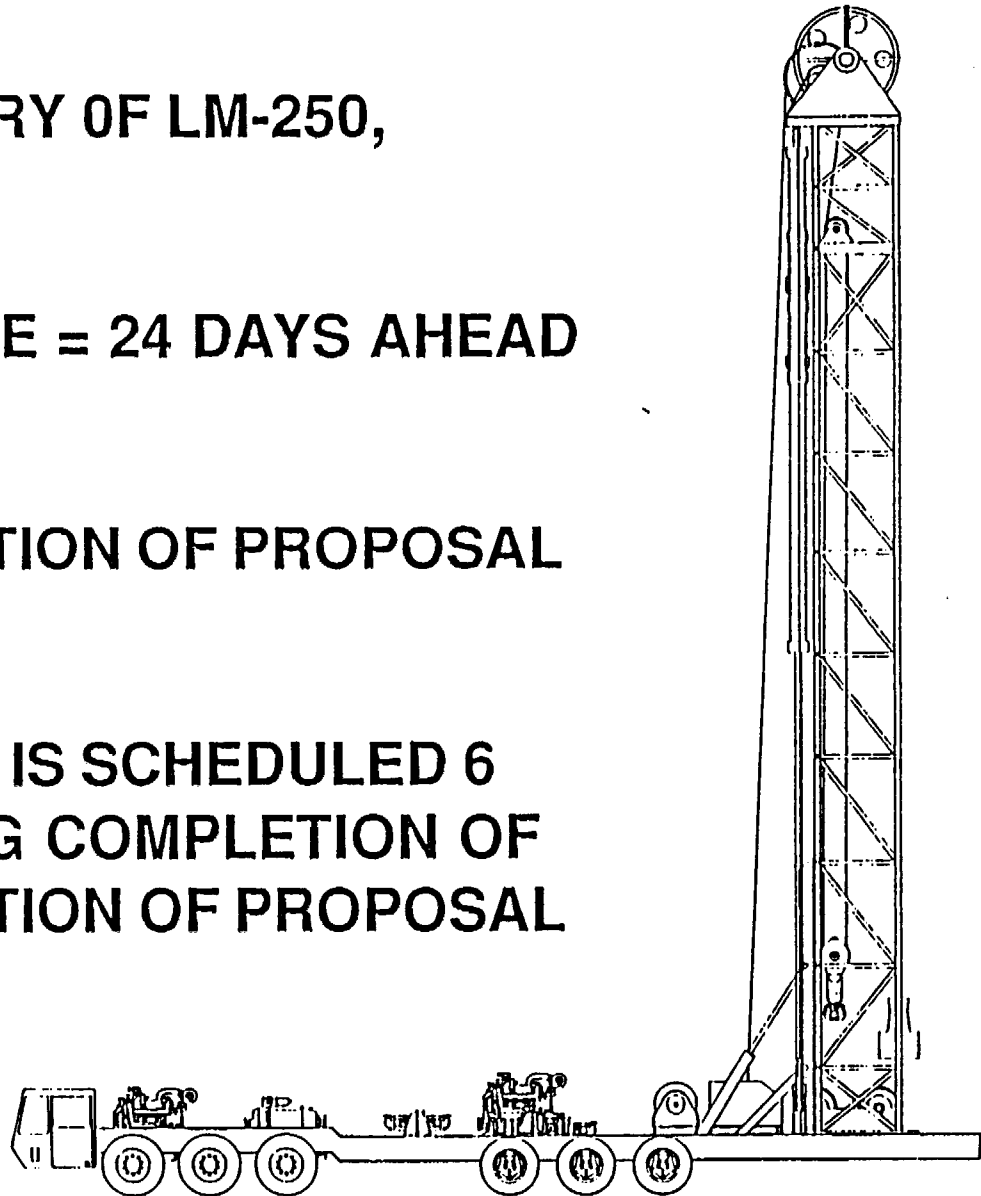
● OPERATIONS OBSERVED

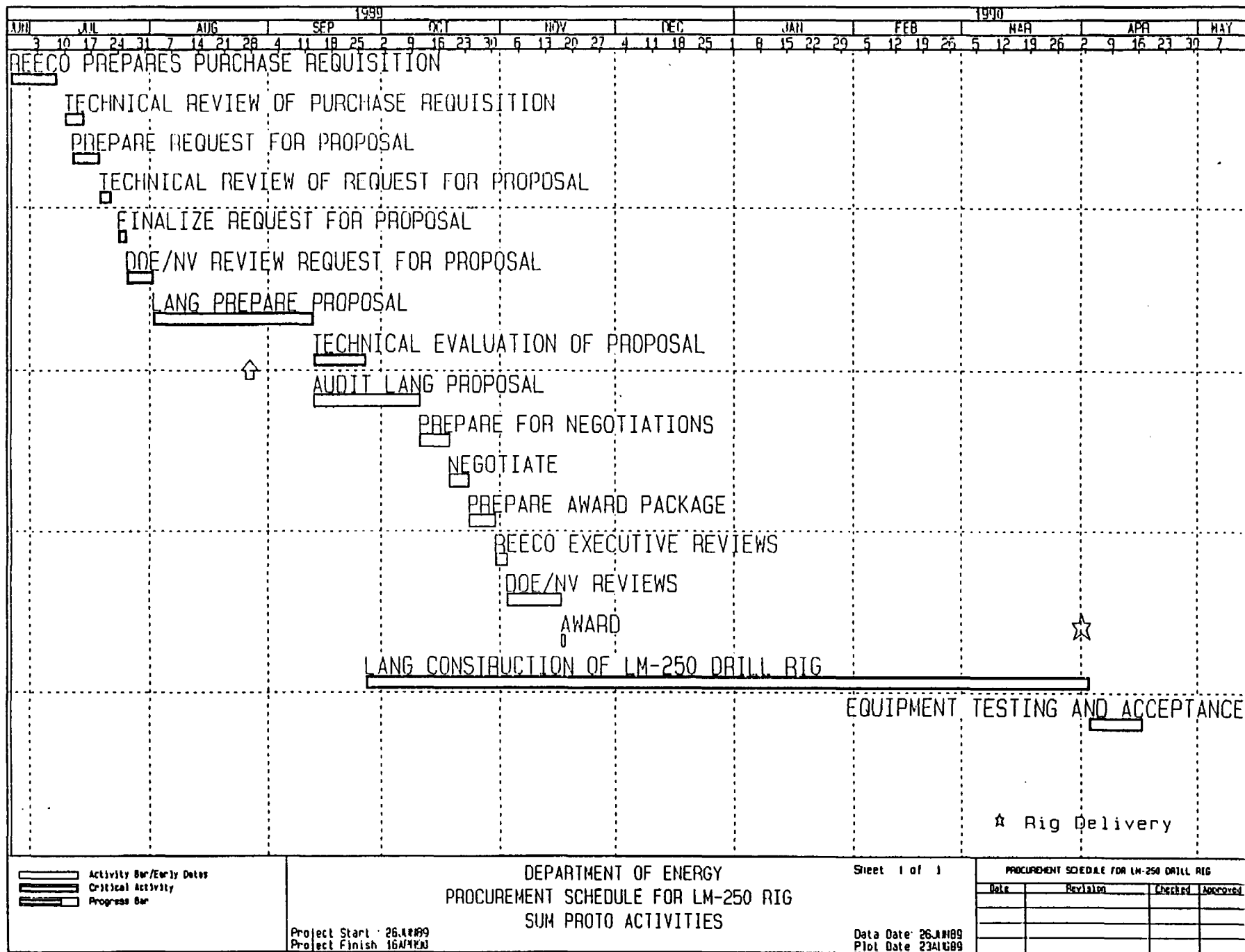
- DIAMOND CORING
- BLOWN CORING
- CORE LOGGING

● NRC STAFF COMMENTED FAVORABLY ON DRILLING/CORING OPERATIONS

STATUS OF THE LM-250 DRILL RIG

- SCHEDULED DELIVERY OF LM-250,
± APRIL 2, 1990
- SCHEDULE VARIANCE = 24 DAYS AHEAD
OF SCHEDULE
- TECHNICAL EVALUATION OF PROPOSAL
IS IN PROGRESS
- DRILL RIG DELIVERY IS SCHEDULED 6
MONTHS FOLLOWING COMPLETION OF
TECHNICAL EVALUATION OF PROPOSAL





DRAFT

GEOPHYSICS "WHITE PAPER"

REPORT ON GEOPHYSICAL ACTIVITIES FOR THE YUCCA MOUNTAIN PROJECT

May, 1989

Yucca Mountain Project
U.S. Department of Energy
Las Vegas, Nevada

ENCLOSURE 1

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August 15, 1989

ESF DESIGN PACKAGE REVIEWS

DRAFT

ORGANIZATION MATRIX FOR ESF DESIGN PACKAGE REVIEWS

<u>Organization:</u>	<u>Management 1</u>	<u>Management 2</u>	<u>Verification</u>	<u>Design Package Presentation</u>	<u>Acceptance</u>
NRC	-	-	-	2	-
DOE/HQ (Weston)	1	2	-	2	-
State of NV	-	-	-	2	-
NVO	-	***	-	-	-
Yucca Mountain P.O.	1	2	1	2	1
T&MSS	2	2	1	3	-
MACTEC	-	***	***	-	-
REECo	1	2	-	2	-
Los Alamos	***	***	***	***	-
Sandia	1	1	1	2	-
USGS	***	***	-	***	-
LLNL	***	***	***	***	-
MSHA	1	1	-	1	-
Corps of Eng	***	1	-	1	-
<u>Minimum^{sub} Total</u> (Excluding AEs)	7	11	3	17	1
H&N	4/1 **	4/1 **	***	***	4/1 **
FSN	4/1 **	4/1 **	***	***	4/1 **

4/1 ** Approximately 4 people from A/E presenting. 1 person each from other A/Es depending upon the package presented.

*** Number of people as appropriate for type of package.

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MANAGEMENT REVIEW NUMBER 1

Management Review Number 1 (Review 1) shall be performed when approximately 50 percent of a design packages manhours have been expended to determine if the technical design concepts contained in the design package contain flaws that, left undetected, would result in significant impacts to safety, schedule, or cost (this includes comparing the design with design requirements). Review 1 will require 5 to 7 days to complete, depending on design package complexity and subject. The AE producing the design package under review will manage the review process; make a design package presentation to the review team; record, maintain, and archive documentation; track the status and resolution of comments; certify completion of the review and closure of open items; and prepare management review meeting minutes. The Yucca Mountain Project Office/T&MSS will schedule Review 1; select the review team members; delegate team member responsibilities; define review criteria; transmit all comments to the AE; arbitrate all disputes; and sign the review meeting minutes prepared by the responsible AE. Comments may be written directly on prints of the drawings and copies of the specifications but each such comment must be repeated on a standard document review sheet.

MANAGEMENT REVIEW NUMBER 2

Management Review Number 2 (Review 2) shall be performed when approximately 90 percent of a design package's manhours have been expended to assure that all action items from Review 1 are closed and to determine

DRAFT

if the matured technical design concepts contained in the design package contain flaws that, left undetected, would result in significant impacts to safety, schedule, or cost (this includes comparing the design with design requirements). Review 2 will require 6 to 9 days to complete, depending on design package complexity and subject. The AE producing the design package under review will manage the review process; make a design package presentation to the review team; record, maintain, and archive documentation; track the status and resolution of comments; certify completion of the review and closure of open items; and prepare management review meeting minutes. The Yucca Mountain Project Office/T&MSS will schedule Review 2; select the review team members; delegate team member responsibilities; define review criteria; transmit all comments to the AE; arbitrate all disputes; and sign the review meeting minutes prepared by the responsible AE. Comments may be written directly on prints of the drawings and copies of the specifications, but each such comment must be repeated on a standard document review sheet.

VERIFICATION REVIEW

DRAFT

Verification Review (Verification) shall be performed by the responsible AE, to confirm the adequacy of design, after completion of the design package and prior to relying on a system, component, or structure to perform its function. The extent and duration of Verification will be a function of the design packages importance to safety, waste isolation, complexity, degree of standardization, use of state-of-the-art systems,

and similarity to other design packages. The AE producing the design package under review will plan, scope, and schedule the Verification; define the purpose of the review; select the Verification Chairperson; and certify completion of the Verification. The verification Chairperson will designate a Verification secretary, select and qualify Verification team members (Team), collect information for the Verification, complete the Team selection record, coordinate Team activities, issue a Review Record Memorandum (RRM), assign action items for resolution of unresolved comments, coordinate closure of action items, and compile the Verification data package. The Verification Manager prepares and distributes the Verification package to the Team, prepares responses to Team comments, insures closure of comment resolution commitments, and prepares the listing of Verification activities for the RRM. Verifying team members shall be any competent, certified individual or group not performing the original design. The Verification secretary shall document the Team activities and prepare the RRM. The verification method shall be one or a combination of the following: design review, alternate calculations, qualification tests, or peer review. As a minimum, Verification shall address and document the correctness, appropriateness, and use of the related elements of design (e.g., input, assumptions, design methods, outputs, interfaces, procedures, requirements, instructions, and computer programs). Verification shall comply with the Project QAP, Section III-2.4, AP-5.14Q for design review, and QMP-03-01 for peer review.

DESIGN PACKAGE PRESENTATION

DRAFT

A presentation of the completed design package will be made following verification but before Design Acceptance. All Project associated organizations, including NRC and the State of Nevada, will be invited. Necessary changes resulting from this presentation must be made and verified prior to Design Acceptance.

DESIGN ACCEPTANCE

Acceptance shall be performed to confirm the completeness of the design package and its readiness to be issued for use by the program participants. The extent and duration of Acceptance will be a function of the design packages complexity and subject. The AE producing the design package shall document the following: use of controlled input (i.e., SDRD, RIB, BFD, DBD, etc.); closure of all action items assigned during the management, verification, and technical assessment reviews; and implementation of the design control process. The Engineering and Development Director of the Project Office shall assign the responsible Branch Chief who will accept and sign the design package on behalf of the Project. T&MSS shall prepare the design package for submittal to the CCB, and, upon approval, issue the design package for distribution and formal records keeping.

DRAFT

MANAGEMENT REVIEW

August 15, 1989

1. 1/2 - 1 day Architect/Engineer coordinates design package overview.

- o Major criteria are discussed.
- o Design drivers are presented.
- o Design package is described.
- o Problems or clarifications denoted.
- o Viewgraph/sketch presentation.

At the end of the meeting, design package, (drawings and specifications) are given to the Project Office.

2. Project Office gives review team design package.

- o Small design package team reviews for 1-2 days.
- o Large design packages team reviews 4-5 days.
- o Team reviews all drawings and specifications against the requirements for major concerns.
- o Team members write comments on document review sheets.

3. All comments submitted to Project Office.

4. Project Office transmits comments to Architect/Engineer. Comments are resolved by A/E.

5. Architect/Engineer provides documentation for the permanent record.

- o Submit review summary to Project Office.
- o Track comments and resolutions until closed out.

DRAFT

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

WBS #: 1.2.9
QA: N/A

Paul Reimer 8/13/89
RG.

August 10, 1989

TWS-EES-13-08-89-051

Mr. Carl P. Gertz, Project Manager
Yucca Mountain Project Office
US Department of Energy
P.O. Box 98518
Las Vegas, NV 89193-8518

Dear Mr. Gertz:

SUBJECT: JULY PROJECT STATUS REPORT

Attached are the July Project Status Report for Los Alamos' participation in the Yucca Mountain Project, the Technical Data Management System Submittal Record, and the Monthly Milestone Status Report. A list of outstanding policy reviews and other documents is also included. Documents checked on that list have been at the Project Office for at least two months; the authors are very eager to have those documents approved.

Sincerely,



R. J. Herbst

ABC/em

Attachment: a/s

ACTION ymp
INFO _____
AMA _____
AMESH _____
AMOE _____
OER _____

ACTION _____
CC: Marty P. Jones
CC: William R. Hobson
CC: Deborah C. Cloninger
CC: Debra J. Cloninger
CC: Frederick L. Smith
CC: Robert L. Smith
CC: William R. Hobson
CC: Deborah C. Cloninger
CC: Debra J. Cloninger
CC: Frederick L. Smith
CC: Robert L. Smith

REC'D IN WMPO

8/14/89

Mr. Carl P. Gertz
TWS-EES-13-08-89-051
August 10, 1989
Page 2

Cy w/attachment:

R. Bullock, FSN, Las Vegas, NV
J. C. Calovini, H&N, Las Vegas, NV
V. J. Cassella, HQ/Washington, DC
C. Garvin, SAIC, Las Vegas, NV
L. Hayes, USGS, Denver, CO
T. Hunter, SNL, Albuquerque, NM
T. Jackson, SAIC, Las Vegas, NV
R. F. Pritchett, REEC, Las Vegas, NV
L. Jardine, LLNL, Livermore, CA
A. M. Sastry, MACTEC, Las Vegas, NV
J. Nelson, SAIC, Las Vegas, NV
T. Petrie, DOE/YMPO, Las Vegas, NV
M. Cloninger, DOE/YMPO, Las Vegas, NV
U. Clanton, DOE/YMPO, Las Vegas, NV
D. Dobson, DOE/YMPO, Las Vegas, NV
J. Robson, DOE/YMPO, Las Vegas, NV
V. Iorff, DOE/YMPO, Las Vegas, NV
J. Waddell, SAIC, Las Vegas, NV
J. Peck, SAIC, Las Vegas, NV
K. Beall, SAIC, Las Vegas, NV
J. Younker, SAIC, Las Vegas, NV
I. Cottle, SAIC, Las Vegas, NV
J. Treadwell, SAIC, Las Vegas, NV
A. B. Caughran, IS-11, MS J521
R. J. Herbst, EES-13, MS J521
J. A. Canepa, EES-13, MS J521
W. Meyers, EES-DO, MS D446
H. N. Kalia, EES-1/LV, MS J900/527
K. A. West, EES-13, MS J521
H. P. Nunes, EES-13, MS J521
B. M. Crowe, EES-13/LV, MS J900/527
A. R. Pratt, FIN-10, MS J521
RPC File (2), MS J521
EES-13 Library, MS J521
TWS-EES-13, MS J521
CRM-4 (2), MS A150

MONTHLY STATUS REPORT -- JULY 1989

1.2.1 Systems

No action to report this month.

1.2.3.2 Geology

MAJOR ACCOMPLISHMENTS:

Samples were collected at the Lathrop Wells volcanic center and the "A" cone in the Cima volcanic field for testing the feasibility of dating volcanic events at these sites using the thermoluminescence dating technique. Also, thirteen samples of lava and scoria were collected from the Lathrop Wells volcanic center for geochemical analysis. Nine additional scoria and lava samples from the Lathrop Wells center and from the "A" cone were collected for x-ray fluorescence analysis.

A report on the probability of volcanic activity at Yucca Mountain was received from the Nuclear Regulatory Commission. The report was reviewed and summary comments were provided to the Department of Energy at Las Vegas.

Heavy mineral separates have been analyzed by XRD in support of the sorption task. The phases separated are dominated by hematite, magnetite, and ilmenite.

We are preparing a report describing the smectite/illite transitions. Preliminary results indicate that the activity of $\text{SiO}_2(\text{aq})$ may be a primary variable controlling smectite/illite transformation.

PLANNED WORK:

Continue ongoing surface-based tests (non-disturbing) in mineralogy, petrology, stability of minerals, and volcanism.

Revise Characterization of Volcanic Features, R0 (8.3.1.8.5.1).

Examination and analysis of fracture-coating minerals in the Topopah Spring Member in USE G-1, G-2, and GU-3 will continue as time and sample availability allow.

PROBLEM AREAS:

None.

1.2.3.3 Hydrology

MAJOR ACCOMPLISHMENTS:

The verification of the computer code SORBEQ has been completed for both the forward and inverse modes of operation. This work is in support of the reactive tracer testing in the C-holes. Verification of the code FEHMN continues.

PLANNED WORK:

Initiate laboratory tracer experiments using single minerals.

Begin documenting SORBEQ.

PROBLEM AREAS:

None.

1.2.3.4 Geochemistry

MAJOR ACCOMPLISHMENTS:

Permits for collecting water samples from the J-13 well and rock samples from the Busted Butte and Calico Hills areas have been approved.

All components of the photoacoustic spectrometer system have been configured and tested. This system supports and will significantly enhance the radionuclide solubility and speciation tasks.

Milestone report R343, "Preliminary Geochemical/Geophysical Model of Yucca Mountain," was approved by the Project Office on 7/10/89.

SIGNIFICANT MEETINGS:

An information exchange meeting with the investigators of the Retention Task of the Swedish Nuclear Fuel and Waste Management Co. was held. Discussions centered on dynamic transport processes (such as dispersion, diffusion, fracture flow, and colloid transport), solubility and speciation, radiocolloid formation, and sorption processes. Several areas of common interest where collaborations can be established were identified, including modeling fracture flow and studying colloid transport.

PLANNED WORK:

Simulation of spatial distribution of compositional data for use in transport models such as TRACR3D.

Continue transport work with pure minerals.

PROBLEM AREAS:

None.

1.2.5 Regulatory and Institutional

No action on the SCP occurred this month.

MAJOR ACCOMPLISHMENTS:

The status of the study plans is as follows.

Water Movement Test, R3 (8.3.1.2.2.2). Submitted to Project Office 1/6/89. Approved by Project Office and DOE/HQ; sent to NRC and State of Nevada.

Diffusion Test in the Exploratory Shaft, R0 (8.3.1.2.2.5). Submitted to Project office 11/1/88. Project Office AP-1.10Q review comments received. Submitted to DOE/HQ 4/18/89. Abstract and SCP-based network submitted to Project Office 5/25/89 and to DOE/HQ 6/30/89.

Testing of the C-Hole Sites With Reactive Tracers, R1 (8.3.1.2.3.1.7). Completed revision based on Project Office and DOE/HQ comments. Revision 1 was sent to DOE/HQ 5/2/89. Project Office AP-1.10Q review comments were received 5/10/89. Revision 2, which incorporates DOE/HQ and Project Office comments, was submitted to the Project Office 6/27/89.

Mineralogy, Petrology, and Chemistry of Transport Pathways, R3 (8.3.1.3.2.1). Revision 3, which incorporates Project Office AP-1.10Q review comments, was submitted to the Project Office 5/25/89. Study Plan was approved by the Project Office and transmitted to DOE/HQ on 6/16/89. A Study Plan Assessment was developed for this study and transmitted to DOE/HQ on 6/22/89.

History of Mineralogy and Geochemical Alteration at Yucca Mountain, R0 (8.3.1.3.2.2). Submitted to Project Office 11/02/88. On 1/23/89, information copies of abstract and quality assurance appendix submitted to Project Office so AP-1.10Q review could proceed (1/25/89). Project Office and DOE/HQ comments were received 5/25/89. A comment resolution meeting was held on May 31, 1989, for DOE/HQ comments.

Kinetics and Thermodynamics of Mineral Evolution and Conceptual Model of Mineral Evolution, R0 (8.3.1.3.3.2; 8.3.1.3.3.3). Submitted to Project Office 2/23/89. Study plan submitted to DOE/HQ for review 3/14/89. Project Office AP-1.10Q review comments were received 6/1/89.

Sorption Studies and Sorption Modeling, R0 (8.3.1.3.4.1; 8.3.1.3.4.3). Submitted to Project Office 1/4/89. Undergoing Project Office AP-1.10Q review (1/30/89).

Biological Sorption and Transport, R1 (8.3.1.3.4.2). Revision 1, which incorporates screening review comments, was submitted to the Project Office 5/26/89. Undergoing Project Office AP-1.10Q review (6/16/89).

Dissolved Species Concentration Limits, and Colloid Formation and Stability, R0 (8.3.1.3.5.1; 8.3.1.3.5.2). Undergoing Los Alamos QP3.2 technical review.

Dynamic Transport Column Experiments, R0 (8.3.1.3.6.1). Submitted to Project Office 7/24/89.

Diffusion, R0 (8.3.1.6.2). Submitted to Project Office 7/24/89.

Probability of Volcanic Eruption Penetrating the Repository, R0 (8.3.1.8.1.1). Submitted to Project Office 3/29/89. The study plan is currently undergoing Project Office AP-1.10Q review (4/27/89). Submitted to DOE/HQ (4/19/89).

Effects of Volcanic Features, R0 (8.3.1.8.1.2). In preparation.

Characterization of Volcanic Features, R0 (8.3.1.8.5.1). Submitted to Project Office 12/14/89. Undergoing Project Office AP-1.10Q review (1/25/89). Project Office AP-1.10Q comments received 6/9/89. A Comment Resolution Meeting for Project Office and DOE/HQ comments was held July 11-12, 1989.

Retardation Sensitivity Analysis, R0 (8.3.1.3.7.1). Submitted to Project Office 12/14/89. Undergoing Project Office AP-1.10Q review (2/8/89). Information copy of the abstract submitted to Project Office 2/16/89. Study plan submitted to DOE/HQ for review 3/6/89. Project Office AP-1.10Q comments received 6/28/89.

Ground Water Chemistry Modeling, R0 (8.3.1.3.1.1). In preparation.

PROBLEM AREAS:

None.

1.2.6 Exploratory Shaft

MAJOR ACCOMPLISHMENTS:

Prepared a response to a DOE/HQ request on the status of prototype testing, and reviewed the feasibility report for the Prototype shaft. Initiated drilling for Phase II of the prototype intact fracture tests, and continued and completed perched water drilling.

Initiated preparation of information to be used by the Project Office to define the role of the US Bureau of Mines' Pittsburgh and Minneapolis centers.

Developed work sheets for critical path test durations to be used by DOE/HQ to develop Long Range Plans.

Reviewed IDS grading report. A survey was performed by T&MSS on the existing procedures for design control.

Contract document was revised and reissued defining Los Alamos and EG&G responsibilities. EG&G has provided comments to modify the document.

PLANNED WORK:

Develop IDS Title II Design Initiation Readiness Review Plan; complete IDS procedures; develop ID network to completion of ESF testing and integrate this network with ESF design and construction network and the testing network; and identify IDS operational requirements, including resources and budgets.

PROBLEM AREAS:

None.

1.2.9 Project Management

MAJOR ACCOMPLISHMENTS:

The Records Processing Center was relocated from LANL to Los Alamos Technical Associates.

SIGNIFICANT MEETINGS:

Staff were interviewed by a Government Accounting Office auditor for two days.

PROBLEM AREAS:

None.

**LOS ALAMOS NATIONAL LABORATORY
OUTSTANDING PROJECT OFFICE ACTION ITEMS
July 31, 1989**

Policy Reviews

- ✓ 1. Milestone R743 report: resubmitted 12/7/88 with response to Project Office review.
- ✓ 2. Milestone R749 report: resubmitted 12/12/88 with response to Project Office review.
- ✓ 3. Milestone P379 report: resubmitted 1/18/89.
- ✓ 4. Milestone T404 report: resubmitted 2/28/89 with response to Project Office review.
- ✓ 5. Milestone R346 report: resubmitted 4/4/89; responded to Project Office comments 5/23/89.
- ✓ 6. Milestone M367 report: resubmitted 4/11/89 with response to Project Office review.
- ✓ 7. Milestone T415 report: submitted 5/9/89.
8. Milestone T421 report: resubmitted 6/2/89 with response to Project Office review.
9. Milestone T422 report: submitted 6/2/89.
10. Milestone T414 report: resubmitted 6/27/89 with response to Project Office review.
11. Milestone T419 report: resubmitted 6/28/89 with response to Project Office review.
12. Book contributions: B. Crowe, "GSA Field Trip Segment: Lathrop Wells Volcanic Center" and "GSA Field Trip Segment: Crater Flats": submitted 4/27/89.
13. Abstract: A. E. Norris, "³⁶Cl Studies at Yucca Mountain": submitted 7/28/89.
14. Abstract: A. E. Norris, "³⁶Cl Studies for a Nuclear Waste Repository in Nevada": submitted 7/28/89.

TECHNICAL DATA MANAGEMENT SYSTEM SUBMITTAL RECORD

N-AD 035
11/86

TITLE OF DOCUMENT	DESCRIPTION OF DATA OR INFORMATION	AUTHOR OR PRINCIPAL INVESTIGATOR	DATE PUBLISHED	QUALITY ASSURANCE LEVEL	TECHNICAL DATA MANAGEMENT SYSTEM COMPONENT (INDICATE BY "X")				DATE OF SUBMITTAL
					TRC	SEPD	KIS	RIB	
NO DATA WERE	SUBMITTED THIS MONTH								

YMP MONTHLY MILESTONE STATUS REPORT

ATTACHMENT 1

08/01/89

LOS ALAMOS NATIONAL LABORATORY

Number	LANL Proposed Date	CCB Baseline Date	MBS Element	Organization Responsible	Description Comments
=====					

FY89 Milestones - Level 1 Completed as of August 01, 1989

NONE

FY89 Milestones - Level 2 Completed as of August 01, 1989

T478	12/15/84	12311A	N-5	Prototype Test Plans, Volume 2 (FY-89 Funded Tests)	This milestone is the other part of milestone T435 (Volume 1). The schedulers are incorrectly using M253 for Volume 2. This milestone should not be confused with M105, which is the submission of the prototype test plans for review. M105 is completed. The report entitled "Prototype Test Plans, Volume 2 (FY-89 Funded Tests)" was completed and sent to the Project Office for policy review on 12/15/88, ref. TNS-N5-12-88-034.
T404	09/28/88	1232312A	ESS-1	Progress Report on Rock-Varnish Work	Report entitled "Progress Report on Rock-Varnish Work" was completed and sent to the Project Office for policy review on 11/16/88, ref. TNS-N5-10-88-046.
T414	02/28/89	123363A	ESS-1	Final Dust Hazard Assessment Report	Report entitled "Evaluation of Dust-Related Health Hazards Associated with Air Coring at 6-Tunnel, Nevada Test Site" was completed and sent to the Project Office for review on 04/14/89, ref. TNS-N5-04-89-055.
T415	12/16/88	123363A	ESS-1	Final Drilling and Technology Report	The final report draft of the Prototype Air Coring Test was completed and sent to the Project Office on 01/17/89, ref. TNS-ESS-1-1/89-11. Report entitled "The Yucca Mountain Project Prototype Air-Coring Test, U12g Tunnel, Nevada Test Site" was sent to the Project Office for policy review on 05/09/89, ref. TNS-N5-89-045.
M367	11/17/88	123414A	INC-11	Interim Progress Report on Colloid Stability	Report entitled "Interim Progress Report on Colloid Stability: Voltammetric Studies of the Redox Reactivity of Plutonium (IV) Colloid" was completed and sent to the Project Office for policy review on 12/12/88, ref. TNS-N5-12-88-033.
P378	11/17/88	123414A	INC-11	Progress Report: Photoacoustic Spectroscopy Methodology (PAS)	Report entitled "Photoacoustic Spectroscopy Methodology" was completed and submitted to the Project Office for policy review on 01/18/89, ref. TNS-N5-01-89-058.

YMP MONTHLY MILESTONE STATUS REPORT

ATTACHMENT 1
08/01/89

LOS ALAMOS NATIONAL LABORATORY

Number	Proposed Date	LANL Baseline Date	CCB WBS Element	Organization Responsible	Description Comments
T418	11/30/88		123414A	INC-11	Letter Report: Progress Report on Solubility Measurements Report entitled "Letter Report: Progress Report on Solubility Measurements" was completed and sent to the Project Office for policy review on 11/28/88, ref. TWS-N5-11-88-069. The report was approved for publication by the Project Office on 05/09/89, ref. TWS-N5-05-89-047.
R505	11/25/88		123415A	INC-7	Summary Report: Sorption of Nickel and Neptunium in Tuff Using Groundwaters of Different Composition Milestone completed on 10/21/88 and the report entitled "Sorption of Nickel and Neptunium in Tuff using Groundwaters of Various Compositions" was sent to the Project Office, ref. TWS-N5-10-88-050.
R720	11/01/88		123415A	INC-7	Issue Report on Deconvolution of Ion-Exchange Isotherms Report entitled "Deconvolution of Ion-Exchange Isotherms" was reviewed, and a copy of the revised paper was sent to the Project Office on 02/17/89, ref. TWS-N5-02-89-058.
T421	12/15/88		123417A	ESS-5	TRACR30 Documentation for Baseline Version Report entitled "TRACRN 1.0: A Model of Flow and Transport in Porous Media for the Yucca Mountain Project - Model Description and User's Manual" was completed and sent to the Project Office for policy review on 12/12/88, ref. TWS-N5-12-88-032.
T424	02/28/89		123417A	ESS-5	Interim Report: Letter Report on Particulate Transport Report entitled "Interim Report on Particle Transport" was completed and sent to the Project Office for policy review on 02/24/89, ref. TWS-N5-02-89-072. The report was approved for publication by the Project Office on 05/09/89, ref. TWS-N5-05-89-048.
T426	11/25/88		123418A	ESS-4	FRACNET - Fracture Network Model For Water Flow and Solute Transport Milestone completed on 10/25/88. A policy review conducted on report entitled "FRACNET - Fracture Network Model for Water Flow and Solute Transport" was sent to the Project Office, ref. TWS-N5-10-88-059.
T207	11/30/88		123422A	ESS-1	Dating Zeolitization at Yucca Mountain with Tectonic and Structural Data Report entitled "Dating Zeolitization at Yucca Mountain with Tectonic and Structural Data" was completed and sent to the Project Office for policy review on 12/01/88, ref. TWS-N5-12-88-003.
T095	11/30/88		123423A	ESS-1	Issue Report: Statistical Test of Repeatability and Operator Variance on Modal Analysis Report entitled "Status of Image Analysis Methods to Delineate Stratigraphic Position in the Topopah Spring Member of the Paintbrush Tuff, Yucca Mountain, Nye County, Nevada" was completed and sent to the Project Office for policy review on 12/23/88, ref. TWS-N5-12-88-072. The report was approved for publication by the Project Office on 5/25/89, ref. TWS-N5-05-89-140.

YMP MONTHLY MILESTONE STATUS REPORT

ATTACHMENT 1

08/01/89

LOS ALAMOS NATIONAL LABORATORY

Number	LANL Proposed Date	CC8 Baseline Date	WBS Element	Organization Responsible	Description Comments
T469	02/28/89		123423A	ESS-1	Issue Report on Erionite Abundances at Yucca Mountain. Report entitled "The Occurrence and Distribution of Erionite at Yucca Mountain, Nevada" was completed and sent to the Project Office for policy review on 02/14/89, ref. TNS-N5-02-89-045.
R321	12/23/88		123431A	WX-4	Complete Design of the Exploratory Shaft Water Tracer System Demonstrated to H&N use of the equipment and provided drawings to H&N. No further action is required. This milestone was completed on 03/09/89, ref. TNS-ESS-LY-1-03-89-17.
T163	11/30/88		12611A	WX-4	Revised NNWSI 'White Paper' on 'ES Fluids and Materials Usage' Delivered to NMPO. Report entitled "Nevada Nuclear Waste Storage Investigations Exploratory Shaft Facility and Materials Evaluation" was completed and sent to the Project Office on 12/15/88, ref. TNS-N5-12/88/043.

YMP MONTHLY MILESTONE STATUS REPORT

ATTACHMENT 1

08/01/89

LOS ALAMOS NATIONAL LABORATORY

Number	Proposed Date	LANL Baseline Date	CCB New WBS Element	Organization Responsible	Description Comments
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FY89 Level 1 Open Milestone List

NONE

FY89 Level 2 Open Milestone List

New WBS Number 1.2.3

M287	09/01/89	1231	ESS1/MX	Compile Draft ES Test Procedures (Construction Phase) Precursor to M651.
N160	07/31/89	1234	N-5	SCP Progress Report: Results of Geochemistry Investigations All geochemistry input to the progress report (SPR) has been submitted to the DOE/YMP for review. The action for this milestone is concluded. This milestone N160 is completed.
R705	06/30/89	1232122	INC-7	Issue Letter Report: Thermodynamics and Kinetics of Phases Important to Silica Activity at Yucca Mountain
T535	04/17/89	123411	HSE-12	Study Plan Approved (Ground Water Chemistry Model)

New WBS Number 1.2.5

T001	03/15/89	12522	N-5	Submit draft ongoing Geochemistry Test Program Study Plans to YNPO for review. Will be completed when all study plans are submitted to the Project Office.
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New WBS Number 1.2.6

M567	02/24/89	12684	WX-4	IDS Phase 1 Final Design Issued Review completed.
T062	01/10/89	12684	WX-4	IDS Phase 2 Final Design Issued. Delayed due to fully qualified QA program effort.
T436	06/08/88	12684	WX-4	IDS Development System - Status Report #1
T437	06/10/88	12684	WX-4	IDS Phase 1 Software - Interim Design Report #1

YMP MONTHLY MILESTONE STATUS REPORT

ATTACHMENT 1

08/01/89

LOS ALAMOS NATIONAL LABORATORY

Number	LANL Proposed Date	CCB Baseline Date	New WBS Element	Organization Responsible	Description Comments
T438	10/17/88		12684	WX-4	IDS Phase 1 & 2 Facilities - Detailed Requirements
T439	10/17/88		12684	WX-4	IDS Phase 1 Hardware - Interim Design Report
T440	10/17/88		12684	WX-4	IDS Phase 1 Software - Interim Design Report #2
T443	02/01/89		12684	WX-4	IDS Phase 2 Hardware - Interim Design Report
T444	02/01/89		12684	WX-4	IDS Development System - Status Report #2
T445	05/01/89		12684	WX-4	IDS Phase 1 Software - Validation and Verification Report
T446	05/01/89		12684	WX-4	IDS Phase 1 Hardware - Acceptance Test Report
T447	05/01/89		12684	WX-4	IDS Phase 2 Software - Interim Design Report #1
T448	09/01/89		12684	WX-4	IDS Phase 2 Software - Interim Design Report #2

ASSUMPTIONS:

ES start date 11/88

WBS Structure baseline 7/22/88

Prep: 08/01/89

A. Pratt

DISTRIBUTION:

J.A. Canepa, N-5, J521

H.N. Kalia, ESS-1, J900/527

R.L. Byers, N-5, J521

D.T. Oakley, N-5, J521

K.A. West, N-5, J521

JULY PROGRESS REPORT

**YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: LANL
31 July 1989**

SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	PROJ RESP	LEV	MILESTONE NUMBERS	PROJ/HQ DATE	ACTUAL DATE TO PROJ	PENDING C/SCR #	COMMENT
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NO. MILESTONES IN THIS SECTION: 0

JULY PROGRESS REPORT

YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: LANL
31 July 1989

SIGNIFICANT MILESTONES OPEN

PROJ RESP LEV

MILESTONE
NUMBERS

PROJ/HQ
DATE

FORECAST DATE
TO PROJ

PENDING COMMENT
C/SCR #

NO. MILESTONES IN THIS SECTION: 0

JULY PROGRESS REPORT

YUCCA MOUNTAIN PROJECT
 MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
 RESPONSIBILITY CODE: LANL
 31 July 1989

KEY MILESTONES UPCOMING - NEXT THREE MONTHS	PROJ RESP	LEV	MILESTONE NUMBERS	PROJ/HQ DATE	FORECAST DATE TO PROJ	PENDING C/SCR #	COMMENT
WBS: 1.2.3.1.1.A							
Compile Draft ES Test Procedure (Construction Phase)	Girdley	2	M287 (P)	29 Sep 89		87/169	MAY BE Delayed DUE TO THE delay IN THE START OF THE ES
WBS: 1.2.3.4							
Submit Draft Geochemistry Test Program Study Plans to YMPO for Review	Blanchard	2	T001 (P)	25 Aug 89			ON SCHEDULE
WBS: 1.2.3.4.3.1.A							
Complete Design of the Exploratory Shaft Water Tracer System	Robson	2	R321 (P)	29 Sep 89			ON SCHEDULE
WBS: 1.2.6.8.2.3.A							
IDS Phase 1 Final Design Issued	Waters	2	M667 (P)	30 Sep 89		87/171	UNDER REVIEW, MAY BE DELAYED FROM THE BASELINE
NO. MILESTONES IN THIS SECTION: 4							

JULY PROGRESS REPORT

YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: T&MSS/LAN
31 July 1989

SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	PROJ RESP	LEV	MILESTONE NUMBERS	PROJ/HQ DATE	ACTUAL DATE TO PROJ	PENDING C/SCR #	COMMENT
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NO. MILESTONES IN THIS SECTION: 0

JULY PROGRESS REPORT

YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: T&MSS/LAN
31 July 1989

SIGNIFICANT MILESTONES OPEN

PROJ RESP

LEV

MILESTONE
NUMBERS

PROJ/HQ
DATE

FORECAST DATE
TO PROJ

PENDING
C/SCR #

COMMENT

NO. MILESTONES IN THIS SECTION: 0

YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: T&SS/LAN
31 July 1989

KEY MILESTONES UPCOMING - NEXT THREE MONTHS	PROJ RESP	LEV	MILESTONE NUMBERS	PROJ/HQ DATE	FORECAST DATE TO PROJ	PENDING C/SCR #	COMMENT
WBS: 1.2.9.3							
Project Completes LANL QA Program Qualification Audit	Blaylock	1	T499 (P)	01 Sep 89	15 Sep 89		DELYED DUE TO SCHEDULE LAG CONSTRAINTS

NO. MILESTONES IN THIS SECTION: 1

JULY PROGRESS REPORT

YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: YMP/LANL
31 July 1989

SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	PROJ RESP	LEV	MILESTONE NUMBERS	PROJ/HQ DATE	ACTUAL DATE TO PROJ	PENDING C/SCR #	COMMENT
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NO. MILESTONES IN THIS SECTION: 0

JULY PROGRESS REPORT

YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: YMP/LANL
31 July 1989

SIGNIFICANT MILESTONES OPEN

PROJ RESP LEV

MILESTONE
NUMBERS

PROJ/HQ
DATE

FORECAST DATE
TO PROJ

PENDING
C/SCR #

COMMENT

NO. MILESTONES IN THIS SECTION: 0

JULY PROGRESS REPORT

YUCCA MOUNTAIN PROJECT
MILESTONE WORKSHEET FOR MONTHLY STATUS REPORT FOR JULY 1989
RESPONSIBILITY CODE: YMP/LANL
31 July 1989

KEY MILESTONES UPCOMING - NEXT THREE
MONTHS

PROJ RESP' LEV

MILESTONE
NUMBERS

PROJ/HQ
DATE

FORECAST DATE
TO PROJ

PENDING
C/SCR #

COMMENT

NO. MILESTONES IN THIS SECTION: 0