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

JAN 26 1988

102.8

NOTE TO: File HLWM ~~A06~~

THRU: B. J. Youngblood, Chief
Operations Branch, DHLWM

FROM: John J. Linehan, Section Leader
Projects Section
Operations Branch, DHLWM

SUBJECT: JANUARY 15, 1988 DOE-NRC MANAGEMENT MEETING

ATTENDEES: See Attached List

The purpose of the meeting was twofold:

1) OpportunitY for Carl Gertz, Project Manager NNWSI Project Office, to meet NRC team reviewing CDSCP.

2) NRC and DOE management discussion on schedules for submission of Study Plans and QA Audits.

The first part of the meeting consisted of an introduction of NRC team members reviewing the CDSCP and their section leaders. Team members discussed concerns and observations regarding the NNWSI Project. However, no discussions related to the CDSCP, since the staff is presently in the process of reviewing the document. The main points raised by team members included: lack of timely availability of USGS reports and data; no substantive technical interactions in tectonics since '84 and the need for a geology field introduction by the USGS; NRC observation of ESF design reviews; need for better focused meetings with fewer people; need for better follow-up on meeting commitments; disconnect between modelers/performance assessment and hydrologists; offer to brief DOE and the State on NRC research and technical assistance activities; and need for more technical interactions. C. Gertz was responsive to the staff's points and indicated he would look into them. R. Stein indicated that the staff's concern about untimely release of USGS data and reports could possibly be resolved by making drafts available for review in USGS Reston, VA offices. C. Gertz also discussed the NNWSI project organization and contractors (see attachments) and provided the following schedule information: SCP, Dec. '88-Jan. '89; start of ESF June-Sept. '89; and License Application, Jan. 95.

The team session was followed by a brief meeting with NRC OGC attorneys. After introductions and a discussion on OGC activities, W. Olmstead discussed the critical importance of the Licensing Support System in the hearing process.

The final session consisted of discussion by NRC and DOE management on QA Audits, Study Plans, On-site Technical Reviews and Workshops on the CDSCP.

delete all distribution except: CF

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NHYL

- QA Audits - DOE committed to provide NRC a list of audits and schedules by Jan. 20, 1988. DOE will also comment on NRC's "Protocol for observation Audits."

- Study Plans - DOE will be issuing 107 Study Plans; there will be four to six Study Plans for 1988 surface field activities. DOE expects to submit the first Study Plan in February and the first field activity should start in mid-summer. DOE will provide NRC with a schedule for all Study Plans by Jan. 29, 1988. DOE provided a draft listing of Study Plans (attached) in the meeting, however the dates are not current.

- Workshops - NRC indicated that we would be in a position to discuss the need for and scheduling of any workshops in mid-February once NRC staff had any opportunity to review the CDSCP. DOE provided an agenda for the Jan. 28-29, 1988 Plenary Workshop (attached).

- On-site Technical Reviews - NRC and DOE agreed on a tentative date, the week of Feb. 29, 1988, for an on-site NRC review of DOE seismic monitoring activities, including a visit to USGS offices in Denver, CO.

John J. Linehan, Section Leader
Projects Section
Operations Branch, DHLWM

Enclosures:
As stated

cc: R. Loux, State of Nevada
J. Gorn, OCA
S. Kale, DOE-HQ
C. Gertz, DOE-NV

NOTE TO FILE 406

JAN 26 1988

NOTE TO: File HLWM 406

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Operations Branch, DHLWM

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Projects Section
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/s/

John J. Linehan, Section Leader
Projects Section
Operations Branch, DHLWM

Enclosures:
As stated

cc: R. Loux, State of Nevada
J. Gorn, OCA
S. Kale, DOE-HQ
C. Gertz, DOE-NV

NOTE TO FILE 406

OFFICICAL CONCURRENCE AND DISTRIBUTION RECORD

NOTE TO: File HLWM ~~406~~ 102.8

THRU: B. J. Youngblood, Chief
Operations Branch, DHLWM

FROM: John J. Linehan, Section Leader
Projects Section
Operations Branch, DHLWM

SUBJECT: JANUARY 15, 1988 DOE-NRC MEETING

DATE: JAN 26 1988

DISTRIBUTION

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CONCURRENCES

ORGANIZATION/CONCUREE	INITIAL	DATE
HLOB/ JJLinehan:vgk		01/26/88
HLOB/ BJYounblood		01/26/88

1/15 NRC-DOE MEETING ATTENDEES

JOHN LINEHAN	NRC	PROJECT SECTION LEADER
Daniel GALSON	NRC	NNWSI Team Lead Performance Assessment
David Brooks	NRC	Geochemistry Section Leader
John TAPP	NRC	Geology
James Donnelly	NRC	Quality Assurance
John Bradbury	NRC	Geochemistry
PAUL BEMBIA	NRC	Geochemistry
John Peshel	NRC	Design / Rock. Mech.
Bill Ford	NRC	geohydrology
Tom NICHOLSON	USNRC/RES	Hydrogeology
Charlotte Abrams	NRC	Geology
Keith McConnel	NRC	Tectonics
DINESH GUPTA	NRC	Design / Rock Mechanics
Jim Kennedy	NRC/HLWM	Section Leader, QA
Bob Neel	NRC/HLOB	Precloure, CO
Mysore (Raj) Nataraja	NRC/HLTR	Rock Mechanics/Design.
RE Browning	NRC	
Frank A. Costanzo	NRC/RES	Chief, Waste Mgmt Branch
Donald L. Chery Jr.	NRC/HLWTR	Hydrology, Section Leader
RICK WELLER	NRC/HLTR	MATERIALS SECTION LEADER
Emmy Bagy	NRC/RES	Materials Scientist
Mike Bell	NRC/HLWM	
Ralph Stein	DOE/HQ	OGR
CARL P. GERTZ	DOE/NV	PROJ. MGR.
King Stablein	NRC/NMSS/HLOB	Proj Mgr.
Chip CAMERON	NRC/OGC	

1/15 NRC/DOE MEETING ATTENDEES (CONTINUED)

W. OLMSTEAD	NRC/OGC
S. TROBY	NRC/OGC
B.J. YOUNGBLOOD	NRC/HLOB
R. BALLARD	NRC/HLTR
S. KALE	DOE/HQ

Proposed Agenda

1/14/88

WORKSHOP ON THE CONSULTATION DRAFT SCP
FOR THE YUCCA MOUNTAIN SITE, NEVADA

January 28-29, 1988*

Thursday, January 28, 1988

General Information Briefing

8:30 - 8:40 a.m.	Opening Session	Moderator
8:40 - 9:00 a.m.	Welcome and Overview	S. Kale
9:00 -10:00 a.m.	Meeting Objectives, SCP Consultation Process, and Activities Leading to SCP Issuance	R. Stein
10:00 -10:15 a.m.	BREAK	
10:15 -11:00 a.m.	Background, Organization and Preparation of SCPs	C. Hanlon
11:00 -12:00 a.m.	Overview of Issues Hierarchy and Issue Resolution Strategy	D. Alexander
12:00 - 1:30 p.m.	LUNCH	

Overview of the Site Characterization Program - Chapter 8

1:30 - 2:00 p.m.	Yucca Mountain Site Top Level Strategy	C. Gertz
2:00 - 3:00 p.m.	Implementation of the Issue Resolution Strategy for the Yucca Mountain Site	T. Hunter
3:00 - 3:15 p.m.	BREAK	
3:15 - 4:15 p.m.	Overview of Site Characterization Program	M. Blanchard
4:15 - 4:45 p.m.	Discussion/Question Period	
4:45 - 5:15 p.m.	Presentation of Proposed Workshop Schedule and Topics	C. Gertz

Friday, January 29, 1988

General Session (cont'd)

8:30 - 9:00 a.m.	— Introduction to Day 2	Moderator
9:00 -10:30 a.m.	— Discussions on EMTP, ERCP, EPP, EFAPs, and SMMP	J. Parker J. Breesee
10:30 -11:00 a.m.	— BREAK	
11:00 -12:00 a.m.	— Discussions (cont'd)	
12:00 - 2:00 p.m.	— LUNCH (Lunch and preparation of written observations by participants, to be submitted by 2:00 p.m. for incorporation in the meeting record)	

General Session Close-out

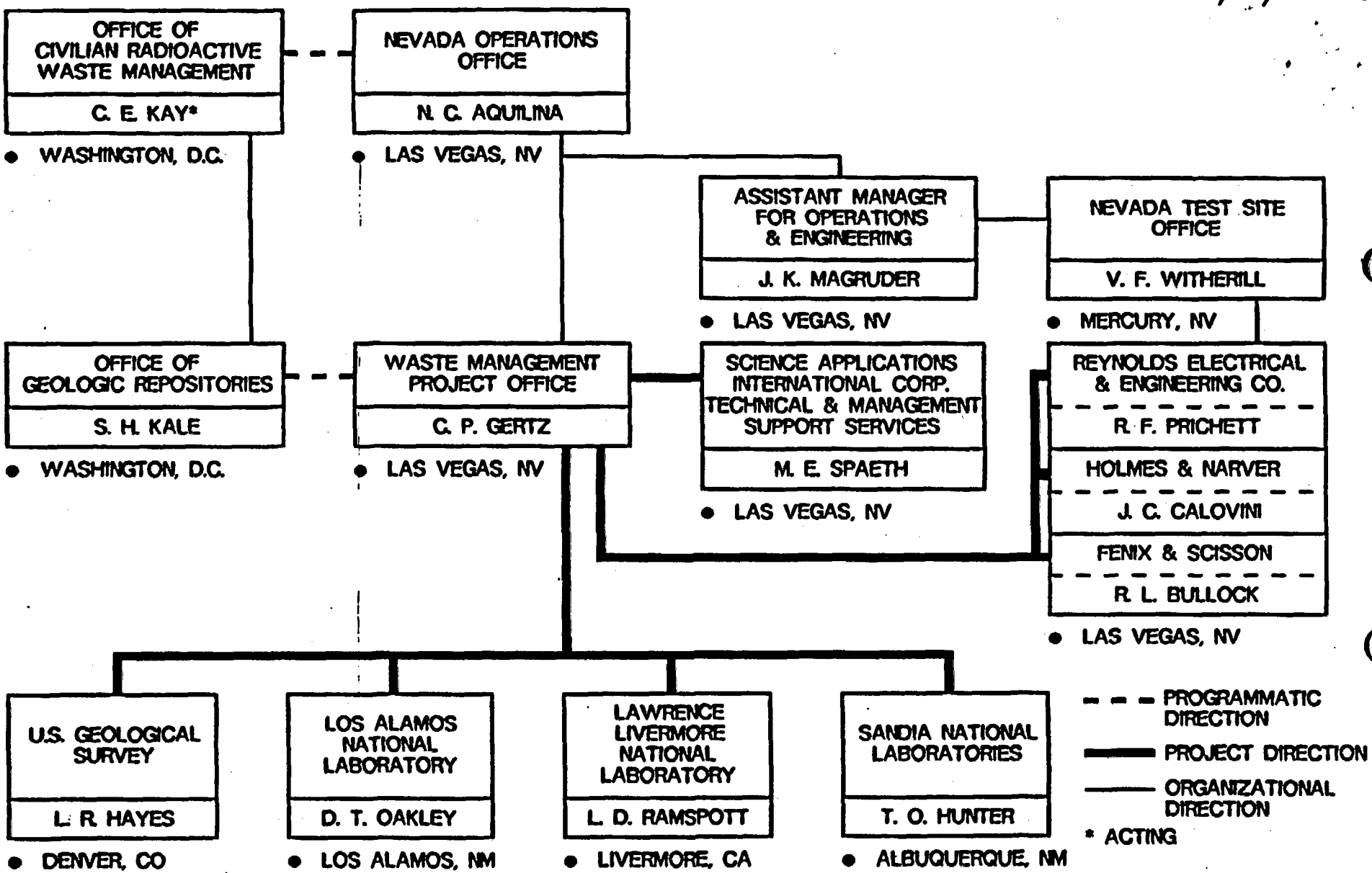
2:00 - 3:00 p.m.	— General Observations and Closing Remarks	All Participants
3:00 - 4:00 p.m.	— Complete Record and Summary for General Session	

Optional Breakout Session - SCP/CD Information Session

9:00 - 4:00 p.m.	— Provide discussion of SCP Readers Guide	

NNWSI PROJECT ORGANIZATION

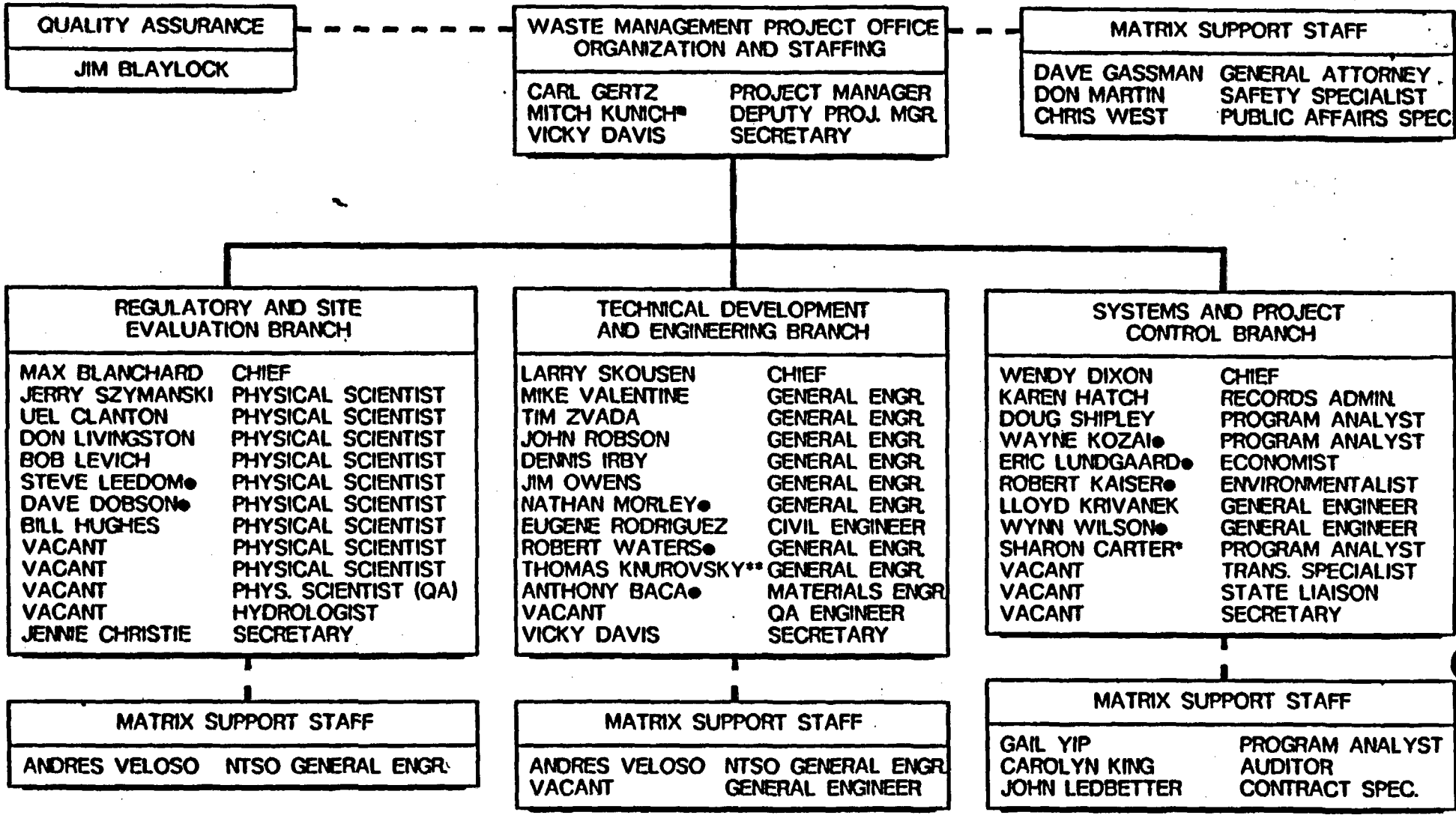
CARL GERTZ 1/15/88



Nevada Nuclear Waste Storage Investigations Project

12/14/87 — NOTE: ALL THESE CHARTS WERE PREPARED PRIOR TO NWPA AMENDMENTS OF '87

WMPO ORGANIZATION



Waste Management Project Office

NNWSI PROJECT FY 1987

[WMPO.ORG·9/28/87]

NNWSI PROJECT CONTRACTORS AND SCOPE OF WORK

USGS

- GEOLOGIC AND HYDROLOGIC EXPLORATION AND DATA ANALYSIS

LOS ALAMOS

- GEOCHEMICAL, MINERALOGIC AND PETROGRAPHIC PROPERTIES OF HOST ROCK, VOLCANISM STUDIES, COORDINATION OF EXPLORATORY SHAFT TEST PLAN

LLNL

- WASTE PACKAGE DESIGN, TESTING AND ANALYSIS, AND SPENT FUEL TEST AT CLIMAX

NNWSI PROJECT CONTRACTORS AND SCOPE OF WORK

SNL

- THERMAL AND MECHANICAL PROPERTIES OF HOST ROCK, CONCEPTUAL DESIGN OF REPOSITORY, PERFORMANCE ASSESSMENT OF SYSTEM, DEVELOPMENT OF SEALS FOR REPOSITORY, EQUIPMENT DEVELOPMENT

H&N

- SITE PREPARATION FOR DRILLING, EXPLORATORY SHAFT, SURFACE FACILITIES DESIGN, SURVEYING

EG&G

- ENVIRONMENTAL STUDIES AT SITE

NNWSI PROJECT CONTRACTORS AND SCOPE OF WORK

REECo

- NTS SUPPORT SERVICES INCLUDING CONSTRUCTION, MINING, DRILLING, ROADS, TRENCHING, RADIOLOGICAL MONITORING

F&S

- MINING AND DRILLING ENGINEERING, FIELD GEOLOGY SUPPORT TO USGS, AND SUBSURFACE EXPLORATORY SHAFT DESIGN

SAIC

- TECHNICAL AND MANAGEMENT SUPPORT SERVICES INCLUDING REPORTING, SCHEDULING, LICENSING, PROJECT QUALITY ASSURANCE, AND WBS 1.2.3 INTEGRATION

UNIVERSITY OF NEVADA

- ARCHAEOLOGICAL STUDIES AT SITE

UNCLASSIFIED

OUTGOING FACSIMILE TRANSMITTAL

MACHINE FTS 575-8907 OR 575-8908

VERIFICATION FTS 575-8919

LAS VEGAS, NV

FROM: Dave Dobson

WMPO

DOE/NV

TO: Carl Gertz

TO:

TO:

TO:

TO:

TO:

TO:

TO:

COMMENTS: Enclosed is a study plan schedule with SCP number, title, category (1=ESF construction phase, 2=1ST year, 3=out year, 4=ongoing) and submission date to WMPO. There is more to follow (a graphical summary showing the schedule) Sorry for the delay; all our fax lines are out.

NUMBER OF PAGES, EXCLUDING COVER SHEET

SIGNATURE DATE TIME

(2)

Study plan number[a]	Study plan title[b]	Category	Schedule
	GEOHYDROLOGY PROGRAM		
8.3.1.2.1.1	Characterization of Meteorology for Regional Hydrology	4	TBD
8.3.1.2.1.2	Characterization of Runoff and Streamflow	4	TBD-88
8.3.1.2.1.3	Characterization of the Regional Ground-Water Flow System	4	TBD-88
8.3.1.2.1.4	Regional Hydrologic System Synthesis and Modeling	2	TBD-88
8.3.1.2.2.1	Characterization of Unsaturated Zone Infiltration	4	TBD-88
8.3.1.2.2.2	Water Movement Tracer Tests Using Chloride and Chlorine-36 Measurements of Infiltration at Yucca Mountain	1	9-24-87
8.3.1.2.2.3	Characterization of Percolation in the Unsaturated Zone - Surface-Based Study	1	TBD-88
8.3.1.2.2.4	Characterization of Yucca Mountain Percolation in the Unsaturated Zone - Exploratory Shaft Facility Investigations	1	9-11-87
8.3.1.2.2.5	Diffusion Tests in the Exploratory Shaft Facility	2	TBD-88
8.3.1.2.2.6	Characterisation of Flux within the Paintbrush Nonwelded Unit in the vicinity of the Ghost Dance Fault	2	10-01-89
8.3.1.2.2.7	Characterization of Gaseous-Phase Movement in the Unsaturated Zone	4	TBD-88
8.3.1.2.2.8	Hydrochemical Characterization of the Unsaturated Zone	4	TBD-87

(3)

Study plan number[a]	Study plan title[b]	Category	Schedule
	GEOHYDROLOGY PROGRAM (continued)		
8.3.1.2.2.9	Unsaturated Zone Flow and Transport Modeling	2	TBD-88
8.3.1.2.2.10	Unsaturated Zone System Analysis and Integration	2	TBD-88
8.3.1.2.3.1	Characterisation of the Site Saturated Zone Ground-Water Flow System	4	TBD-88
8.3.1.2.3.2	Characterisation of the Site Saturated Zone Hydrochemistry	2	01-01-89
8.3.1.2.3.3	Saturated Zone Hydrologic System Synthesis and Modeling	2	02-01-89
	GEOCHEMISTRY PROGRAM		
8.3.1.3.1.1	Ground-Water Chemistry Model	3	TBD
8.3.1.3.2.1	Three-Dimensional Mineral Distribution at Yucca Mountain	4	01/88
8.3.1.3.2.2	History of Mineralogic and Geochemical Alteration of Yucca Mountain	4	01-21-88
8.3.1.3.3.1	Natural Analog of Hydrothermal Systems in Tuff	3	TBD
8.3.1.3.3.2	Kinetics and Thermodynamics of Mineral Evolution	4	01-29-88
8.3.1.3.3.3	Conceptual Model of Mineral Evolution	4	01-29-88
8.3.1.3.4.1	Batch Sorption Studies	4	02-04-88
8.3.1.3.4.2	Biological Sorption and Transport	4	01-22-88

Study plan number[a]	Study plan title[b]	Category	Schedule
	GEOCHEMISTRY PROGRAM (continued)		
8.3.1.3.4.3	Development of Sorption Models (Isotherms)	4	02-04-88
8.3.1.3.5.1	Dissolved Species Concentration Limits	4	01-21-88
8.3.1.3.5.2	Colloid Behavior	4	01-21-88
8.3.1.3.6.1	Dynamic Transport Column Experiments	4	01-30-88
8.3.1.3.6.2	Diffusion	4	01-30-88
8.3.1.3.7.1	Retardation Sensitivity Analysis	4	02-06-88
8.3.1.3.7.2	Demonstration of Applicability of Laboratory Data to Repository Transport Calculations	3	TBD
8.3.1.3.8.1	Gaseous Radionuclide Transport Calculations and Measurements	3	TBD
	ROCK CHARACTERISTICS PROGRAM (POSTCLOSURE)		
8.3.1.4.2.1	Characterization of the Vertical and Lateral Distribution of Stratigraphic Units Within the Site Area	2	TBD-88
8.3.1.4.2.2	Characterization of the Structural features within the Site Area	4	8-11-87
8.3.1.4.2.3	Three-Dimensional Geologic Model	2	08-01-89
8.3.1.4.3.1	Systematic Acquisition of Site-Specific Subsurface Information	3	TBD

Study plan number[a]	Study plan title[b]	Category	Schedule
	ROCK CHARACTERISTICS PROGRAM (POSTCLOSURE) PROGRAM (continued)		
8.3.1.4.3.2	Three-Dimensional Rock Characteristics Models	3	12-01-88
	CLIMATE PROGRAM		
8.3.1.5.1.1	Characterization of Modern Regional Climate	2	TBD-88
8.3.1.5.1.2	Paleoclimate Study: Lake, Playa, Marsh Deposits	2	TBD-88
8.3.1.5.1.3	Climate Implications of Terrestrial Paleoecology	2	TBD-88
8.3.1.5.1.4	Analysis of the Paleoenvironmental History of the Yucca Mountain Region	2	TBD-88
8.3.1.5.1.5	Paleoclimate-Paleoenvironment Synthesis	3	01-01-89
8.3.1.5.1.6	Characterization of the Future Regional Climate and Environments	3	09-01-89
8.3.1.5.2.1	Characterization of the Quaternary Regional Hydrology	4	TBD-88
8.3.1.5.2.2	Characterization of the Future Regional Hydrology due to Climate Changes	3	11-01-89
	EROSION PROGRAM		
8.3.1.6.1.1	Distribution and Characteristics of Present and Past Erosion	3	10/89

Study plan number[a]	Study plan title[b]	Category	Schedule
	EROSION PROGRAM (continued)		
8.3.1.6.2.1	Influence of Future Climatic Conditions on Locations and Rates of Erosion	3	10/89
8.3.1.6.3.1	Evaluation of the Effects of Future Tectonic Activity on Erosion at Yucca Mountain	3	11/89
8.3.1.6.4.1	Development of a Topical Report to Address the Effects of Erosion on the Hydrologic, Geochemical, and Rock Characteristics at Yucca Mountain	3	12/89
	TECTONICS PROGRAM (POSTCLOSURE)		
8.3.1.8.1.1	Probability of a Volcanic Eruption Penetrating the Repository	4	01-20-88
8.3.1.8.1.2	Effects of Volcanic Eruption Penetrating the Repository	4	01-20-88
8.3.1.8.2.1	Analysis of Waste Package Rupture due to Tectonic Processes and Events	3	TBD
8.3.1.8.3.1	Analysis of the Effects of Tectonic Processes and Events on Average Percolation Flux Rates Over the Repository	3	TBD
8.3.1.8.3.2	Analysis of the Effects of Tectonic Processes and Events on Changes in Water-table Altitude	3	TBD
8.3.1.8.3.3	Analysis of the Effects of Tectonic Processes and Events on Local Fracture Permeability and Effective Porosity	3	TBD

Study plan number[a]	Study plan title[b]	Category	Schedule
	TECTONICS PROGRAM (POSTCLOSURE) (continued)		
8.3.1.8.4.1	Analysis of the Effects of Tectonic Processes and Events on Rock Geochemical Properties	3	TBD
8.3.1.8.5.1	Characterisation of Volcanic Features	4	01-20-88
8.3.1.8.5.2	Characterisation of Igneous Intrusive Features	3	01-89
8.3.1.8.5.3	Investigation of Folds in Miocene and Younger Rocks of the Region	3	01-90
	HUMAN INTERFERENCE PROGRAM		
8.3.1.9.1.1	An Evaluation of Natural Processes That Could Affect the Long-Term Survivability of the Surface Marker System at Yucca Mountain	3	TBD
8.3.1.9.2.1	Natural Resource Assessment of Yucca Mountain, Nevada	2	TBD
8.3.1.9.2.2	Water Resource Assessment of Yucca Mountain, Nevada	2	TBD
8.3.1.9.3.1	Evaluation of Data Needed to Support an Assessment of the Likelihood of Future Inadvertent Human Intrusion at Yucca Mountain as a Result of Exploration and/or Extraction of Natural Resources	3	TBD
8.3.1.9.3.2	An Evaluation of the Potential Effects of Exploiting Natural Resources on the Hydrologic Characteristics at Yucca Mountain	3	TBD

Study plan number[a]	Study plan title[b]	Category	Schedule
	METEOROLOGICAL PROGRAM		
8.3.1.12.2.1	Meteorological Data Collection at the Yucca Mountain Site	4	01-29-88
	SURFACE CHARACTERISTICS PROGRAM		
8.3.1.14.2.1	Exploration Program	3	7-31-88
8.3.1.14.2.2	Laboratory Tests and Material Property Measurements	3	7-31-88
8.3.1.14.2.3	Field Tests and Characterization Measurements	3	7-31-88
	ROCK CHARACTERISTICS PROGRAM (PRECLOSURE)		
8.3.1.15.1.1	Laboratory Thermal Properties	2	3-1-88
8.3.1.15.1.2	Laboratory Thermal Expansion Testing	2	05-1-88
8.3.1.15.1.3	Laboratory Determination of Mechanical Properties of Intact Rock	4	2-1-88
8.3.1.15.1.4	Laboratory Determination of the Mechanical Properties of Fractures	2	5-1-88
8.3.1.15.1.5	Excavation Investigations	1	8-1-87
8.3.1.15.1.6	In Situ Thermomechanical Properties	3	8-1-88
8.3.1.15.1.7	In Situ Mechanical Properties	3	8-1-88

Study plan number[a]	Study plan title[b]	Category	Schedule
	ROCK CHARACTERISTICS PROGRAM (PRECLOSURE) (continued)		
8.3.1.15.1.8	In Situ Design Verification	3	5-15-88
8.3.1.15.2.1	Characterization of the Site Ambient Stress Conditions	1	9-24-88
8.3.1.15.2.2	Characterization of the Site Ambient Thermal Conditions	2	TBD-88
	PRECLOSURE HYDROLOGY PROGRAM		
8.3.1.16.1.1	Characterization of Flood Potential of the Yucca Mountain Site	4	TBD-88
8.3.1.16.2.1	Location of Adequate Water Supply for Construction, Operation, Closure, and Decommissioning of a Mined Geologic Disposal System at Yucca Mountain, Nevada	2	TBD
8.3.1.16.3.1	Determination of Preclosure Hydrologic Conditions of the Unsaturated Zone at Yucca Mountain, Nevada	3	1-1-90
	TECTONICS PROGRAM (PRECLOSURE)		
8.3.1.17.1.1	Potential for Ash Fall at the Site	2	TBD
8.3.1.17.2.1	Faulting Potential at the Repository	?	TBD
8.3.1.17.3.1	Relevant Earthquake Sources	2	TBD
8.3.1.17.3.2	Underground Nuclear Explosion Sources	4	TBD

Study plan number[a]	Study plan title[b]	Category	Schedule
	TECTONICS PROGRAM (PRECLOSURE) (continued)		
8.3.1.17.3.3	Ground Motion from Regional Earthquakes and Underground Nuclear Explosions	3	12-1-88
8.3.1.17.3.4	Effects of Local Site Geology on Surface and Subsurface Motions	2	1-1-89
8.3.1.17.3.5	Ground Motion at the Site from Controlling Seismic Events	2	2-1-89
8.3.1.17.3.6	Probabilistic Seismic Hazards Analyses	3	12-1-88
8.3.1.17.4.1	Historical and Current Seismicity	4	TBD
8.3.1.17.4.2	Location and Recency of Faulting Near Prospective Surface Facilities	2	4-1-88
8.3.1.17.4.3	Quaternary Faulting within 100 km of Yucca Mountain, Including the Walker Lane	2	TBD-88
8.3.1.17.4.4	Quaternary Faulting proximal to Site within Northeast-Trending Fault Zones	2	4-1-89
8.3.1.17.4.5	Detachment Faults at or proximal to Yucca Mountain	2	5-1-89
8.3.1.17.4.6	Quaternary Faulting within the Site Area	4	7-1-89
8.3.1.17.4.7	Subsurface Geometry and Concealed Extensions of Quaternary Faults at Yucca Mountain	2	8-1-89
8.3.1.17.4.8	Stress Field within and proximal to the Site Area	2	9-1-89

Study plan number[a]	Study plan title[b]	Category	Schedule
	TECTONICS PROGRAM (PRECLOSURE) (continued)		
8.3.1.17.4.9	Tectonic Geomorphology of the Yucca Mountain Region	2	10-1-89
8.3.1.17.4.10	Geodetic Leveling	4	TBD-88
8.3.1.17.4.11	Characterization of Regional Lateral Crustal Movement	2	10-1-89
8.3.1.17.4.12	Tectonic Models and Synthesis	3	1-1-90
	SHAFT AND BOREHOLE SEAL CHARACTERISTICS		
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[a]Study plan number corresponds to the SCP section number under which a discussion of the study is provided.

[b]Study plan title corresponds to the appropriate SCP section title.

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