



12 October 1987

David Tiktinsky - SS623
U.S. Nuclear Regulatory Commission
Division of Waste Management
Washington, D.C. 20555

"NRC Technical Assistance
for Design Reviews"
Contract No. NRC-02-85-002
FIN D1016

Dear David:

Enclosed is Itasca's trip report for participation in the U.S. DOE briefing summarizing the seismic/tectonic strategies presented in the consultation draft of the NNWSIP SCP (21-23 September) and the NNWSI Appendix 7 Site Visit (23-25 September) in Las Vegas. Please call me if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roger D. Hart".

Roger D. Hart
Project Manager

cc: R. Ballard, Engineering Branch
Office of the Director, NMSS
E. Wiggins, Division of Contracts
DWM Document Control Room

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ITASCA TRIP REPORT

DATE: 21 - 25 September 1987

LOCATIONS: U.S. Department of Energy, Nevada Operations Office, Waste Management Project Office; U.S. Nuclear Regulatory Commission, NNWSIP Site Office (Las Vegas, Nevada)

PURPOSE: To participate in DOE briefing summarizing the seismic/tectonic strategies presented in the consultation draft of the NNWSI Project Site Characterization plan (SCP).

Appendix 7 Site Visit; review of Fenix and Scisson studies for the Exploratory Shaft; review of the Holmes and Narver studies for the Exploratory Shaft; and review of the Draft Subsystem Design Requirements Report.

ATTENDEES: Itasca — J. Daemen and Loren Lorig

NRC — Charlotte Abrams, Michael Blackford, Dinesh Gupta, A. K. Ibrahim, John Linehan, Keith McConnell, John Peshel, and John Trapp

Weston Geophysical — Vincent Murphy

PREPARED BY: L. Lorig

SUMMARY

The trip to the Nevada Operations Office, Waste Management Project Office in Las Vegas had two purposes: to participate in a DOE briefing summarizing the seismic/tectonic strategies presented in the consultation draft of the NNWSI Project Site Characterization plan (SCP) and an Appendix 7 Site Visit (review of Fenix and Scisson studies for the Exploratory Shaft, review of the Holmes and Narver studies for the Exploratory Shaft, and review of the Draft Subsystem Design Requirements Report).

Specific Activities

- 21 September: Pre-meeting with NRC personnel at NRC's NNWSIP Site Office to discuss major comments to be presented at the DOE briefing (attended by L. Lorig)
- 22 September: Participation in the DOE briefing (attended by L. Lorig)
- 23 September: Participation in the DOE briefing; followed by the start of the Appendix 7 Review (attended by L. Lorig and J. Daemen)
- 24 September: Participation in the Appendix 7 Review (attended by L. Lorig and J. Daemen)
- 25 September: Participation in the Appendix 7 Review (attended by J. Daemen)

The pre-meeting material available for review consisted of a draft copy of the following:

- (1) Section 8.3.1.8, overview of the tectonics program
— description of future tectonic processes and events required by the performance and design issues.
- (2) Section 8.3.1.17, overview of pre-closure tectonics
— description of tectonics and igneous events required by performance and design requirements.

Review of pre-meeting materials resulted in generation of three main generic concerns by NRC staff geologists:

- (1) use of probabilistic vs deterministic methods;
- (2) rationale for numbers used as "goals"; and
- (3) quality assurance of existing data.

The DOE briefing consisted of the following parts:

- Introduction
 - M. Blanchard (DOE/WMPO)
- Site Characterization Overview
 - G. Frazier (SAIC)
- Geologic Setting of Yucca Mountain
 - K. Fox (USGS)
- Site Characterization Plan for Pre-Closure
 - J. King (SAIC)
- Site Characterization Plan for Post-Closure
 - T. Grant (SAIC)
- Concluding Comments
 - M. Blanchard (DOE/WMPO)

Each part was followed by questions and comments from the NRC and the State of Nevada.

The study plans available for review during the Appendix 7 Site Visit were:

H&N ¹	Special Study 1	Surface Site Layout (August 1987)
H&N	Special Study 3	Utilization of Off-Site A/E Bldg.
H&N	Special Study 5	Sanitary Waste Treatment
F&S ²	Study No. 1	ESF Development Study Report
F&S	Study No. 2	ESF Future 1400 Level Development
F&S	Study No. 3	ESF Excavation Methods
F&S	Study No. 4	ESF Controlled Blasting
F&S	Study No. 5	ESF Hoisting System (ES-1 & ES-2)
F&S	Study No. 6	ESF Ventilation
F&S	Study No. 7	Dust Abatement (NOT AVAILABLE)
F&S	Study No. 8	ESF Water and Waste Water Control
F&S	Study No. 9	ESF Compressed Air System

Exploratory Shaft Facility Subsystem Design Requirements
(Document and Appendices)

All of the documents were briefly examined. Fennix and Scisson Reports 1-4 and Holmes and Narver Study 1 were reviewed in greater detail.

¹H&H = Holmes and Narver

²F&S = Fennix and Scisson

CONCLUSIONS

The DOE briefing which summarized the seismic/tectonic strategies presented in the consultation draft of the NNWSI Project SCP was worthwhile and provided a valuable preview of the SCP. It was obvious from the pre-meeting material, and the briefing, that review of the SCP will be an extremely complex task because of extensive cross-referencing to other sections.

Overhead transparencies presented during the briefing contained significant new information not contained in the pre-meeting material. This caused some difficulty in understanding the material presented. Additionally, it appears that DOE has invented some new terms (e.g., "exceptional earthquake") and redefined some others (e.g., "important to safety", p. 8.3.1.17-30). This also may contribute to difficulty in providing a comprehensive review of the SCP.

The studies which were available for review during the Appendix 7 Visit were still in a preliminary stage and, therefore, no comments, conclusions, or recommendations are made for these studies.

RECOMMENDATIONS

A key reference in Section 8.3..1.8 appears to be Link et al. (1982). Reviewers of this section of the SCP should be familiar with this reference.

State of stress measurements should be reviewed to ensure consistency with orientation and strength of structural features.

Tectonics models should be reviewed mechanically, as well as conceptually, to ensure that required displacements are kinematically feasible. (See, for example, p. 83 of the meeting materials.)

REFERENCE

Link, R. L., S. E. Logan, H. S. Ng, F. A. Rockenback, and K. J. Hong. "Parametric Studies of Radioactive Consequences of Basaltic Volcanism," Sandia National Laboratories, SAND 81-2375, 1982.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Loren Lorig".

Loren J. Lorig

lj1/ks

COST BREAK-OUT

Labor

J. Daemen	24 hrs @ \$57.75/hr	\$ 1,386.00
L. Lorig	32 hrs @ \$21.15/hr	676.80
		<hr/>
	TOTAL LABOR	\$ 2,062.80

Actual Expenses

Travel

Airfare

Daemen (Tucson-Las Vegas-Tucson)	\$ 108.00
Lorig (Mpls-WDC-Mpls)	458.50

Miscellaneous Travel Expenses

Daemen (taxis)	24.00
Lorig (car rental, taxis)	211.59

Lodging

Daemen	
(2 nights at \$42.80/night)	85.60
(1 night at \$69.00/night)	69.00
Lorig	
(3 nights at \$69.00/night)	207.00

Meals

Daemen	99.00
Lorig	99.00

TOTAL EXPENSES:	\$ 1,361.69
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