PDR-1
LPDR- Wm-10 (2)
Wm-11 (2)
Wm-16 (2)

WM DOCKET CONTROL
CENTER

'87 MAY -4 A11:03

ITASCA
Consulting Group, Inc.

28 April 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 the 11-15 April 1987 meeting to discuss the proposed changes in the NNWSI ESF Program. Please call me if you have any questions.

Sincerely,

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

Encl.
rdh/ks

WM-Res
WM Record File
D1016
Itasca

WM Project 10, 11, 16
Docket No.
PDR ✓
LPDR ✓ (B, N, S)

Distribution:
T. Tiktinsky
(Return to WM, 623-SS)

3841

8705029 2 H

P.O. Box 14806 • Minneapolis, Minnesota 55414 • (612) 623-9599

ITASCA TRIP REPORT

DATES: 11-15 April 1987

LOCATION: U.S. Nuclear Regulatory Commission, NNWSIP Site Office (11-13 April) and SAI, Las Vegas, Nevada (14-15 April)

PURPOSE: technical meeting to discuss proposed changes in the NNWSI ESF program

ATTENDEES: J. Daemen and L. Lorig

PREPARED BY: L. Lorig

SUMMARY

A joint DOE/NRC/State of Nevada technical meeting was held at SAI's office in Las Vegas on 14 April 1987 to discuss proposed changes in the ESF program. The proposed changes were:

(1) relocation of the ESF exploratory shafts and surface facility approximately 440 feet to the northeast;

(2) relocation of the main test level from the 1200-foot level to approximately the 1020-foot level;

(3) construction of approximately 5600 linear feet of exploratory drifts to the fault areas (Ghost Dance Fault, Drill Hole Wash, and the Imbricate Normal Fault System);

(4) expansion of the main test level complex by approximately 2,500 linear feet of drifts; and

(5) increasing the second shaft (ES-2) from a 6-foot to a 12-foot inside finished diameter.

NRC indicated that the proposed changes represented an improvement over the previous plans. However, NRC identified certain analyses, information and construction procedures which should be provided in future submittals.

On 15 April, the meeting continued with DOE presenting a summary of the status of open items related to the ESF program. Both DOE and NRC indicated that responses to the open items would be provided by November 1987.

Prior to the actual meeting, NRC staff and consultants held a three-day (11-13 April) pre-meeting at NRC's Las Vegas Site office. Members of the group participating in the pre-meeting were D. Gupta and J. Peschel (NRC), D. Conover and K. Hanna (Bureau of Mines), and J. Daemen and L. Lorig (Itasca). S. Battacharya (Engineers International) joined the group on 12 April. Five additional NRC personnel [Charlotte Abrams (geologist), Jake Phillips (research), Paul Prestholt (site representative), and John Linehan and Keith Stablein (management)] joined the group on 13 April, as did two representatives from the State of Nevada (Jim Grubb and Carl Johnson). All participants in the pre-meeting attended the actual meeting on 14-15 April.

Purpose

The purpose of the trip was to reach agreement with DOE on the proposed changes in the ESF program and to review open items related to the ESF program.

Accomplishments

Short (about 1/2 page) position statements which detailed NRC comments were prepared by NRC for each of the five proposed changes. In addition, a position statement was prepared regarding the size (cross-sectional area) of exploratory drifts. These statements were included in the meeting minutes.

Problems Encountered

No significant problems were encountered. Some issues raised during discussion could not be fully addressed because the Site Characterization Plan (of which the ESF is part) had not been released.

One issue that NRC may need to study further relates to the size of exploratory drifts. DOE is proposing full-scale repository drifts for the exploratory drifts. While this size drift is preferable from a technical viewpoint, such excavation might be interpreted to be in violation of 10 CFR 60.3(b).

DOE is proposing extending the ES-1 into the Calico Hills geologic unit to perform hydraulic tests. In addition, DOE discussed the possibility of drilling or drifting to the Ghost Dance Fault from this lower level. The Calico Hills generally is regarded to be the main radionuclide migration barrier, and excavations to and within this unit may compromise its effectiveness in retarding radionuclide migration.

Previously, NRC (Ted Johnson) indicated that the 1/2-inch run-off from the ES drainage area could result in a four order of magnitude increase of water into the ES over the SNL 500-year flood scenario. DOE has indicated that a new performance analysis will be presented which takes into account the new shaft location. The proposed shaft collar is located at a lower elevation than the previous site and, therefore, a potential for fundamental disagreement between NRC and DOE still exists.

During the meeting, DOE indicated that the repository elevations (e.g., 1020 foot depth at ES-1) had been provisionally specified for the entire repository. In the short time available at the meeting and without detailed study, it was not clear what impact this choice has (i.e., how representative the 1020 level is of the conditions likely to be encountered in the remainder of the repository, if supporting thermomechanical calculations by SNL were representative of this horizon, etc.).

NRC noted that no drifting was planned to explore significant areas of the main repository block (i.e., to the west and south of the ES). DOE stated that exploration (surface-based) would be detailed in the SCP. The subject of exploration in the south and west was not specifically part of the agenda for this meeting and, therefore, was not discussed at length. Nevertheless, a potential problem may exist regarding the amount and type of exploration required to characterize the entire repository block, and specifically the southern and western portions.

Recommendations

In preparation for the SCP review, it would be desirable to have studied issues related to the following:

(1) size of drifts;

(2) excavations below the main test level (i.e., excavation below the main test level to the Calico Hills);

(3) flooding potential (long-term) at the proposed shaft site;

(4) selected repository horizon;

(5) exploration requirements to the south and west of the ES;

(6) mutual interference/interaction between construction of shaft 2 and measurements/monitoring in shaft 1 —in particular

  (a) avoidance of hydrological/geochemical interference (e.g., water introduced for dust control and drilling, blasting fumes) and

  (b) avoidance of vibrations effect, particularly blast vibration effects on instruments; and

(7) interference between exploratory drift construction, shaft 2 operations, and in-situ testing—

  (a) in the early phases, such as drift blasting (vibrations, fumes, water),

  (b) continuous events, such as muck hauling, dumping in the shaft pocket, etc.,

  (c) ventilation problems (air flow), and

  (d) overall concerns, such as sufficient separation between the test area and exploratory drifts and shaft(s).

Respectfully submitted,

Loren J. Lorig

ljl/ks

COST BREAK-OUT

Labor

Jaak Daemen	40 hrs @ $57.75/hr	2,310.00
Loren Lorig	47 hrs @ $21.15/hr	994.05
	TOTAL LABOR	$ 3,304.05

Actual Expenses

Travel

Airfare	
Daemen	138.00
Lorig	325.50
Miscellaneous Travel Expenses	
Daemen (car rental, parking)	146.81
Lorig (parking, mileage, taxi)	22.10

Lodging

Daemen	
(4 nights @ $48.15/night)	192.60
Lorig	
(1 night @ $123.05/night)	123.05
(3 nights @ $64.20/night)	192.60

Meals

Daemen	127.05
Lorig	102.70

Miscellaneous Expenses

Lorig (telephone)	12.03
TOTAL EXPENSES:	$ 1,382.44