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MEMORANDUM FOR: John Linehan, Project Director
Repository Licensing & Quality Assurance
Project Directorate
Division of High-Level Waste Management

FROM: Ronald L. Ballard, Chief
Geosciences & Systems Performance Branch
Division of High-Level Waste Management

SUBJECT: HYDROLOGIC TRANSPORT FIELD TRIP TO YUCCA MOUNTAIN SITE

As previously discussed, I request that Yucca Mountain visit be arranged for the staff of the Hydrologic Transport Section. A suggested timeframe for this trip is the week of May 14, 1989. The purpose of the trip is for section staff to acquire first-hand knowledge of site and regional hydrology (including geochemistry), with particular interest in instrumentation and data collection procedures. Attachment A lists hydrologic data collection facilities and locations that should be observed by the staff. Attachment B is a tentative itinerary for a four day field trip to Yucca Mountain. The tentative itinerary calls for three days of field activities and one day to examine data and talk with DOE personnel and contractors.

This field visit and interaction with DOE are most important for the Hydrologic Transport Section staff to be prepared and to properly review the study plans, reports and field activities related to hydrologic transport. Please make the appropriate arrangements with Paul Prestholt, the Onsite Representative, for badge access and camera passes for the Yucca Mountain Site and Nevada Test Site area. We also anticipate requesting DOE's approval to collect and remove rock samples from sites to be visited in controlled areas.

Don Chery is the principal contact on all matters related to personnel participating in the site visit.

/S/
Ronald L. Ballard, Chief
Geosciences & Systems Performance Branch
Division of High-Level Waste Management

Attachments: As Stated

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ATTACHMENT A

LIST OF YUCCA MOUNTAIN DATA COLLECTION ACTIVITIES OF INTEREST TO THE NRC HYDROLOGIC TRANSPORT SECTION STAFF

Groundwater

Site vicinity infiltration studies
- 74 unsaturated zone neutron logging wells 50-200 ft deep

Site vicinity unsaturated zone moisture studies
- 7 unsaturated zone monitoring wells 400-2000 ft deep

Saturated zone studies
- 25 water table monitoring wells
- Continuous water level, barometric, and tidal effects monitoring at three UE-25c wells in Drill Hole Wash
- Monitoring network at Nevada Test Site

Recharge sites at Pahute Mesa
- Measurements of temperature, precipitation, and infiltration

Spring discharge sites at Ash Meadows, Amargosa Desert, and Death Valley
- Franklin Lake Playa
- Furnace Creek
- Crystal Pool
- Devil's Hole

Repository analog in "G" Tunnel at Rainier Mesa (NTS)
- Prototype testing sites

Surface Water

Location for exploratory shaft and surface facilities

Forty Mile Wash
- 9 continuous stream gauging stations in wash drainage basin

Lathrop Wells scour chains (stream erosion study)

Meteorological/Climatological

5 meteorological towers at Yucca Mt. (4 10-meter; 1 60-meter)

Regional precipitation measuring sites
- 14 rain gauges and two continuously recording tipping buckets

Lake Manly shoreline

Tecopa Lakebeds

Dust-trap sampling

Trenches and vein deposits (Trenches 14, 14a, and 17)

Geology/Structure

Exposures of Paintbrush Tuff on west side of Busted Butte

Geologic and surficial deposits mapping

Shallow penetrating geophysical surveys

Dust-trap sampling

Bedrock pavement studies

ATTACHMENT B

TENTATIVE YUCCA MT. FIELD TRIP ITINERARY

DAY ONE

Nevada Test Site and eastern side of Yucca Mountain

G Tunnel - analog for HLW repository in welded tuff
Carpetbag Fault - recently reactivated by atomic testing
Exploratory Shaft Site
Forty Mile Wash - proposed sites for recharge study drilling
Drill Hole Wash
Trenches 14, 14a, and 17
West side of Busted Butte - exposures of Paintbrush Tuff
Meteorological stations
Neutron holes and saturated and unsaturated zone monitoring wells

DAY TWO

Ash Meadows, Amargosa Desert, and Death Valley

Crystal Pool
Devils Hole
Furnace Creek - vein deposits
Franklin Lake Playa
Shoreline of Lake Manley and Cinder Cone
Tecopa Lake Beds and Tecopa Springs

DAY THREE

West side of Yucca Mountain

Perimeter Drift area
Stream gauging and precipitation stations
Neutron holes and monitoring wells
Meteorological stations
Lathrop Wells - scour chains

DAY FOUR

Observation of hydrologic transport data collection and management procedures

Observation of selected drill cores at core library (Mercury)

Neutron logging and infiltration data
Geochemistry data
Meteorological data
Stream flow and precipitation data
Observation well records (well construction histories and water levels)

HYDROLOGIC TRANSPORT SECTION
STATUS OF STAFF VISITS TO YUCCA MOUNTAIN AREA

Staff who have never visited Yucca Mountain:

D. Chery
D. Brooks
N. Coleman
T. Mo

Staff who have recently visited the site:

J. Bradbury (three recent visits to site area, most recent in 1987)
W. Ford (two visits, most recent in 1988)
F. Ross (two visits, including one in association with QA audit)

Staff who have not been to the site in recent years:

J. Pohle (last visit, 1985)

NOTE: With the exception of J. Pohle, none of the staff of the Hydrologic Transport Section have attended an onsite visit dedicated solely to hydrologic transport matters.