U.S. NUCLEAR REGULATORY COMMISSION

ON-SITE LICENSING REPRESENTATIVE REPORT

NUMBER OR-98-02

FOR THE REPORTING PERIOD OF MARCH 1 THROUGH APRIL 30, 1998

William L. Belke
Sr. On-Site Licensing
Representative
Performance Assessment &
High-Level Waste Integration
Section
Division of Waste Management

Chad J. Glenn
Sr. On-Site Licensing
Representative
Performance Assessment &
High-Level Waste Integration
Section
Division of Waste Management

Reviewed and approved by:

Sandra L. Wastler
Acting Section Leader
Performance Assessment &
High-Level Waste Integration
Section
Division of Waste Management

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REPORT DETAILS

1.0 INTRODUCTION

The principal purpose of the On-Site Licensing Representative (OR) reports is to alert the U.S. Nuclear Regulatory Commission (NRC) staff, managers and contractors to information on the U.S. Department of Energy (DOE) programs for site characterization, repository design, performance assessment, and environmental studies that may be of use in fulfilling NRC's role during pre-licensing consultation. The principal focus of this and future OR reports will be on DOE's programs for the Exploratory Studies Facility (ESF), surface-based testing, performance assessment, data management systems and environmental studies. Relevant information includes new technical data, DOE's plans and schedules, and the status of activities to pursue site suitability and ESF development. The ORs also participate in activities associated with resolving NRC Key Technical Issues (KTI). In addition to communication of this information, any potential licensing concerns, or opinions raised in this report represent the views of the ORs. The reporting period for this report covers March 1 through April 30, 1998.

2.0 OBJECTIVES

The function of the OR mission is to principally serve as a point of prompt informational exchange and consultation and to preliminarily identify concerns about site investigations relating to potential licensing issues. The ORs accomplish this function by communicating, consulting and identifying concerns. Communication is accomplished by exchanging information on data, plans, schedules, documents, activities and pending actions, and resolution of issues. The ORs consult with the DOE scientists, engineers, or managers with input from NRC Headquarters management on NRC policy, philosophy, and regulations. The ORs focus on such issues as quality assurance (QA), design controls, data management systems, performance assessment, and KTI resolution. A principle OR role is to identify areas in site characterization and related studies, activities, or procedures that may be of interest or concern to the NRC staff.

3.0 QUALITY ASSURANCE, ENGINEERING, AND NRC KEY TECHNICAL ISSUES

- The current listing and status of the NRC QA Open Items is provided in Enclosure 1.

- The DOE Office of Civilian Radioactive Waste Management QA and their QA Technical Support Services contractor have been reorganized (See Enclosure 2). This reorganization was effective March 6, 1998.

- On September 9, 1997, the OR and DOE QA Management discussed an NRC request for obtaining the necessary additional information from DOE related to closing Site Characterization Plan Question 55 and Study Plan 8.3.1.5.2.2 comments. This has been discussed with DOE numerous times and listed in the OR Report since the original request. The NRC September 9, 1997, request for the information needed to resolve and close these open items has been assigned by DOE QA Management to the appropriate DOE Technical Team Lead and resolution is still in process. It should be noted that NRC QA Open Item 98-2 (See Jan./Feb. 1998 OR Report) may have a partial impact on the corrective action needed to close this open item and should be considered in its closure.

- In June 1997, the NRC released for public comment, drafts of four Regulatory Guides, three Standard Review Plan sections, and a NUREG document designed to help power reactor licensees use risk information to make changes in their plant's licensing bases. Parts of this draft guidance provided methodology pertaining to use of the graded QA approach to determine the relative importance to safety of structure, systems, and components. At the time of this material being released, the OR provided this information to DOE requesting a cursory review be performed for the purpose of possible application or parts thereof, to the high-level waste program. DOE completed its review of this draft guidance which resulted in six comments that have been transmitted to NRC in the April 6, 1998, letter from A. Brownstein to the NRC Rules and Directives Branch. DOE indicates that they do anticipate the potential for use of the methodologies in the draft guidance, to the extent this information may be applicable to the Yucca Mountain Site in the future. The OR has recommended to NRC Management that this matter be further discussed at the next NRC/DOE technical meeting. This draft guidance is also under review and consideration by the ASME/NQA Program Management Processes Subcommittee.

- The OR attended the entrance portion of the DOE performance based audit of the DOE Management System Management and Operating Contractor (M&O) in Las Vegas, NV, on March 2, 1998. It was evident at the opening of the audit, certain of the key management and technical personnel were not in attendance. NRC audit observers have noted the lack of attendance of key management and technical personnel as a weakness in past observations of DOE participant audits in the early stages of the project. It is anticipated that this occurrence is an isolated instance. An Observer Inquiry was submitted by the OR requesting information concerning suppliers and scientific notebooks in view of NRC QA Open Items 97-2 and 98-2. Enclosure 3 provides the inquiry and the DOE response. The OR agrees with this response.

- On March 24, 1998, the ORs visited the Nye County field office and borehole operation at the Nevada Test Site. A detailed description of this visit is provided in Section 5.O below.

- The OR office received a supplier audit notification and audit plan signed March 17, 1998. The date that the audit was planned to be conducted was March 18-19, 1998. In general, the normal time frame for notification to the auditee ranges from four to six weeks prior to the audit and not the day prior to the audit. This allows ample preparation for the auditee to assemble the necessary disciplines, material to be audited, and whatever other preparations may be needed. It also allows interested observers should they elect to attend, to make travel plans in advance. A review of prior audit notification plans indicates this one day audit notification is an isolated instance. A review of the QA procedure (QAP 18.3, "Supplier Surveys/Audits") controlling this effort, does not specify a time frame in which to notify the respective auditee of a forthcoming audit. The NRC OR recommends consideration be given to reviewing this procedure and other auditing procedures to possibly include provisions for a reasonable time frame in which to notify auditees (and observers) prior to an audit.

- The regularly scheduled monthly QA meeting between the ORs and and DOE QA Management and staff was held on April 14, 1998. The results of this meeting have been factored into Section 3.0 above and Enclosure 1, Open Items. The following subject matter was discussed:

  - Open Item 95-1, U.S. Geological Survey (USGS) technical program adequacy
  - Graded QA approach
  - Open Item 96-2, level of quality of work products
  - Open Item 97-2, validity and qualification of supplier data
  - Open Item 98-1, deficiencies not closed in a timely manner
  - Open Item 98-2, increased deficiencies in scientific notebooks
  - DOE QA reorganization
  - Data qualification

- On April 16, 1998, the ORs attended a scheduled presentation to obtain the necessary information to close NRC QA Open Item 95-1 issued November 1995, as a result of the DOE September 1995, audit of U.S. Geological Survey (USGS). The topic of the Open Item questioned the overall quality of the USGS technical reviews for correctness, technical adequacy, completeness, accuracy, and compliance with established requirements.

  In response to this 1995 NRC QA Open Item, DOE performed a review of USGS documents that contained no calculational data. When DOE learned that NRC was interested in the technical adequacy of calculations, technical documents were obtained that did contain calculational data and verified the accuracy of these calculations. This additional exercise by DOE initiated in September 1997, to resolve this open item provides the necessary confidence that the calculations in USGS technical reports have a reasonable degree of accuracy.

  A subsequent review consisted of selecting a set of USGS documents that contained calculational data namely:

  1) O'Brien, Grady, Analyses of Aquifer Tests Conducted in Boreholes USW WT#10, UE-25 WT-12, USW SD-7, 1995,1996, Yucca Mountain, Nevada, 1996, WRIR 96-4293.
  2 LeCain, Gary, Air-Injection Testing in Vertical Boreholes in Welded and Nonwelded Tuff, Yucca Mountain, Nevada, 1996, WRIR 96-4262.

  This was a comprehensive review and the technical reviewers are to be commended for their efforts. Final results provide the necessary confidence that the calculations in the USGS technical reports have a reasonable degree of accuracy. Therefore, NRC QA Open Item 95-1 is closed.

- An overview of the Corrective Action Requests (CARs) issued thus far by DOE for FY 1998 indicates that there are examples whereby CARs are not always being issued in a timely manner. Criterion XVI of Appendix B of Title 10 of the Code of Federal Regulations (CFR) requires in part, "...deficiencies to be promptly identified..." Section

16.1 of the DOE Quality Assurance Requirements and Description document commits to implement this requirement. The listing below provide the CARs issued to date:

CAR	DATE INITIATED	DATE ISSUED	NUMBER DAYS TO ISSUE
LVMO-98-C-001	10/6/97	10/15/98	9
LVMO-98-C-002	10/30/97	2/11/98	104
LLNL-98-C-003	11/25/97	2/12/98*	79 * INCORPORATED INTO CAR VAMO-98-C-005
USGS-98-C-004	12/18/97	2/4/98	48
VAMO-98-C-005	1/28/98	2/11/98	14
LVMO-98-C-006	2/10/98	2/11/98	1
USGS- 98-C-007	2/11/98	2/26/98	15

In OR Report 98-01 for January/February 1998, NRC QA Open Item 98-1 was initiated for deficiencies not being closed in a timely manner. It is recognized that the amount of CARs issued are not that great in number as opposed to the amount of Deficiency Reports and Performance Reports that are issued. However, in consideration of the seven CARs issued to date, it is easily visible that CAR issuance times of 104, 79, and 48 days are not considered timely. The OR will monitor the issuance of future deficiencies in order to assure compliance with the full intent of Criterion XVI of Appendix B to 10 CFR Part 50.

o In the OR Report for January 1996, it was noted that the QA organization did not appear to be involved in the preparation, review, or approval of the 1995 Total System Performance Assessment (TSPA) document. The ORs recommended that for future TSPA development, that the QA organization be involved. In a March 9, 1998, letter from J. Younker to S. Brocoum, a transition plan was approved to provide for the establishment of a performance assessment (PA) QA program transition team and to describe a rational approach for developing and implementing a QA program for PA activities and work products. Prior to this transition, the PA effort was not under the QA program.

The "Implementation of Performance Assessment Quality Assurance Program Transition Plan" identifies a series of vertical slice reviews to be used by the M&O and DOE management to develop a better understanding of documentation weaknesses and strengths. The information will be used by management to appropriately allocate resources where documentation needs to be strengthened. This transition process was discussed at the January 21, 1998, NRC/DOE QA meeting.

The OR office obtained a February 17, 1998, report documenting the M&O vertical slice review of Chapters 6 and 7 of the Lawrence Berkeley National Laboratory Site Scale UZ Flow Model to determine if there were weaknesses in the defensibility and documentation of the model based on generally accepted nuclear QA principles. The UZ Flow Model is one of the key inputs to the Total System Performance Assessment process.

It should be emphasized that this review was voluntarily initiated to determine whether there were weaknesses in the defensibility and documentation of the model based on generally accepted nuclear QA principals and also from a potential licensing aspect. The five person review team's expertise consisted of technical experts with nuclear regulatory backgrounds. One of the members included a former NRC Regional Inspector contributing licensing experience to the other qualified members of the team. The conclusion of this review indicated that the procedures used to develop this model do not meet generally accepted nuclear QA standards. This conclusion was based on the following findings as summarized below:

- Processes for control and validation of assumptions were not found
- The process for control of input data was inadequate
- A process to identify and determine the impact of data shortcomings on analysis was not found
- Analysis process and content protocols were inadequate
- Software QA procedures were not adequately implemented
- Document review procedures lacked specificity
- Scientific notebook procedures were inadequate
- Implementation of document control procedures was ineffective
- Knowledge of QA program requirements was deficient
- Documentation of report references was inadequate

After the OR review of this report, two meetings were held on April 28, 1998, between the ORs, DOE staff, M&O Management, M&O staff, and DOE QA management to learn more of the report specifics.

The effects of findings uncovered during this review are being evaluated by DOE and actions will be taken as necessary, and tracked to correct any adverse conditions uncovered. At this time, it is not known what effect, if any, the results of the report will have on the Viability Assessment or the potential licensing effort. In limited discussions with DOE technical and QA personnel, the conclusions of the report are being viewed as positive in that the findings will improve the PA process, especially for the licensing potential.

Based on the above information, the report and the information was forwarded to NRC Management for further consideration. This subject matter will be further discussed at a future NRC/DOE meeting. Shortly thereafter, a second report was obtained whereby a review/vertical slice of the Total Systems Performance Assessment -1995 of the Waste Form Degradation and Solubility Limits was performed and yielded similar findings that surfaced for the UZ Model effort . This will be listed as a new NRC QA Open Item 98-3 for tracking purposes . The ORs will monitor the progress of any corrective actions taken and report on its implementation in subsequent OR Reports.

4.0 EXPLORATORY STUDIES FACILITY AND KEY TECHNICAL ISSUES

Enhanced Characterization of the Repository Block (ECRB

Excavation of the ECRB or "Cross-Drift" began on December 8, 1997, approximately 2,000 meters from the entrance of the ESF North Portal. This cross-drift will allow the collection of additional data at the potential repository block to support the characterization of Yucca Mountain. In February 1998, constructors completed the excavation of a 27 meter starter tunnel for the Tunnel Boring Machine (TBM). In March 1998, the TBM started excavating a five meter diameter drift that will advance southwest across the repository block and through the Solitario Canyon fault. On April 30, 1998, this excavation had advanced to cross-drift station 1+80 meters. The Project is presently considering the option of switching from a wet to dry TBM cutterhead configuration.

Exploratory Studies Facility (ESF) Testing

ESF construction monitoring and testing activities continue.

Alcove 1:
On March 9, 1998, investigators started an artificial infiltration test above this alcove. A drip irrigation system is installed at the surface 37 meters above this alcove to determine if this water can induce fracture flow in Alcove 1. Traced water is applied at a measured rate of roughly 600 gallons per day. Moisture monitoring instrumentation is installed at the surface and in the alcove. Drip collection equipment is also installed in the alcove and a steel bulkhead isolates the test area in this alcove from ESF ventilation effects. On May 3, 1998, dripping water was initially detected in the crown of the alcove.

Alcove 2:
Over this reporting period, work was completed to convert this alcove into a display center for ESF visitors.

Alcoves 3 and 4:
A number of shallow boreholes have been dry drilled in Alcove 3 to further characterize the hydrologic properties of the Paintbrush non-welded tuff unit. Additional boreholes will be drilled in Alcove 4 for this purpose.

Alcove 5 (Thermal Testing Facility Access/Observation Drift, Connecting Drift, and Heated Drift):
DOE initiated the heating phase of this test on December 3, 1997. The four year heat-up phase will be followed by a four year cool-down phase. Heat generated by 9 electrical floor heaters and 50 wing electrical heaters will simulate heat from emplaced waste. This test is designed to heat approximately 15,000 cubic meters of rock in the repository horizon to 100 degrees centigrade or greater to investigate coupled thermal-hydrologic-mechanical-chemical processes. These processes will be monitored by approximately 4000 sensors positioned in 147 radial boreholes around the heated drift. A data collection system records measurements from these sensors. On April 30, 1998, sensors in the heated drift recorded the following preliminary temperatures: canister temperature of 131 degrees

centigrade, rock-mass surface temperature of . .5 degrees centigrade, and air temperature of 119 degrees centigrade.

Thermomechanical Alcove:
The Single Element Heater Test started on August 26, 1996. This test is designed to heat approximately 25 cubic meters of rock to 100 degrees centigrade or greater to investigate the thermomechanical properties of rock in the potential repository horizon. The thermal objective for the heat-up phase of this test was met, and the heater was turned off on May 28, 1997, to begin the cool-down phase of this test. In late December 1997, the cool-down phase of the test was completed. Over this reporting period, investigators completed post-test coring to analyze the heating and cooling effects on the rock mass. A final report on the results of the Single Element Heater Test is expected in January 1999.

Alcove 6 (Northern Ghost Dance Fault Alcove):
Testing in this alcove is designed to investigate the hydrochemical and pneumatic properties of the Ghost Dance Fault. Excavation of this alcove cut the fault at station 1+52. At this location, the fault is approximately 1 meter wide with a vertical offset of 6 meters. Investigators continue to conduct air permeability testing and gas sampling across this fault via three 30 meter radial boreholes. A fourth radial borehole was drilled to characterize the rock mass east of this fault.

In June 1998, a fracture-matrix interaction test is expected to be conducted in this alcove. Six boreholes have been dry drilled to a depth of 5 meters in the right rib above the invert (between stations 0+50 and 0+60). Air permeability and pneumatic tracer testing will be conducted to characterize fracture connectivity. A horizontal slot (approximately 5 meters wide X 5 meters deep X 0.3 meters high) will be cut between these boreholes and the invert for the installation of a water/tracer collection system. A known quantity of traced water will be released into the rock mass from selected boreholes to determine the fraction of water that is imbibed into the matrix versus the fraction that flows through fractures. The test sequence includes: a) air permeability and gas tracer testing in boreholes; b) water/tracer injection and moisture and tracer monitoring in selected boreholes; and c) overcoring selected boreholes and small-scale mine back of test bed for sample collection after the test. A similar test will also be conducted in Alcove 4 in the Paintbrush nonwelded tuff. The results of these tests are expected to be documented in the Fall 1998 time frame.

Alcove 7 (Southern Ghost Dance Fault Alcove):
Excavation of this alcove cut the Ghost Dance Fault at station 1+67. At this location, the fault is approximately 1 meter wide with a vertical offset of approximately 25 meters. Two steel bulkheads have been constructed in this alcove to isolate and test two different zones (a non-faulted zone from 0+64 to 1+34, and a faulted zone from 1+34 to 2+00). Since November 1997, data has been collected from moisture monitoring instrumentation installed at the surface, above this alcove, and in the alcove. Over the next year, this instrumentation is designed to measure natural infiltration at the surface and temperature, pressure, and moisture conditions in the alcove. To date, DOE scientists report no significant hydrologic changes from baseline conditions in the alcove.

Niche Studies:
DOE has initiated work to reduce the uncertainty in the amount of percolation flux through the potential repository horizon at Yucca Mountain. Two niches (Niches #1 and #2) have been excavated in the ESF Main Drift. Niche #1 represents an area of potential fast percolation flux and Niche #2 an area of slow percolation flux, based on the results of Chlorine 36 studies. Investigators hope to characterize these two locations to identify any difference in ambient conditions in fast and slow percolation flux areas. Project scientists have completed a status report documenting the results of the first phase of drift seepage testing and niche monitoring. Over this reporting period, preparations continue for testing at two new niche locations (Niche #3 and #4).

Niche #1 (35+66):
Data continues to be collected from instruments that monitor humidity, moisture, and rewetting of niche walls. The steel bulkhead for this niche was closed in January 1998 to monitor in-situ moisture conditions over a six month period. Drift seepage tests will be conducted in this niche after this in-situ monitoring phase is completed.

Niche #2 (36+50):
Investigators installed a system to catch dripping water for drift seepage threshold testing. This test is designed to help understand how the downward flow of water is affected by a mined opening. Since December 1997, investigators have conducted a series of tests which entail the release of aqueous dyes from radial boreholes above this niche. In each test, a known amount of dye is released and seepage into the niche collected and monitored. This test is repeated by varying the type and amount of fluid injected to determine the point at which seepage is no longer detected. Seepage testing in this niche was completed over this reporting period. Investigators plan to install moisture monitoring equipment in this niche and then close the niche to monitor in-situ moisture conditions.

Niche #3 (31+07) and Niche #4 (47+87):
Similar drift seepage tests and moisture studies are planned at these locations. The planned testing will be conducted in stages, including: 1) installation of seven boreholes, with subsequent testing and monitoring via these boreholes prior to niche construction; 2) niche excavation; 3) installation of six boreholes within each of these niches, with subsequent testing and monitoring via these holes; installation of niche bulkheads; water release tests to quantify seepage into the drift; and 6) long-term hydrologic monitoring. Niche #3 is located directly below the planned ECRB Cross Drift and will be used to monitor the effect of this construction activity. In April 1998, investigators completed air permeability testing in seven radial boreholes drilled in the footprint of Niche #3. This niche is scheduled to be excavated in May 1998. At the Niche #4 location, seven pre-construction boreholes have been drilled for air permeability testing.

Surface-Based Testing

Fran Ridge Large Block Test:
The purpose of this test is to gather data to evaluate thermal-hydrologic-mechanical-chemical processes in rock similar to the potential repository horizon. The heat-up phase

of the Fran Ridge Large Block Test (LBT) started on February 28, 1997. Since October 1997, investigators have continued to maintain at a steady state rock mass temperature in the block of approximately 140 degrees centigrade. In early March 1998, the heaters were turned off to begin a six month period to monitor the cool-down of the block. The block will be dismantled following cool-down to analyze the heating and cooling effects on the rock mass.

Borehole Testing:
The location of boreholes referenced in this section are provided in Enclosure 4.

C-Hole Complex:
On November 12, 1997, tracer testing in the Tram/Lower Bullfrog Tuff was terminated. Since that time, equipment and instrumentation in boreholes C#2 and C#3 have been reconfigured for saturated zone testing in the Prow Pass Tuff. This testing is designed to assess hydrologic properties and chemical interactions of tracers (used to simulate radionuclides) within this stratigraphic unit. Tracer testing in the Prow Pass Tuff is expected to start in May 1998.

WT-24:
This borehole is being drilled to assist in characterizing the large-hydraulic gradient or perched water body north of the proposed repository site. In October 1997, water was encountered in the borehole at a depth of 1686.5 feet (514 meters) and hydrologic tests conducted. Results of this testing and chemical analyses of water samples indicate that this is perched water. In February 1998, this water zone was sealed and core drilling resumed until water was encountered at a depth of 2492 feet (760 meters). The water level in the borehole rose and stabilized at a depth of 2163 feet (659 meters). Project scientists believe that this water level represents the top of the regional saturated zone at this location. Water samples have been collected and geophysical logging of this interval completed. This borehole is expected to be drilled to a total depth of approximately 2850 feet (868 meters). DOE WT-24 Prognosis Update Log is attached as Enclosure 5.

SD-6:
This borehole is intended to assist in characterizing the geology and hydrology in the western portion of the proposed repository. Drilling initiated on November 18, 1997. Over this reporting period, drilling and coring advanced and water was first encountered at a depth of approximately 2541 feet (775 meters). The water level in the borehole stabilized at a depth of approximately 2510 feet (765 meters). Water samples have been collected for analyses and geophysical logging of this interval of borehole completed. Project scientists believe that this water represents the regional saturated zone at this location. This borehole will be drilled to a total depth of approximately 2850 feet (868 meters). DOE's SD-6 Prognosis Update Log is attached as Enclosure 6.

WT-3 and WT-17:
The monitoring tubing in these boreholes was removed and a submersible pump installed and operated to clean-out these boreholes. In April 1998, a nonmetallic pump was used to collect initial groundwater samples from these boreholes for measurements of EH and PH used in modeling the transport of radionuclides. In purged water samples collected,

preliminary indications are that reducing conditions exist in the upper saturated zone. Additional sampling and analyses of groundwater will be conducted for measurement of EH and PH.

Pneumatic Testing:
Pneumatic data recording continues at boreholes UZ-4, UZ-5, UZ-7a, SD-12, NRG-7a, and SD-7. Nye County continues to record pneumatic data in NRG-4 and ONC-1.

Busted Butte UZ Transport Test:
The planned hydrologic and tracer testing at Busted Butte is designed to provide data to help model the travel of radionuclides in the unsaturated zone under the proposed repository. Constructors have completed the excavation of a 72.5 meter main drift and 19 meter test alcove approximately 58 meters down the main drift. This test is designed to proceed in three phases. The first phase of this tracer test started in March 1998 and is expected to continue over the next several months. DOE summary information on this test is provided in Enclosure 7.

5.0 GENERAL

1. Appendix 7 Site Interactions

- On April 7, 1998, representatives from the Division of Waste Management technical staff and Center for Nuclear Waste Regulatory Analyses visited the Yucca Mountain Site. The purpose of this visit was to obtain an overview of the geological features of the ESF, Busted Butte, Yucca Mountain Crest, and Fran Ridge Large Block Test. There were no outstanding issues raised during this visit.

- On April 29, 1998, representatives from the Division of Waste Management visited the Yucca Mountain site to view and obtain an overview of the DOE unsaturated zone transport test at Busted Butte. There were no outstanding issues raised during this visit.

2. Other

- The ORs attended the March 11, 1998 meeting of the Nevada Legislature's Committee on High-Level Radioactive Waste held in Las Vegas, NV. Enclosure 8 provides agenda of the items discussed at this meeting. This Committee reports the results of its studies and evaluations to the Nevada State Legislation. The OR presentation described the duties of the OR Office and recent items of concern.

- The OR attended the March 13, 1998, Director's Program Review video conference meeting as presented to Mr. Lake Barrett, Acting Director of the Office of Civilian Radioactive Waste Management. The meeting was held between the DOE offices in Las Vegas, NV, and Washington, D.C. Enclosure 9 provides an agenda of the items discussed at this meeting.

- On March 23, 1998, the ORs met with the Yucca Mountain Site Characterization Acting

Project Manager. The list of items discussed at this meeting is provided in Enclosure 10. At this meeting the ORs expressed their concerns emphasizing their importance from a licensing perspective. The Acting Project Manager appeared to be receptive to these concerns and indicated actions will be initiated to appropriately respond to these concerns.

- On March 19, 1998, the OR attended the Devil's Hole Workshop at the Longstreet Inn and Casino in Armargosa Valley, Nevada. The purpose of this annual meeting is to provide a forum for the exchange of information related to the Death Valley groundwater system. Enclosure 11 provides an agenda of the items discussed in this meeting.

- On March 24, 1998, the ORs visited the Nye County field office and borehole pneumatic monitoring operation at the Nevada Test Site. The purpose of this visit was to understand the effect if any, that the Nye County data collection activities could have on any prelicensing or licensing efforts.

  The Nuclear Waste Policy Act (NWPA), as amended, directs DOE to provide financial assistance to the county within whose jurisdiction Yucca Mountain is located to conduct certain monitoring and oversight activities. In addition, the NWPA authorizes on-site representation to conduct on-site oversight activities at the designated site. As such, Nye County on-site representation activities have included monitoring of DOE site characterization and QA program implementation and collecting data under an independent scientific investigation program.

  Nye County has to date, drilled a borehole (ONC-1, almost 1600 feet in depth) and was authorized by DOE to use an existing borehole (NRG-4 almost 700 feet in depth) to install downhole instrumentation for independent collection of data on barometric pressure, temperature, and gas chemistry. All data collected from these studies is available to DOE and other interested parties via a Nye County Internet Web site.

  A recent proposal from Nye County has been submitted to DOE requesting to expand their drilling program. This proposal entitled "Early Warning Monitoring Network," would have new wells located down gradient of Yucca Mountain and be designed to investigate the saturated zone hydrology in the Armargosa Valley area. This program is planned to create a comprehensive baseline of critical aquifer parameters whose information will be available to all interested parties. Nye County believes this network will provide important information to assure the down-gradient public that any changes in the system will be observed in time for any migrating measures to be implemented. This proposed program was presented to the Nuclear Waste Technical Review Board (NWTRB) at the January 21, 1998, at the meeting in Armargosa Valley.

  Prior to the ORs looking into the Nye County programs, the ORs discussed this activity with an NRC Headquarters technical staff member to obtain feedback on whether this OR effort would be worthwhile. The technical staff member suggested that the ORs obtain a cursory overview of the Nye County program and provide feedback to NRC management and technical staff. Based on this overview, the NRC staff would be

better informed about the value and potential impact of Nye County program activities on NRC/DOE prelicensing or licensing efforts. The NRC staff member also indicated that certain of the Nye County information is planned to be referenced in the NRC KTI Issue Resolution Report for Unsaturated and Saturated Flow Under Isothermal Conditions.

Before this visit, the ORs obtained an "Information" copy of the Nye County QA Plan, QA implementing procedures, and technical procedures in order to obtain an overview of the overall application. This information was reviewed and several questions surfaced and clarifications were requested. These questions pertained to such items as program assessment, personnel qualifications and training, supplier qualification, scientific notebooks, corrective action, sample control, software verification/validation, surveillances, statement of work, records transmittal, and calibration of measuring and test equipment. A brief meeting was held in the Nye County Field office and clarification to the NRC ORs questions were obtained. After this meeting, the ORs visited ONC-1 for an explanation on the Westbay-MOSDAX down hole monitoring system, and observed the downloading of data from this system. The Nye County borehole operation methodology differs from the DOE methodology. Borehole intervals isolated for sampling are isolated with an inflatable packer as opposed to the DOE methodology of grouting.

As a result of this brief overview, it appears to the ORs that the Nye County technical and QA program procedures are sufficient and are being properly implemented for the scope of their activities. It was noticed in certain areas, that certain QA controls may be in excess of what may actually be necessary for this type of application. The Nye County data acquired from ONC-1 and NRG-4 would probably be considered to be of a qualified pedigree especially in view of the calibration efforts and controls in place. However, for the overall Nye County modeling efforts, data has been acquired from all available sources and may not be considered qualified data. This could have an impact on the validity of their final model efforts.

The ORs fully recognize that Nye County is legally assigned an independent oversight role, and is not subject to audit or surveillances by DOE or NRC. Should Nye County acquire funding for the proposed new monitoring wells, and should the data acquired be used by DOE or other interested parties, it may be desirable to encourage outside observation of data collection methods and procedures to assure the data is of a qualified pedigree and of use to all interested parties.

RESOLUTION STATUS OF THE NRC OPEN QA ISSUES

ISSUE STATUS

95-1 In response to this 1995 NRC QA Open Item, DOE originally performed a review of USGS documents that contained no calculational data. When DOE learned that NRC was interested in the technical adequacy of calculations, technical documents were obtained that did contain calculational data and verified the accuracy of these calculations. This additional exercise by DOE initiated in September 1997, to resolve this QA Open Item provides the necessary confidence that the calculations in USGS technical reports have a reasonable degree of accuracy. Therefore, NRC QA Open Item 95-1 is closed.

96-1 In response to the NRC August 19, 1996, letter (J. Austin to S. Brocoum), DOE organized a working group for improving the requirements and process for qualification of existing data. This was tracked by the ORs and presented at the 5/12/97, QA meeting. From the OR perspective, this revised methodology appears to be responsive to the NRC position expressed in the August 19, 1996, letter. NRC has questioned whether "cited literature" needs to be qualified or whether all that is needed is to provide the source or reference. This matter has been referred to NRC Management for a policy decision. The DOE methodology has been documented in Revision 8 to the DOE Quality Assurance and Requirements Document and has been accepted by NRC in the March 16, 1998, letter from M. Bell to A. Brownstein. However, this item remains open until NRC Management decides whether the NRC guidance in NUREG-1298, "Qualification of Existing Data for High-Level Nuclear Waste Repositories," requires a revision.

96-2 As a result of the LANL audit conducted September 16-23, 1996, 4 Deficiency Reports (DRs) were issued. Proposed corrective actions to resolve these DRs was originally scheduled for completion in August 1997, and verification for full closeout was scheduled for late 1997. At the January 21, 1998, NRC/DOE QA meeting, DOE indicated that they would provide the NRC staff the requested information pertaining to the timeliness and the reviewers of the report in question. If the proposed corrective actions and satisfactory verification addresses the NRC Open Item, will be closed by the NRC technical specialist.

97-1 Revision 8 (accepted by NRC in the March 16,1998, letter from M. Bell to A. Brownstein) to the QARD closes this open item on statistical analysis.

97-2 As a result of the OR observation of increased deficiencies surfacing during DOE audits/surveillances of its suppliers, the OR questions whether the data/products produced by these suppliers will be acceptable and appropriately qualified for licensing. DOE has issued Corrective Action Request LVMO- 98-C-002 and the response from the M&O is currently being evaluated by DOE.

98-1 The OR review of the open and closed deficiency documents indicate many

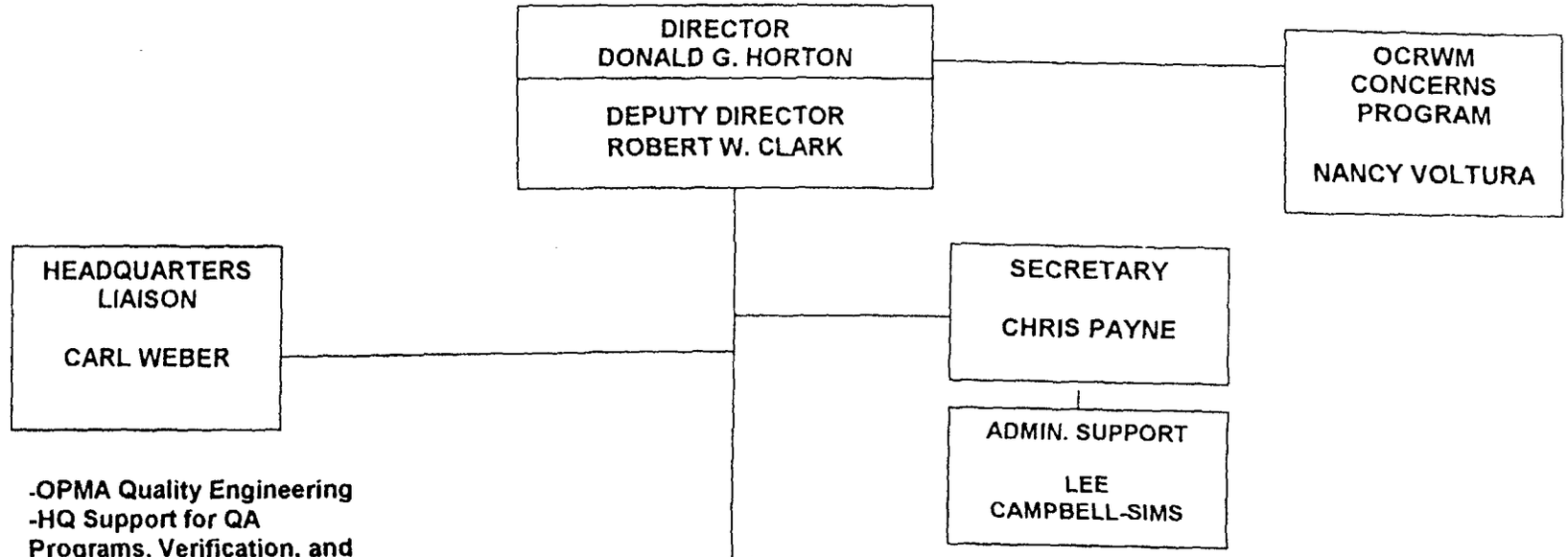
deficiencies have remained open in excess of one year. This does not meet the full intent of Criterion XVI of Appendix B to 10 CFR Part 50 for prompt identification and closeout of deficiencies. The matter of timely closeout of deficiencies also appears to be somewhat of a repetitive occurrence of CAR-LVMO-94-C-010. This CAR, originated in December 16, 1993, noted that 30% of CARs required an extension. 55% of the CARs were open for more than 90 days indicating an adverse trend that CARs were not being completed in a timely manner.

DOE has initiated an effort to categorize the open deficiencies in their order of priority and then initiate efforts to close these deficiencies in a more timely manner in their respective order of priority.

98-2 Recent DOE audits and surveillances indicate an increased pattern or trend in scientific notebook deficiencies. The deficiencies pertaining to scientific notebooks are being evaluated to determine whether a trend actually exists and the extent of the appropriate corrective action.

98-3 Conclusions documented in the M&O's reports from the review of the Site Scale Unsaturated Zone Flow Model and the Total System Performance -1995 for Waste Form Degradation and Solubility Limits indicate that procedures used to develop and document these models do not generally meet accepted nuclear QA standards. The ORs will monitor progress in improvements needed resulting from these reviews/reports.

DOE OCRWM OFFICE OF QUALITY ASSURANCE



-Software QA
-Quality Engineering (Design, PA, Regulatory)
-DOE Point of Contact for Lab Surveillance and USGS
-Licensing
-Design Reviews
-QARD & Procedures
-Expert Elicitation
-Change Control
-Configuration Management
-Procurement
-Technical Reviews (Design Documents)
-Performance Assessment

-Audits
-Surveillances
-Corrective Action
-Supplier Audits
-Surveillances Coordination
-Trending

-Quality Engineering (Science)
-DOE Point of Contact for Field Surveillances
-Field Investigation
-Field Testing
-Data Collection
-Technical Reviews (Science Documents)

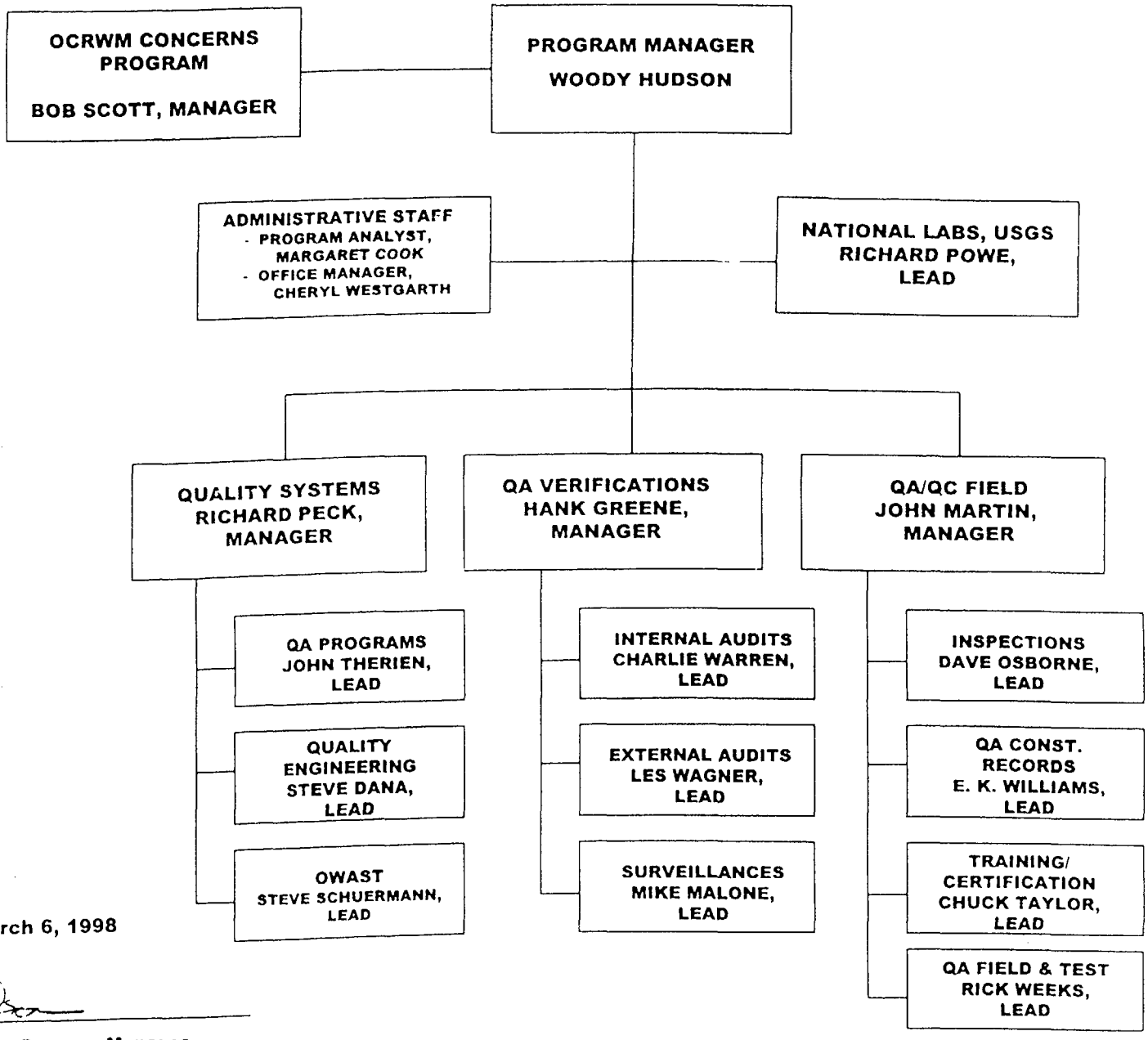
-Site Quality Control Activities (Including Batch Plant)
-NDE Inspections
-Work Package Coordination
-Inspection Planning
-Testing (Construction Related)
-Field Change Control
-NCR Coordination

-OWAST Quality Engineering
-Point of contact for EM, NR, MD & QAMA Activities
-OWAST Design Reviews
-OWAST Technical Document Review
-Interim Storage Activities
-National Spent Nuclear Fuel Transportation
-High Level Actvities
Waste Acceptance Activities

EFFECTIVE: April 30, 1998

ENCLOSURE 2

QUALITY ASSURANCE TECHNICAL SUPPORT SERVICES ORGANIZATION



ENCLOSURE 2

Effective Date: March 6, 1998

Woody Hudson, Program Manager

OCRWM
AUDIT OBSERVER INQUIRY QA:QG

Audit No. AEP-98-02

Log No. _____

Name Bill Belke 3/2/98 Organization: NRC On-Site Rep.

Requirement Reference *

Question/Concern: * RE: Suppliers - Scientific Notebooks - 29-39-40-55 (1) (2) (3) Audit Checklist Questions #'s 7-8-9-18-22-28

IN VIEW OF CERTAIN SUPPLIERS FOUND TO BE INDETERMINATE OR INEFFECTIVE, AND THE NRC QA OPEN ITEM ON THIS SUBJECT, IT APPEARS CERTAIN OF THE AUDIT CHECKLIST QUESTIONS FOCUS ON THIS SUBJECT. FEEDBACK ON THIS SUBJECT IS REQUESTED SPECIFICALLY, ON THE EFFECTS (IF ANY) OF A&V PRODUCTS OR DATA PROVIDED BY A SUPPLIER IN QUESTION AS IT PERTAINS TO THE SCOPE OF THIS AUDIT.

IN ADDITION, IN VIEW OF RECENT TRENDS OR PATTERNS THAT HAVE SURFACED IN RECENT QAE AUDITS/SURVEILLANCES RELATED TO SCIENTIFIC NOTEBOOKS, FEEDBACK IS REQUESTED ON ANY DEFICIENCIES PERTAINING TO SCIENTIFIC NOTEBOOKS WITHIN THE SCOPE OF THIS AUDIT. (NRC QA OPEN ITEM IS CARRIED IN JAN/FEB 98 NRC ONSITE REP REPORT)

Response: See Attached Response

RES

3/10/98

Observer's Acknowledgment

Cleared for Submittal to Affected Organization N/A

Auditor/Technical Specialist

☐ *Incorporated in Audit Checklist...Reference* See Audit Report & Chklst Items 7-9, 18, 22, 28-29, 39, 40-55

Audit Team Leader

ENCLOSURE 3

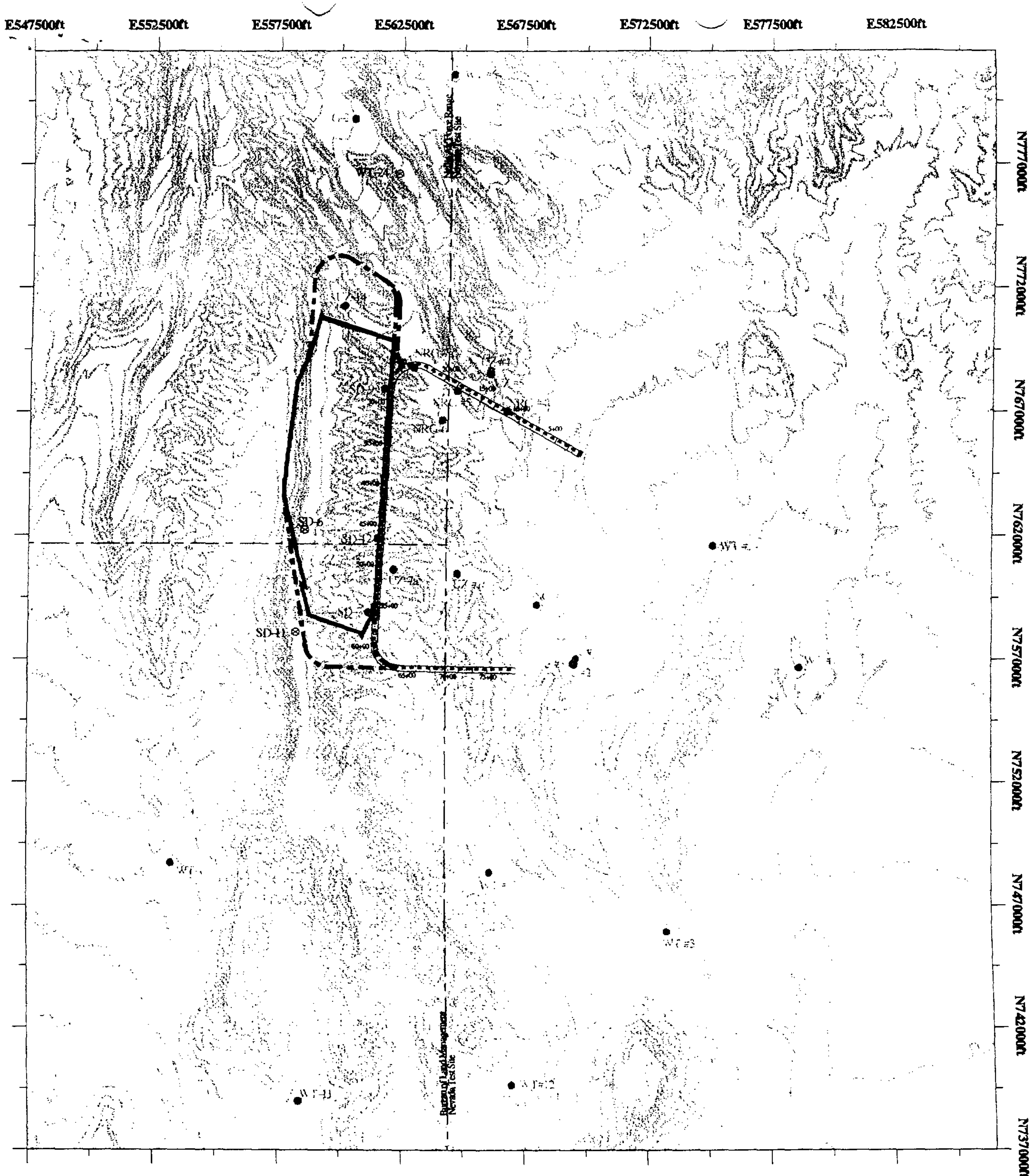
RESPONSE TO AUDIT OBSERVER INQUIRY from NRC ON-SITE REPRESENTATIVE
AUDIT NO: M&O-ARP-98-09
Attn: Bill Belke

While there are numerous supplier issues project-wide, the equipment and instrumentation installed in the DST have been evaluated against open deficiency reports (e.g. YM-97-D025; YM-D-97-D-047; etc) with the conclusion by the M&O/Test Coordination Office (TCO) that there will be no impact on the quality of the data with regard to these documents. The audit team was unable to substantiate any impact on data as result of open deficiency reports related to procurement of M&TE. No other known supplier issues (i.e. analytical services) were observed or found during the audit. While some of the suppliers were not qualified appropriately at the time of equipment installations for the Single Heater Test, they were subsequently qualified for the DST. An issue related to procurement and calibration of lab equipment was identified at LLNL (similar to the issues identified in) during the DST audit. This deficiency will be evaluated as part of the procurement CAR VAMO-98-C-005 that has been generated for the project. It should be noted that DR YM-97-D-047 (that was written on LLNL on last year's SHT audit) was subsequently rolled into this CAR. It was determined during this audit that the instruments in the DST were appropriately calibrated which should provided the audit team some assurances relative to the quality of the data. However, it was determined that instrumentation installed inside the heated drift may not be able to be calibrated "post-test" as required by the QARD. A DR LVMO-98-D064 was issued as a result of this by the audit team. While this issue has a potential for impact on data, a rationale based on the integrity (reliability) and history of the instruments, redundancy, and room for "error" based on scientific uncertainty was provided by the M&O/TCO/Laboratories to address this. The accuracy of this rationale will have to be verified and substantiated by future audits.

The Scientific Notebooks (SNs) reviewed at SNL, LBNL, and LLNL, relative to the Thermal Tests, were generally found to be thorough, well organized and complete. While there are SN issues on the project (e.g. DR YM-97-D-048 issued to LBNL last year on the SHT audit), the SNs being used for DST appear to be in good standing, including the ones that were in question on the previous Thermal audit.

K C Belke
Audit Team Leader
4/4/98

DST=DRIFT SCALE TEST
SHT=SINGLE HEATER TEST



Legend
- ● Existing Borehole
- ⊗ Planned Borehole
- Proposed Waste Emplacement Area
- Proposed Repository Block
- ESF Tunnel
- Reference Tic Interval 100 Meter
- Contour Index Interval 100 Feet
- Contour Interval 20 Feet

1 0 1 MILES

1 0 1 KM

N

Yucca Mountain Site Characterization Project

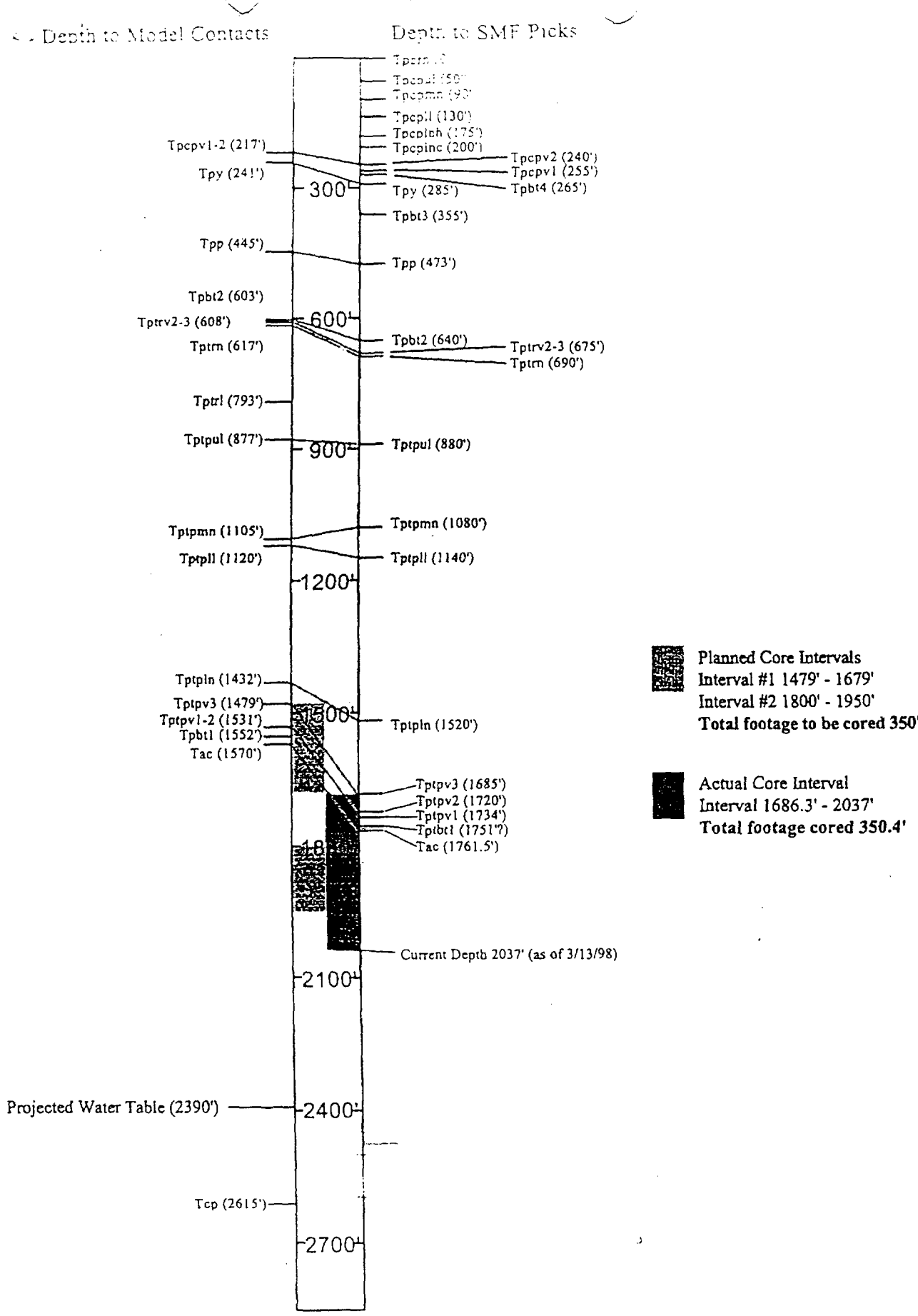
SELECTED BOREHOLES IN THE VICINITY OF THE CONCEPTUAL CONTROLLED AREA

Map Compiled by CRWMS M&O/TDM on November 7, 1997.

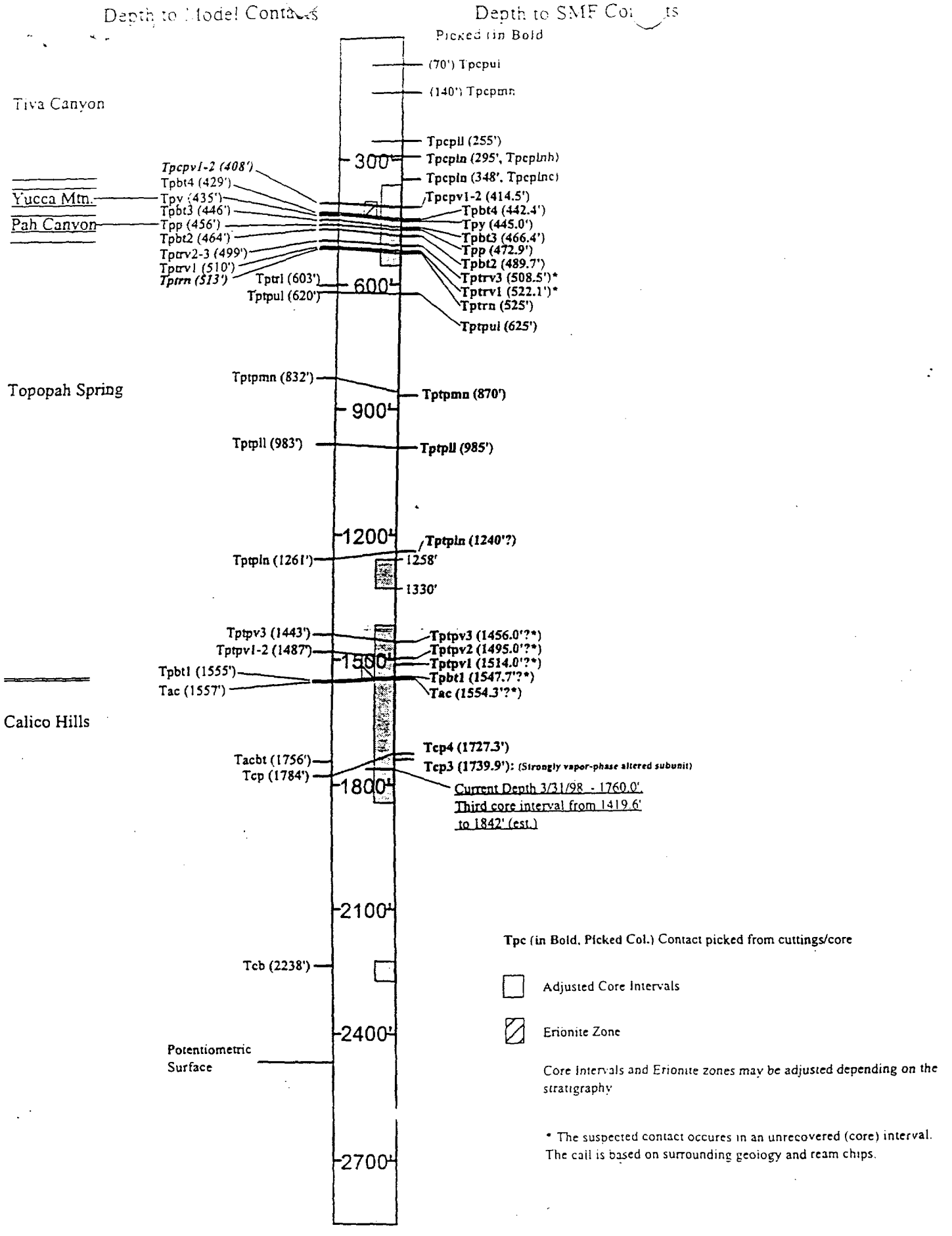
Enclosure 4

YMP–97–314.0

USW W[illegible]4 Prognosis Update Log



ENCLOSURE 5


Depth to Model Contacts
Depth to SMF Contacts
Picked (in Bold)
Tiva Canyon
Yucca Mtn.
Pah Canyon
Topopah Spring
Calico Hills
(70') Tpcpul
(140') Tpcpmn
Tpcpll (255')
300'
Tpcpln (295', Tpcplnh)
Tpcpln (348', Tpcplnc)
Tpcpv1-2 (408')
Tpbt4 (429')
Tpy (435')
Tpbt3 (446')
Tpp (456')
Tpbt2 (464')
Tptrv2-3 (499')
Tptrv1 (510')
Tptrn (513')
Tptrl (603')
600'
Tptpul (620')
Tpcpv1-2 (414.5')
Tpbt4 (442.4')
Tpy (445.0')
Tpbt3 (466.4')
Tpp (472.9')
Tpbt2 (489.7')
Tptrv3 (508.5')*
Tptrv1 (522.1')*
Tptrn (525')
Tptpul (625')
Tptpmn (832')
Tptpmn (870')
900'
Tptpll (983')
Tptpll (985')
1200'
Tptpln (1240'?)
Tptpln (1261')
1258'
1330'
Tptpv3 (1443')
Tptpv1-2 (1487')
1500'
Tpbt1 (1555')
Tac (1557')
Tptpv3 (1456.0'?*)
Tptpv2 (1495.0'?*)
Tptpv1 (1514.0'?*)
Tpbt1 (1547.7'?*)
Tac (1554.3'?*)
Tacbt (1756')
Tcp (1784')
1800'
Tcp4 (1727.3')
Tcp3 (1739.9'): (Strongly vapor-phase altered subunit)
Current Depth 3/31/98 - 1760.0'
Third core interval from 1419.6'
to 1842' (est.)
2100'
Tcb (2238')
2400'
Potentiometric
Surface
2700'
Tpc (in Bold, Picked Col.) Contact picked from cuttings/core
Adjusted Core Intervals
Erionite Zone
Core Intervals and Erionite zones may be adjusted depending on the stratigraphy
* The suspected contact occures in an unrecovered (core) interval. The call is based on surrounding geology and ream chips.

ENCLOSURE 6

YUCCA
MOUNTAIN
PROJECT

Studies

Unsaturated Zone Transport Test

Busted Butte

U.S. Department of Energy
Office of Civilian Radioactive
Waste Management

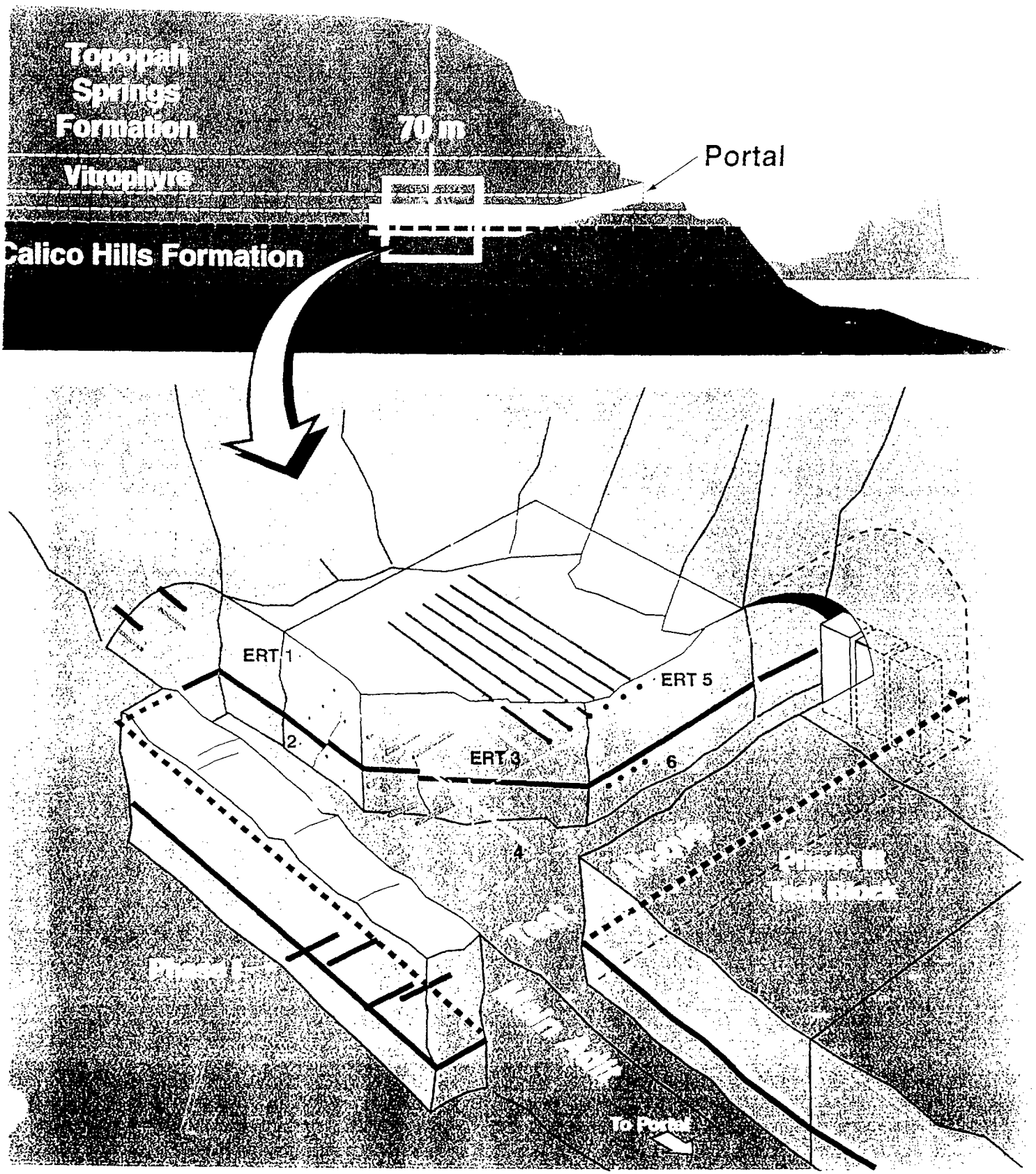
ENCLOSURE 7

Unsaturated Zone Transport Test at Busted Butte

Purpose:

- Address PA needs for flow and transport for TSPA-LA
- Validate lab data on radionuclide and colloid migration and/or sorption in fractured and unfractured CHn (Calico Hills non-welded) rocks
- Effect of heterogeneities on flow and transport in unsaturated and partially saturated CHn rocks
  - fracture/matrix interactions
  - permeability contrast boundaries
- Validate laboratory sorption experiments in unsaturated Chn rocks
- Calibrate/validate the 3-D site scale flow and transport process model
- Address scaling issues lab-scale / field-scale / site-scale

Busted Butte UZ Transport Test



Unsaturated Zone Transport Test at Busted Butte

Test Plan: Unsaturated Zone (UZ) testing is designed to proceed in three phases:

- **Phase I** consists of short (2m long) closely spaced injection and collection boreholes to give early results of matrix/fracture flow and transport.

- **Phase II** consists of a longer duration and larger test which uses radionuclide analog tracers. Phase I and II test run concurrently.

- **Phase III** tests support Performance Confirmation UZ transport testing/modeling and may include a thermal component and radioactive tracers

- LA testing status report 9/30/98; LA test results report 8/30/98

Unsaturated Zone Transport Test at Busted Butte

Status:

- Pad and high wall construction completed 12/17/97
- Contact between Calico Hills and Topopah Springs units encountered 1/13/98 at 43.2 meters into the main test adit
- Drill/blast of underground test adit and alcove (87 meters excavated) completed 1/30/98, a week ahead of schedule
- Drilling of eight 2m long Phase I and ten 7.5m and eighteen 10m long Phase II instrumentation boreholes completed 3/20/98, 8 weeks ahead of schedule
- Fracture mapping and hydrologic properties/geochemical testing for Phases I and II completed 3/10/98
- Phase I testing initiated 3/28/98
- Phase II testing is scheduled to start 7/21/98

Fact Sheet for Unsaturated Zone Transport Test at Busted Butte
(Phases I and II to LA Submittal)

UZ Field Test Stats:

Main Adit entrance dimensions: 40m x 3m x 3m
Main Adit test block dimensions: 28m x 6m x 6m
Test alcove dimensions: 19m x 6m x 6m
Main test block:
- Dimensions: 10m x 10m x 6m
- Volume: 600 cubic meters

Boreholes:
- Number: 36
- Total borehole length: 271m

Ground support systems:
- Rock bolts and welded wire mesh (for stability and safety only), throughout roof of test area
- Shotcrete beam support on walls where necessary

Costs (estimated):

Construction and Drilling: $3.1 million
Procurement, Design, Installation and Testing: $3.3 million
Total: $6.4 million

Tracers for Phase I and Phase II Tests:

Phase I:
- Lithium Bromide
- Potassium Iodide
- Fluorescent polystyrene latex microspheres (two sizes)
- Sodium Fluorscein
- Pyridone
- 2,4-difluorobenozic acid
- 2,6-difluorobenozic acid
- 2,4,5-trifluorobenozic acid
- 2,3,4,5-tetrafluorobenozic acid
- Pentafluorobenozic acid

Phase II (Same as Phase I plus the additional tracers listed):

Sodium molybdate dihydrate
Nickel (II) chloride hexahydrate
Cobalt chloride hexahydrate
Manganese chloride tetrahydrate
Samarium Chloride hexahydrate
Cerium (III) chloride hepahydrate
Sodium Perrhenate
Rhodamine WT

Testing Systems:

Injection Boreholes

Number of Injection Boreholes: 16 Total,
6 (Phase I) + 10 (Phase II)
Injection points per borehole: 1 (Phase I) + 10 (Phase II)
Number of Seringe Pumps: 12 Total,
2 (Phase I) + 10 (Phase II)
Number of Seringes per Pump : 6 (Phase I) + 10 (Phase II)
Injection Rates: 1-10 cubic centimeters per hour/per seringe
Total Injection Volume: 21.6 liters
(1,300 liters minimum-13,000 liters maximum)

Collection Boreholes

Number of Collection Boreholes: 14 Total,
2 (Phase I) + 12 (Phase II)
Collectors Pads per Borehole: 10 (Phase I) + 12 (Phase II)
Number of Collector Pads/Collection: 140 Total,
20 (Phase I) + 120 (Phase II)
Sampling Interval: weekly to bi-weekly
Total Number of Pad Analyses: ~30,000
Total Number of Laboratory Sorption Tests: ~1,200
Total Number of Hydrology Laboratory determinations: 60

Tomography Boreholes

Number of ERT Boreholes: 6
Number of ERT Electrodes: 120
Sampling Interval: monthly

Modeling Predictions, Performance Measures and Code Validation:

Computer Codes:

Scoping Calculations and Test Design: :FEHMN, GEOMESH
Performance Measures/ Predictions and Sensitivity Analyses:
FEHMN, 2-D and 3-D Stochastic Flow and Transport modeling

FEHMN: multiphase, fully coupled finite element/finite volume flow and reactive transport. Interfaced with RC^2 geostatistical package.

GEOMESH: An unstructured hybrid finite element/volume griding tool kit for building and optimizing computational grids. Fully automated mesh generation linked to industry standard geologic framework models (STRATAMODEL, LYNX, Earth Vision).

Measurement Systems:

Hydrological:

Neutron moisture logging
Electrical Resistance Tomography (ERT)
Ground-Penetrating Radar Tomography (GPR-T)
Video Surveys
Air-Permeability Surveys (minimal impact low-rate extraction)

Tracers:

Collection Boreholes
Eiectrical Resistance Tomography (ERT)
Video Surveys
Overcoring (Phase I)
Partial Mineback (Phase II)

STATE OF NEVADA
LEGISLATIVE COUNSEL BUREAU
LEGISLATIVE BUILDING
401 S. CARSON STREET
CARSON CITY, NEVADA 89701-4747
Fax No (702) 687-5962

LORNE J. MALKIEWICH, *Director*
(702) 687-6800

LEGISLATIVE COMMISSION (702) 687-6800
RICHARD D. PERKINS, *Assemblyman, Chairman*
Lorne J. Malkiewich, *Director, Secretary*

INTERIM FINANCE COMMITTEE (702) 687-6821
WILLIAM J. RAGGIO, *Senator, Chairman*
Daniel G. Miles, *Fiscal Analyst*
Mark W. Stevens, *Fiscal Analyst*

Wm. GARY CREWS, *Legislative Auditor* (702) 687-6815
ROBERT E. ERICKSON, *Research Director* (702) 687-6825
BRENDA J. ERDOES, *Legislative Counsel* (702) 687-6830

MEETING NOTICE AND AGENDA

Name of Organization: Nevada Legislature's Committee on High-Level Radioactive Waste
(*Nevada Revised Statutes* 459.0085)

Dates and Times of Tour and Meetings:

Tuesday, March 10, 1998
6:30 a.m.
Yucca Mountain Science Center
4101B Meadows Lane
Las Vegas, Nevada

and

Wednesday, March 11, 1998
9:30 a.m.
Grant Sawyer Office Building, Room 4412
555 East Washington Avenue
Las Vegas, Nevada

Note: On March 11, 1998, some members of the committee may be attending the meeting and other persons may observe the meeting and provide testimony, through a simultaneous video conference conducted at the following location:

Legislative Building
Room 4100
401 South Carson Street
Carson City, Nevada

AGENDA

March 10, 1998 - Tour of Yucca Mountain Project by United States Department of Energy Staff

Note: Any person wishing to accompany the tour must obtain a badge from the United States Department of Energy's (DOE) Yucca Mountain Project Office (YMPO) to enter the Nevada Test Site. Please contact Charlie Germack of the YMPO at 702/794-1339 by March 1, 1998. Be prepared to provide the following information: full name, date and place of birth, Social Security number, and the date and name of the tour.

March 11, 1998

I. Opening Remarks and Introductions by the Chairman.
Assemblyman Bob Price

*II. Approval of Meeting Minutes of December 4 - 5, 1996, and November 3 - 4, 1997, meetings.

III. Reports to Committee.

ENCLOSURE 8

A. Update on Status of the Radioactive Waste Program by the United States Department of Energy. Topics to Include:

1. The underground and surface scientific studies relating to the Yucca Mountain Site Characterization project.

2. The elements, progress, and schedule of the Viability Assessment Report.

3. The Yucca Mountain Environmental Impact Statement.

4. The proposal to implement the Notice of Waste Acceptance, Storage, and Transportation Services. (Market Driven Approach)

B. Update on the Nevada Agency for Nuclear Projects'(NANP) Activities by Agency Staff. Topics to Include:

1. Overview of State's scientific studies and other oversight efforts.

2. Stan of legal actions involving the state or being monitored by the NANP.

3. Other nuclear waste programs.

a. Shipments of foreign reactor nuclear waste.

b. Low-level radioactive waste shipments to the Nevada Test Site.

C. Update on the U.S. Nuclear Regulatory Commission relating to the Yucca Mountain Project.

D. Update on Oversight Activities of the Affected Units of Local Governments.

E. Update on National Conference of State Legislatures - High-Level Radioactive Waste Interim Storage and Transportation Working Group.

IV. Public Testimony.

V. Comments and Discussion by Committee Members.

VI. Adjournment.

*Denotes items on which the committee may take action.

Note: We are pleased to make reasonable accommodations for members of the public who are disabled and wish to attend the meeting. If special arrangements for the meeting are necessary, please notify the Research Division of the Legislative Counsel Bureau, in writing, at the Legislative Building, Capitol Complex, Carson City, Nevada 89701-4747, or call Nenita Wasserman, at 687-6825, as soon as possible.

Notice of this meeting was posted in the following Carson City, Nevada, locations: Blasdel Building, 209 East Musser Street; Capitol Press Corps, Basement, Capitol Building; Carson City Courthouse, 198 North Carson Street; Legislative Building, Room 1214, 401 South Carson Street; and Nevada State Library, 100 Stewart Street. Notice of this meeting was faxed for posting to the following Las Vegas, Nevada, locations: Grant Sawyer State Office Building, 555 East Washington Avenue; Clark County Office, 500 South Grand Central kway.

Director's Program Review
Friday, March 13, 1998
Videoconference Rooms: M&O Contractor (Dunn Loring), DOE/Forrestal, Room GF-277, and YMSCO Blue Room

Time (PST)	Subject	Presenter
7:00 AM - 7:05 AM	Recognition of Visitors	Conner
7:05 AM - 7:10 AM	Opening Remarks	Barrett
7:10 AM - 7:20 AM	Program Status Overview Program Performance Status	Rousso
7:20 AM - 8:45 AM	YMSCO Overview AML Accomplishments and Activities Status of Regulatory and Scientific Program Activities for First and Second Quarters of FY98 Status of Design and Engineering December 1997 - February 1998 YMP Performance Measurement	 Dyer Brocoum Williams Spence Kozai
8:45 AM - 9:05 AM	WAST Project Overview WAST Performance Measurement	 Shelor Bokhari
9:05 AM - 9:20 AM	Quality Assurance Overview QA Performance Measurement	Horton
9:20 AM - 9:40 AM	Program Management and Administration Overview PM&A Performance Measurement	 Rousso Trebules
9:40 AM - 9:50 AM	Review of the Day's Action Items	Conner
9:50 AM - 10:00 AM	Questions from Visitors	All
10:00 AM - 10:15 AM	Lunch at Seats	
10:15 AM - TBD	Executive Session	

LIST OF ITEMS/SUBJECT MATTER FOR 3/23/98 OR MEETING WITH R. DYER

o CURRENT QA ISSUES FYI (B. BELKE)
- OPEN ITEMS
- LENGTH OF TIME TO CLOSE DOE DEFICIENCIES
- LENGTH OF TIME TO CLOSE NRC QA OPEN ITEMS
- LENGTH OF TIME TO GET CAR ISSUED
- TRENDING PROGRAM
- GRADED QA EFFORT
- SCP QUESTION/SP COMMENT
- ENHANCING QA DIALOGUE BETWEEN DOE/NRC
- SUPPLIER AUDIT NOTIFICATION
- DOE QA REORGANIZATION

o MISQUOTES IN LAS VEGAS SUN ARTICLE ON NRC PRESENTATION (B. BELKE)

o NRC UPDATE ON GLOBAL POSITIONING SYSTEM SURVEY WORK CONDUCTED IN VICINITY OF YUCCA MTN. (C. GLENN)

o NRC STAFF INTEREST IN YMP EFFORT FOR GEOPHYSICAL REVIEW AND EVALUATION OF EXISTING DATA (C. GLENN)

o ANY RECENT DOE EFFORTS OR INNOVATIONS IN QUALIFYING EXISTING DATA (R. DYER)

o OTHER (R. DYER)

Devils Hole Workshop

Longstreet Inn and Casino
March 19 and 20, 1998

AGENDA

8:00 A.M.	Introduction	Les Bradshaw and Nick Stellavato, Nye County
8:15 A.M.	Devils Hole Water Level History	Mel Essington, U.S. Park Service
8:45 A.M.	Southern Nye County Water Supply and Demand Issues	Tom Buqo, Nye County
9:15 A.M.	YMP - NTS Model Merging Update, Part I	Frank D'Agnese, USGS
9:45 A.M.	BREAK	
10:00 A.M.	Results of Flow and Tracer Testing at the C-Well Complex	M. J. Umari, USGS
10:15 A.M.	Status of the U.S. Government Inter-Agency MOU	Steve Bartell, Trial Attorney, U.S. Depart of Justice
10:30 A.M.	YMP - NTS Model Merging Update, Part II	Claudia Faunt, USGS
11:00 A.M.	Water Planning for Southern Nye County	Naomi Duerr, Nevada State Water Planner
11:30 A.M.	Water Law and Water Resources of the Devils Hole Flow System	Mike Turnipseed, Nevada State Water Engineer
12:00 P.M.	LUNCH (Buffet available for $8.23 per person {includes tax and tip})	
1:00 P.M.	Rural Counties Perspectives on Groundwater Issues	Steve Bradhurst, Planning and Management Consultant
1:30 P.M.	Results of Tracer Test at the Bullion Forced Gradient Experiment NTS	Rick Waddell, HSI GeoTrans
2:00 P.M.	Anomalous Groundwater 234U/238U Beneath YM: Evidence of Local Recharge?	Jim Paces, USGS
2:30 P.M.	Three-Dimensional Look at the Basement Beneath Amargosa Valley	Richard Blakely, USGS
3:00 P.M.	BREAK	
3:15 P.M.	NWRPO's Saturated Zone Modeling and the 'EWDP'	Parviz Montazer, METI
4:00 P.M.	Revisions to Water Budget for the Death Valley Flow System	Ralph McCracken, Southern Nye County Conservation District/Mike Delee, Amargosa Water Committee
4:30 P.M.	Closing Remarks and Discussion of Field Trip Details	Nick Stellavato, NWRPO and Russ Patterson, DOE/YM
5:00 P.M.	Adjourn	

ENCLOSURE 11