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MEMORANDUM

DATE: February 14, 1986

FOR: Robert E. Browning, Director
Division of Waste Management

FROM: Paul T. Prestholt, Sr. OR - NNWSI *PTP*

SUBJECT: NNWSI Site Report period December 16, 1985 through
February 14, 1986

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I. LICENSING AND NRC INTERACTIONS

During the TPO-Project Manager meeting held on January 23 and 24, SAIC gave a presentation on licensing and NRC interactions. The December 3-4 Seismic/Tectonic Meeting was revisited and the DOE and NRC commitments were briefly discussed. These commitments are:

DOE commitment: Propose a date for another meeting to discuss

"Probabilities" and "ORR Record File"

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NRC commitment: To provide comments on DOE's definitions, particularly those for "active fault," and "anticipated," and "unanticipated."

As of January 24, the DOE had not received NRC's comments on the definitions.

There was a discussion of NRC rulemaking activities, particularly the incorporation of the EPA Standard (40 CFR 191) into the NRC technical criteria (10 CFR 60), the procedural amendments to 10 CFR 60 and the revisions to 10 CFR 20. The NNWSI plans to pay particular attention to how NRC incorporates 40 CFR 191 into 10 CFR 60. We can expect comments.

The NNWSI is very interested in the implementation of 10 CFR 21 and 10 CFR 60.73. It has been determined that the above rules do not apply to DOE or DOE contractors until DOE becomes a licensee. The DOE plans to develop internal procedures for reporting defects discovered during site characterization activities. It is planned that defects would be reported to the manager of the project office concerned. Defects identified during site characterization would not be reported to the NRC.

Included with this report is a handout that discusses a number of items concerning the "Exploratory Shaft - Design and Construction." Included is a list of interactions (letters and meetings) between the NRC and DOE and between SNL and LANL and WMPD. Also included in this handout is a list of NRC concerns relating to:

- Performance Analysis
- Design and Construction of the ES

taken from the November 25, 1985 letter, Linehan to Vieth. Further, there is a list of commitments made by the NRC at the August 27-28, 1985 Exploratory Shaft Design Meeting. Question - When will these commitments be satisfied?

II. SCP SCHEDULE

There is a new direction on the SCP schedule and content, as a result of a OCRWM meeting in Denver the week of January 6, 1986. Included with this report is a handout that details the results of that meeting. Important information to be found in this handout includes:

- December 22, 1986 Issuance (of SCP)
- 2000 page document size
- Performance Allocation to be woven into document
- Section 8.3 Discussions at Information Level - Test Descriptions Presented Later
- A list of Agreements from DOE Hq regarding the production of Chapter 8.3
- That the NNWSI can follow its proposed outline (included in handout) for chapter 8.3 and that this outline is consistent with agreements DOE made with NRC
- A list of planned tests, analyses and studies
- A graphic depiction of the level of detail of issues and tests that will be included in the SCP and that will be found in references
- An outline showing where performance allocation will be discussed in the SCP
- A discussion of the quality level of the SCP (to be level II) and the ramifications of making the SCP @ level I.

The question was posed as to whether or not the NRC will accept a 'descoped' SCP. This is an open question waiting NRC/DOE discussions. However, the NNWSI is proceeding under the assumption that an agreement, along the lines proposed, will be consummated.

Five workshops with the NRC are proposed as follows:

- Issues hierarchy March 5
- Performance Allocation March 20
- Geochemistry-Hydrology April 15
- Seismic-Tectonics May 14
- ESTP June 12

These dates are proposed assuming NRC will accommodate a schedule with meetings taking place during the period between first draft input and internal review meeting for each chapter/section. Further, NNWSI project preparation to be limited to one week; NO formal responses planned; comments and suggestions will be considered during IRC and CRP periods.

The rest of the handout discusses a number of important aspects of SCP preparation and productions. It is important that the Staff understand the problems and restrictions that will be present for the rest of this calendar year, particularly the availability of personnel resulting from the production of the NNWSI SCP.

III. PLANNING/SCHEDULING NETWORK STATUS DOCUMENT

The above document presenting the status of the NNWSI project as of December 31, 1985, was made available at the January TPO-Project Manager meeting. This document was sent to King Stablein at the end of January. This document details the status of the major elements of the NNWSI project by Work Breakdown Structure (WBS). The data are presented on a series of pert charts showing level 1 through 4 milestones for each element of the investigation. Level 1 milestones are to DOE Hq; level 2 milestones are to WMPO, and levels 3 & 4 are internal to the particular participant.

This is a comprehensive document designed to aid the NNWSI in project control. It will be updated. Copies may be obtained from King Stablein.

IV. STATE [Nevada] COMMISSION ON NUCLEAR PROJECTS

The second meeting of the State Commission on Nuclear Projects was held on Friday, February 7, 1986. The Commission was established by the State Legislature during the last session to oversee the Agency for Nuclear Projects, previously known as the "Nuclear Waste Project Office of the State of Nevada" and to set policy concerning nuclear waste for the State. The Commission members are:

- Grant Sawyer, Chairman Ex-governor & Attorney Las Vegas
- Thalia Dondero Clark County Commissioner Las Vegas
- James Cashman III Businessman Las Vegas
- Frank Caine President, Southern Nevada Building & Construction Trade Council (a union) Las Vegas
- Ann Pierce Insurance Broker Reno
- Michon Mackedon (Mrs.) Professor Fallon Community College Fallon

The meeting agenda is enclosed.

The highlights of the meeting are as follows:

1. Mr. Bob Loux, Director of the Agency for Nuclear Projects reported:

- The State has filed a motion with the 9th District Court of San Francisco to clarify their decision and to Order implementation of the decision by February 15, 1986. [I have asked for a copy of the Motion];

- The State wishes to be a full party in licensing, not an intervenor, and wishes this to be put in Law [Regulation];
 - The State wants NRC to change the procedural rule (10 CFR 60) "wholesale", not piecemeal, to comply with the NWSA
 - Loux's office has hired a Health Physicist, Peter Spiegler, from New Mexico, and is in the process of hiring a Repository Engineer;
 - The State is ready to issue an RFP for a QA contractor as soon as funding is received from DOE.
2. Joe Strollin, of Loux's office reported that the State is about to let a Socio-Economics Contract to Mountain West Research of Tempe, Arizona.
 3. Senator Tom Hickey, Chairman of the Legislative Committee on Nuclear Waste discussed the forthcoming effort to enter into a consultation and cooperation agreement with DOE and reminded the Commission that the legislature has a role and that the Commission and the Committee must be partners.
 4. Seven applicants, including Bob Loux, will be interviewed this month for the Office Director's post. Three names will be settled on at the next meeting, March 14, in Las Vegas, for submission to the Governor.
 5. There were three proposed Resolutions:
 - 1 - Number of sites to be characterized and number needed at time of single site recommendation;
 - 2 - Liability in case of nuclear accident;

3 - Use of nuclear waste funds for judicial review.

All passed unanimously, even though the Commission expressed ignorance of the issues and of their own responsibilities. This action seems to have been a "rubber stamp" of the Governor's position.

6. Jim Davenport, the attorney that handled the suit against the DOE, explained the State's interpretation of the 9th District Court's Opinion. In reading the Opinion, it seemed to me that the language was very clear as to the limitations imposed by the Opinion. I cannot reconcile my reading of the Opinion with Mr. Davenport's. It is hoped that the clarification that the State is seeking from the Court will remove all ambiguities.
7. Dr. Don Vieth presented an overview of the NNWSI project to the Commission. During the question period after his presentation, Dr. Vieth was subjected to an unnecessarily hostile line of questioning by Mr. Grant Sawyer, Chairman of the Commission. Mr. Sawyer's major problem concerned the fact that the criteria being used by DOE Hq. to chose the sites to be characterized is not available to the State. Dr. Vieth explained that the details were not available to himself. This fact only spurred Mr. Sawyer on. The State's feeling that it is not being treated fairly by the DOE was very forcefully presented.
8. The Commission is planning to invite both Ben Rusche and John Davis to make presentations at either their March or April meeting. I believe Mr. Davis should consider the Commission's behavior toward Dr. Vieth before accepting such an invitation.

V. GEOLOGY-HYDROLOGY

During the January TPO-Project Managers meeting, the USGS gave a presentation on "Rock Properties." The discussion centered on the Key Issue (from the NNWSI Issue Hierarchy) "will the site isolate waste, post closure?" I was not present for this discussion and the viewgraphs are rather poor.

The three areas of investigation under this heading, with the investigators responsible are:

- | | |
|-----------------------|-------------------------|
| - Borehole Geophysics | Doug Muller & Don Healy |
| - Rock Properties | Len Anderson |
| - Paleomagnetism | Joe Rosenbaum |

There was apparently no discussion as to what problems the above studies will help solve. We will have to keep our eye on this.

Jerry Szymanski and Uel Clanton, DOE-WMPO, presented another scenario for the origin of the calcite-silica-sepiolite deposits found in the vicinity of Yucca Mountain (Trench 14). The USGS considers these deposits to be pedigenic. Szymanski/Clanton suggested that they may be spring deposits. A working group was established to resolve the issue. The group consists of representatives from LLNL, LANL, WMPO, USGS, SNL, and SAIC.

The first meeting of the working group is scheduled for February 28, from 10:00 a.m. to 3:00 p.m. in Room 203 at the Las Vegas SAIC office.

The NRC has been invited to attend. I understand that John Bradbury, WMGT is planning to attend with me. The agenda is enclosed.

In January, Jerry Szymanski, DOE-WMPO and I went to Tecopah Springs, California to look at springs that are presently depositing material similar to the Trench 14 deposits. There are a number of such features in the area and are well worth a visit by Staff when visiting the site.

IV. GEOCHEMISTRY

In January, Dr. Jerry De Poorter, LANL, forwarded two documents to Dr. John Bradbury, WMGT for review. Both documents are authored by Dr. Jerry Kerrisk, LLNL and are titled "Solubility Experiments for the NNWSI, LA-10560-MS" and "An Assessment of the Important Radionuclides in Nuclear Waste, LA-10414-MS." After NRC review, Dr. De Poorter requests an Appendix 7 meeting with the NRC Staff to discuss the content of the two reports.

The possibility of holding the above meeting is an open item.

VII. ROCK MECHANICS

During the January TPO-Project Manager Meeting Sandia National Laboratories gave a presentation on rock mechanics - laboratory properties. The handout for this presentation is enclosed.

The discussion included:

- What data are being measured
- Where data are used
- Present work
 - Responsibilities
 - Status
 - Schedule
 - Cost

- Planned work
- Post-closure Issues
- Pre-closure Issues
- Quality Assurance Levels

The handout seems to be self-explanatory.

It has been noted that "smooth wall blasting" tests are being conducted in "G" Tunnel. King Stablein asked if the NRC could observe these tests, preferably during the week of March 3rd. I asked Larry Skousen, DOE-WMPD Engineering Branch Chief, if there would be an objection to an NRC presence and he gave the green light. Mr. Skousen didn't know the schedule for the week of the 3rd, and he will get back to me.

VIII. WASTE PACKAGE

A presentation on the Waste Package environment was given by LLNL at the January TPO-Project Manager meeting. The discussion focused on the near field hydrology and its effect on the Waste Package and on "other materials" particularly grout.

The study will "Provide detailed information regarding the environment affected by emplacement of high level nuclear waste packages. To provide this information, activities are under way which will characterize:

- " - the effect of radiation on the package environment
- " - the effect of package thermal history on the near-field hydrology
- " - the chemical processes resulting from tuff-water interaction at elevated temperatures."

Of particular interest is the use of "computed impedance Tomography" (CIT). As stated, "The CIT allows real-time mapping of porosity during sample dehydration and rehydration under experimental conditions." This technique is a direct application of the principles of geotomography.

Geotomography was developed by LLNL with support by the NRC office of Research. Dr. Ernst Zurflueh, Office of Research, monitored this contract for the NRC and details of this technique can be obtained from Dr. Zurflueh. A brief discussion of this work is presented in the enclosed handout.

The work on "Other Materials," particularly grout, has not started. An outline of the plans to accomplish this task is enclosed.

IX. REPOSITORY SEALING PROGRAM

A discussion of the Repository Sealing Program was given jointly by SNL and LANL. The Sandia presentation referred to the issues under the NNWSI issue hierarchy that are impacted by repository sealing. The discussion then dealt with the organization of the sealing program, schedules, and materials development.

The LANL discussion dealt with work responsibilities, the outline of geochemical investigations, personnel working on the project, objectives, dissolution, mineral alteration, tests to be performed, permeability (darcy), unconfined compressive strength, feasibility of testing, and transfer of data. The handouts for this discussion are enclosed.

X. QUALITY ASSURANCE

1. A meeting concerning software QA was held in Las Vegas on January 14-15, 1986. Discussed were QA levels for Scientific and Engineering Software (SES) and auxiliary software. The two types of software are defined in QA SOP-03-02 (attached). In simplest terms, SES includes any program containing mathematics and auxiliary is everything else.

SES is considered to be level I. Auxiliary, however, may be level I, II, or III. It was decided that WMPO would establish a committee to develop baseline QA requirements for auxiliary software. They will use John Evans' (USGS) draft auxiliary software procedure as a strawman.

2. I attended the "Nuclear Waste Management QA Topical Conference" in San Diego, California on January 20-21, 1986. There were a number of very interesting discussions and others that were cause for concern.

I left San Diego with the feeling that the QA professionals are still struggling with the basic concepts of QA. I had hoped to find a consensus among the pro's as to what were the elements of a successful QA program for nuclear activities. I found NO consensus. Quite the opposite. I've discussed this with Dale Hedges and with the NNWSI QA team. They all seem to feel the same way. It's getting late in the game to be floundering in indecision on this vital issue. There is obviously much work left to be done to come to very basic understandings.

3. In line with the above comments, the NNWSI QA audit team just completed an audit of LLNL. This audit was to be both a procedural audit and a technical audit. As reported by members of the audit team, there were problems. Since I was not there, it is difficult to comment. However, some points can be noted:

- There was no effective technical audit. The auditor was not allowed to investigate a number of procedures that had been supplied by LLNL;
- The QA organization at LLNL does not monitor QA level III activities;
- Most investigations now being conducted are classified level III;
- Since there is no lab-wide QA organization, the QA organization at LLNL is very different from the QA organizations at the other participants. This is not necessarily bad, but it is causing some concern at WMPO (SAIC).
- The most important point is the feeling among the audit team that the audit did not accomplish its mission.

XI. GENERAL

1. King Stablein will be in Las Vegas during the Week of February 17, for discussions with the NNWSI project management and with SAIC.
2. Dinesh Gupta, WMEG, attended a meeting on the advanced conceptual design of the repository in Albuquerque, New Mexico on February 11. This was to be a three day meeting, but the schedule was changed, making the last two days a "strategy meeting" from which the NRC was excluded.

It is reported that Gupta feels that he gained important information and that the trip was a success.