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February 12, 1985

MEMORANDUM FOR: Robert E. Browning, Director  
Division of Waste Management  
  
FROM: Paul T. Prestholt, Sr. OR-NNWSI *PYP*  
  
SUBJECT: NNWSI Site Report for Weeks of Jan. 28 and  
Feb. 4, 1985

I. The TPO-NNWSI Project Director meeting for the months of December, 1984 and January, 1985 was held on January 31 and February 1, 1985. A number of subjects of interest to the staff were discussed.

1. On April 14, 1983, Seth Coplan sent a letter to Don Vieth concerning exploratory shaft construction and sealing. At that time, DOE's schedule called for submission of an SCP for the NNWSI early in the last quarter of fiscal 1983 with an exploratory shaft start-of-construction date as early as November 1, 1983. The letter suggested that it would be prudent for the NRC and DOE "to complete and document the review of certain issues regarding exploratory shaft construction and sealing prior to the start of shaft construction." A number of issues and concerns that the NRC would like to address were then listed.

This letter was never answered. Not, as Dr. Vieth pointed out, because the NNWSI wanted to ignore the NRC's concerns, but because changes in schedule caused exploratory shaft issues to disappear into the future. The NNWSI recognizes that we are now at a point where the issues and concerns expressed in the letter are again germane and that the time has come for discussions.

The scope of a meeting between the NRC and DOE to discuss the April 14 letter was discussed and it became obvious that a meeting that would cover all the points may be several weeks long. The following are the major topics for discussion:

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1. Exploratory shaft design.
2. April 14 letter; particularly shaft sealing.
3. Exploratory Test Plan.
4. Performance assessment.
5. Quality Assurance--an open issue for both design and tests.

The obvious procedural question is whether there should be one large-scale workshop or a number of small topical meetings. The consensus was that the latter would produce far better results.

It was suggested that the NNWSI write a position paper on the above, based in part on the NRC April 14 letter, to be ready sometime in March or April. This position paper would be a starting point for meetings between the NRC and NNWSI to be held in April. There is a major milestone on the EA in July and the NNWSI would like the NRC input in time to incorporate NRC guidance.

2. DOE Headquarters is exploring the possibility of designating a common laboratory for testing by all projects, a common waste package design and material, and a common Architectural Engineer (AE). The NNWSI will develop a position on the common lab concept, but the initial reaction seemed negative. The NNWSI is against the idea of a common waste package design and material and Dr. Vieth is cautiously in favor of a common AE.
3. PNL has been designated by DOE-Hq. to work with DOE-Hq. to establish a joint OGR/Project Performance Assessment Scientific Support Program Technical Working Group (PASS). Don Alexander, DOE-Hq., will act as program manager and Dr. Michael Foley will head up the PNL group. The group will be made up of individuals from the projects (NNWSI, BWIP, ONWI, OCRD) and PNL technical staff will coordinate PASS activities.
4. Enclosed is a copy of the "Draft Management Plan for the Preparation of Final Environmental Assessments". There was comment from the TPO's on the seeming complexity of this plan.
5. The NNWSI management plan for preparation of the SCP was discussed. The "Orange Draft" refers to the draft SCP prepared in 1983. It is interesting to note the level of responsibility for preparation and review that has been given to SAIC.

6. Los Alamos National Laboratories gave a presentation on the "NNWSI Project Geochemistry Program". The viewgraphs used by the LANL staff are self-explanatory and a copy has been sent to Linda Kovach. Of interest and not included in the regular presentation are the preliminary results of LANL's investigation of the secondary mineralization found in fault zones disclosed in the trenches to the east and west of Yucca Mountain and noted during the geology data review, September, 1984. Dave Vaniman, LANL-MinPet, stated that 99% of the material is made up of calcite with amorphous and opaline silica and sepiolite (hydrated magnesium silicate, also known as meerschaum). This portion of the material was emplaced at temperatures less than 25 degrees Centigrade. The additional 1% is Drusy (highly crystalline) quartz and was emplaced at from 100 to 150 degrees Centigrade. The origin and ages of these deposits are under study. LANL (Vaniman) expects to issue a report in early summer.
7. A copy of preliminary key issues for the NNWSI issues hierarchy is attached.

II. On Monday, February 4, a meeting was held at the Test Site USGS core library between John Bradbury, NRC WMGT geochemistry section; Don Kelmers and Jim Blencoe, Oak Ridge National Laboratory and NRC contractor; Uel Clanton, DOE-WMPO; Mike Glora, SAIC; Virginia Oversby, Lawrence Livermore National Laboratory; Gerry De Poorter, Bruce Crowe, Kim Thomas, F. Lawrence, and Kevin Knauss, Los Alamos National Laboratory; Gary Dixon and Tim Hait, USGS; and Carl Johnson, State of Nevada. The purpose of the meeting was to identify and provide samples of Tuff and J-13 well water to NRC/ORNL for use in geochemical studies.

The meeting was a success from the standpoint of both the DOE and the NRC. Acceptable samples were identified (areas within the geologic column from which samples will be selected) and delivery was promised within 2 weeks. The technical interchange between the various parties was free and of benefit to all concerned. This meeting might be considered a model for future discussions between NRC and DOE technical staff on very specific subjects.

On the 5th, I escorted the NRC group on a tour of "G" tunnel, Sedan Crater, and Yucca Mountain. Roger Zimmerman, Sandia National Laboratory and Project Manager of the "G" tunnel rock mechanics studies, presented his work to the group. Of particular interest was the operation of an Alpine Miner. The machine was cutting a raise to an upper level and the ease with

which it advanced in the non-welded tuff was an eye opener. The added appreciation expressed by the group at the end of the day, of the good points and problem areas of the Yucca Mountain site and of tuff as an emplacement medium, makes it well worth the effort and cost to conduct such tours.

III. On Wednesday, February 6, I received a call from Marc Rhodes, WMRP, requesting identification of long lead time items and decision dates relating to those items (ES construction, shaft sealing techniques, in situ testing, etc.) referenced in Hub Miller's letter to W. J. Purcell dated January 25, 1985. I presented the problem to Jerry Szymanski, DOE-WMPO, and Mike Gora, SAIC, and we discussed the retrieval of these data at some length with the SAIC personnel responsible for tracking the NNWSI project. As usually happens, what seems to be a relatively simple task is quite complex and time consuming if fully implemented. The NNWSI is tracked by Milestones. Milestones are end points.

SAIC is putting together the information that can be quickly retrieved. If more is needed, an official request will have to be sent to WMPO.

IV. On Thursday, February 7, I received a copy of the first compilation of EA review comments. I am very impressed by the sophistication and, in general, the fairness of the staff's comments.