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To: Susan Bilhorn

phone 427-4682
MRLP

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From: Bob Cook

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MEMORANDUM FOR: Robert P. Browning, Director
Division of Waste Management

FROM: F. Robert Cook, Senior On-Site Licensing Representative, Basalt Waste Isolation Project (BWIP)

SUBJECT: COMMENTS ON EA'S

1. Appendix G, Glossary--The definitions of numerous terms in the glossary are inconsistent with definitions of the same terms in NWFA or 10CFR60 and/or the usage in the NWFA or 10CFR60. This inconsistency makes the EA hard to understand relative to the other two documents' requirements and hence likely confuses the public. Examples are as follows: backfill (waste package), closure, disposal, engineered-barrier system, geologic repository, geologic-repository operations area, geologic setting, high-level radioactive waste, license application, licensing, natural system, performance confirmation, pre-waste-emplacement, quality assurance, quality control, Quaternary Period, radioactive waste, repository system, repository, Safety Analysis Report, underground facility.

Of particular concern is the definition of "repository" and "geologic repository" which are stated to be synonymous. The definition appears inconsistent with the definition of "repository" in NWFA. The NWFA definition "means any SYSTEM licensed by the Commission that is intended to be used for, or may be used for, the permanent deep geologic disposal of high-level radioactive waste and spent nuclear fuel..." It does not appear that the EA definition includes the waste packages and the other parts of the "engineered-barriers" (defined in NWFA) that provide containment and or isolation functions and are part of the disposal system in the context discussed in the NWFA definitions. This would also appear to be a short coming of the definition of "geologic repository" in 10CFR60.2, since the definition does not appear to include the waste packages and the engineered-barriers that contribute to containment and isolation functions of the disposal system.

All the other terms noted above contain small or sometimes significant wording changes from what has heretofore been used in various official government documents and related laws. I have a hard time grasping all the differences and applying the differences to my reading and understanding of the EA. Such differences are bound to confuse and/or mislead the public. I consider the draft EA should be revised to eliminate these inconsistencies.

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2. Section 6.3.1.7.10, p 6-135, Tectonic Disqualifying condition-- This section does not consider current conclusions about faulting within the site described in SD-EWI-TI-177, "Reprocessing and Interpretation Seismic Reflection Data Hanford Site, Pasco Basin, South Central Washington". This report, dated 12-16-83, identifies interpreted faults and potential faults in the Reference Repository Location and the geologic setting which would be part of the repository. In addition this section and its references do not appear to address the effects of glaciation on the activity of faults and the geologic setting in general during the Quaternary Period (for example, up to 1,000,000 years ago.) Activity at faults could likely increase vertical communication among aquifers during and for a period after the activity occurs. Depending upon the hydraulic gradients at the time, such communication could cause a loss of waste isolation. This scenario was not assessed in the EA.

(Note this disqualifying condition statement requires that fault movements during the Quaternary (at least the last 1,000,000 years) be considered as to their effects on causing likely loss of waste isolation. The EA should be modified to include such an assessment.)

3. Section 6.3.1.1.9, Potentially adverse condition--presence of ground-water sources suitable for crop irrigation or human consumption... The assessment of this condition does not appear to take into account information on the actual chemistry of ground-water taken from the Grande Ronde or other zones in Washington and Oregon for crop irrigation purposes. For example there is irrigation being accomplished north of the Columbia River, several miles from the site, and to the east of the river. The USGS has the pertinent chemistry data and is using it in evaluating increasing sodium content in wells on the Columbia Plateau. Such information may reveal that the ground water at and below the reference repository horizon is not unlike waters being used elsewhere in the two state area.

In addition it would appear to be appropriate to utilize the average or mixed water chemistry for the entire volume of water between the water table and the deepest zone of interest in assessing water quality for crop irrigation, since deep irrigation wells could draw water from all strata, mixing it in the process and thereby more efficiently use the entire water resource available.

The EA should be revised to include consideration of pertinent water chemistry data available to the USGS, the State, and the public through FOIA.

4. GENERAL EA COMMENT--References to quality assurance procedures and quality assurance records used and generated respectively in connection with the decision making performed by DOE in ranking the sites and by the specific projects in drawing conclusions

relative to each of the guidelines is missing in the EA's. For example, the project specific decisions involving the BWIP effective porosity and ground water travel time assessment utilized a panel of experts to reach decisions described in the EA, as well as, internal BWIP and DOE decision makers.

The documents describing the procedures used in such decision making processes and the records providing verification that processes are objectively invoked should be identified and made available to the public upon request to provide evidence of this objectivity.

In general original records from the various contractors and within DOE generated in preparing the EA's should be identified in the EA's to allow public confirmation of the quality of the EAs' conclusions. Also, since many of the EA conclusions will form the basis for additional planning to be documented in SCP's and the basis for assessments in DOE's Environmental Report and their EIS and hence will be subject to licensing reviews in the future, it appears necessary at this time to identify and document the entire record and confirm its quality now.

F. Robert Cook
Senior On-Site
Licensing
Representative
BWIP

cf:
JOBunting
HJMiller
MRKnapp
JMHoffman
TRVerma
PTPrestholt
JKennedy
JTGreeves
RJWright
FRCook