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MEMORANDUM FOR: Hubert J. Miller, Chief
Repository Projects Branch
Division of Waste Management

FROM: John T. Greeves, Chief
Engineering Branch
Division of Waste Management

SUBJECT: REVIEW OF "PERFORMANCE ASSESSMENT NATIONAL
REVIEW GROUP, FEBRUARY, 1985, FINAL REPORT"

The PANRG Report has been reviewed, per your request, by WMEG staff. The staff considers that the report has not identified any technical issue unfamiliar to the NRC staff. Rather, the observations/recommendations of PANRG reinforce many NRC comments including many of those made in NRC review comments of DOE's Draft Environmental Reports. It appears that the PANRG Report can be used to support numerous NRC comments. Attached are a few specific comments related to the technical aspects of waste package and engineered barrier system performance assessment. These show general agreement between PANRG and NRC positions.

ORIGINAL SIGNED BY
John T. Greeves

John T. Greeves, Chief
Engineering Branch
Division of Waste Management

Attachment:
As stated

WM Record File

109.2

WM Project 1

Docket No. _____

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1. Verification and Validation of Models used in Performance Assessment (P. 22 of PANRG Report)

The PANRG considers that the presentation by the projects (BWIP, Salt, and Tuff) on this to be incomplete (p. 22, third paragraph). Specific examples of this inadequacy include WAPPA (p.23) and CHAINT (p. 24, CHAINT is a fore-runner of CHAINT-MC). In addition, BWIP was specifically requested to brief PANRG on geohydrologic models developed by BWIP (p. 39, i.e., PORFLO and MAGNUM) but did not do so. Both BWIP and NNWSI did not present a model that could handle two-phase, two-component flow which could result from the heat from the waste package creating a complex flow regime of steam, air and water (p. 40, third paragraph).

CHAINT-MC and MAGNUM-MC were among the models/codes NRC considered should be released by DOE to others (including NRC) for independent evaluation. (See NRC review of Hanford EA, p. 107 and NRC comment 6-20.)

2. Uncertainty and Stochastic Analyses, Sensitivity Analysis (P. 25 to 27, PANRG REPORT)

The PANRG Report discusses the general importance of these related analyses to the projects and to performance assessment. NRC provided comments on these in NRC review of the EA's (e.g., NRC review of Hanford EA, comments 6-89, 6-93, and 6-94 and 6-95 and 6-96).

3. Containment in Waste Package (P. 30-31, PANRG Report)

The PANRG considered the BWIP approach of "uniform corrosion only" on "containment in Waste Package" "probably inadequate for licensing." Other forms of corrosion and failure modes must be considered.

NRC addressed this topic in NRC's comments on the EA's also (e.g., Major Comment No. 8 of NRC comments on Hanford EA).

4. Release Rate Requirement (P. 33, PANRG Report)

The PANRG points out that various definitions of the engineered barrier system appear in the Nuclear Waste Policy Act, the NRC regulations and DOE siting guidelines. The NRC has identified the importance of resolving these differences, clarification of the definition of the engineered barrier system has been included as a task for the internal Engineered Barrier System Review Group.