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SEP 22 1983

MEMORANDUM FOR: Those on Attached List

FROM: Daniel J. Fehringer
High-Level Waste Licensing
Management Branch
Division of Waste Management

SUBJECT: SUMMARY MEETING NOTES OF THE BWIP PERFORMANCE ASSESSMENT WORKSHOP

Attached for your information are the summary meeting notes of the BWIP Performance Assessment Workshop which took place in Richland, Washington August 29 through September 1, 1983.

A limited number of copies of Attachments 3 through 5 will be forwarded shortly under separate cover. Please notify me if you require additional information.

Original Signed By:

Daniel J. Fehringer
High-Level Waste Licensing
Management Branch
Division of Waste Management

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R. E. Browning
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J. O. Bunting
E. Conti
B. Buchbinder
P. S. Justus
J. T. Greeves
M. R. Knapp
R. Wright
C. Belote
T. McCartin
J. Randall
M. J. Gordon
M. F. Weber

SUMMARY NOTES
NRC/BWIP WORKSHOP ON PERFORMANCE ASSESSMENT
RICHLAND, WASHINGTON
AUGUST 29 - SEPTEMBER 1, 1983

Agenda: See Attachment 1.

Attendees: See Attachment 2.

Technical Developments:

As indicated in Attachment 1, the main purpose of the workshop was to seek a consensus on the approach for addressing the comments by the Nuclear Regulatory Commission (NRC) in NUREG-0960 concerning the Basalt Waste Isolation Project (BWIP) performance assessment. As a vehicle for presentation of NRC views, a "Discussion Paper on Performance Assessment at the BWIP" was transmitted to BWIP before the meeting (Attachment 3). Major open items that were agreed to in the June 13-17 clarification meeting appear as Attachment 4.

Significant developments of the workshop are described below. The materials presented for discussion by BWIP form Attachment 5.

Understandings:

- In general, considerable parallelism in the approach to performance assessment is evidenced in the workshop presentations by the BWIP (Attachment 5) and the draft "Discussion Paper on Performance Assessment" of the NRC.

- Considerable progress is being made in uncertainty analysis and sensitivity studies. The NRC will review and comment on the proposed uncertainty methodology in RHO-BW-CR-140P, "Numerical Modeling of Parametric Uncertainties in Flow Through Porous Media Column Developments and Initial Testing of PORSTAT."

- Code verification work appears to be proceeding satisfactorily, but NRC will need documented results to review in detail. The BWIP's code testing plans will be reviewed by the NRC when available.

- The NRC presented its understanding of the Environmental Protection Agency's (EPA's) intent with respect to demonstration of compliance with the EPA High Level Waste Standard, suggesting that a probabilistic risk analysis approach is required. The BWIP indicated that the feasibility of implementation needs examination.

- In about three weeks, BWIP will comment on the NRC discussion paper.

- The NRC discussion paper provides guidance on the concept and geometry of the disturbed zone. The BWIP will provide questions about the guidance, and NRC will respond with clarification.

- The NRC suggests that BWIP consider publication of a description of the plan, logic, methodology, and procedures for scenario development. The NRC also suggests that BWIP consider procedures for identifying and inputing public concerns in the scenario development. For the delphi approach described by BWIP, a procedure should be considered for obtaining input from outside groups, including the public, in addition to input from the designated expert panel.

- The planned performance assessment work for the engineered barriers appears generally appropriate, but additional attention to the effects of environmental conditions in the vicinity of the waste package under two-phase (water-steam) conditions is needed.

- The use of K_d for geochemical retardation, as contrasted with more detailed treatment, appears to be a useful approach in bounding and simplifying, but review in the next geochemistry workshop is needed. The general approach -- to bound uncertainties -- may be applicable in other areas.

- When performance analyses are done by deterministic methods, the nature and basis for the point values (e.g., mean, bounding, etc.) must be justified.

- The NRC needs, as soon as available, documentation of codes to be used during site characterization. While documentation is being prepared, draft descriptions of the mathematical models should be supplied to the NRC.

- The NRC will supply to the Department of Energy (DOE) a list of technical assistance contracts in high-level waste, with descriptions of the work and distribution lists. Distribution lists for research contracts will also be provided, the list of contracts having been supplied earlier.

Management Developments:

Work is progressing on development of a rapid release system for site characterization data. An accession report that lists available reports, information, and data is expected to be released during October.

R. P. Saget for 9/1/83
O. L. Olson, DOE

Robert J. Wright 9/1/83
Robert J. Wright, NRC

ATTACHMENT 1

AGENDA
DOE/NRC WORKSHOP ON PERFORMANCE ASSESSMENT
BASALT WASTE ISOLATION PROJECT

DATE: August 29 - September 1, 1983

PLACE: Richland, Washington (1135 Jadwin Building)

PURPOSE: To discuss and reach to the extent practicable a consensus approach for addressing the DSCA comments concerning the BWIP Performance Assessment.

OBJECTIVES:

(1) To discuss performance assessment models and approaches.

(2) To address questions of compliance with the proposed regulatory standards and criteria.

(3) To clarify open topics in performance assessment which are raised in the DSCA and NRC staff performance assessment discussion paper.

PARTICIPANTS:

DOE: P. Lamont, D. Squires, P. Saget

NRC: D. Fehringer, M. Gordon, M. Logsdon, M. Weber, R. Wright

NRC Consultants: B. Ross (Geotrans), N. Qrtiz (Sandia National Labs), R. Talbot (Golder Associates)

State of Washington: D. Provost

Affected Indian Tribes: L. Lehman, J. Hovis, E. Patawa

Rockwell: R. Arnett, R. Baca, M. Bensky, P. Clifton, J. Davis, R. Gephart, R. Jackson, J. Sonnichsen, R. Wilde, R. Smith, P. Salter, S. Barney, N. W. Kline

August 29 - Morning

8:00 - DOE Introduction

8:15 - NRC Introduction

8:30 - Brief overview of NRC performance assessment activities

10:00 - Presentation and discussion of NRC draft technical discussion paper

11:00 - Brief overview of BWIP performance assessment activities

Afternoon

1:00 - NRC and BWIP methods of calculating groundwater travel times

- Sensitivity analyses of repository performance

- Methods for quantifying uncertainty and determining compliance with 10 CFR 60 and 40 CFR 191

August 30 - Morning

8:15 - Application of geochemical parameters to far-field radionuclide transport

- Determination of radionuclide source terms

- Discussion of technical basis for judging compliance with the EPA draft standard

- Approach to identifying release scenarios and determining their probabilities

- Treatment of human intrusion scenarios

Afternoon

1:00 - Code selection, application, and quality assurance

- Verification, benchmarking, and validation of computer codes

August 31 - Morning

8:15 - Approach to modeling coupled thermo-hydrochemical-mechanical processes

- Approach to determination of the disturbed zone

- Interaction of performance assessment with site characterization

Afternoon

1:00 - NRC caucus/BWIP caucus

3:00 - BWIP lists of disagreements and agreements

3:30 - NRC lists of disagreements and agreements

4:00 - BWIP/NRC consensus development

September 1 - Morning

8:00 - Technical wrap up

10:00 - Management wrap up

11:00 - Preparation of meeting notes

September 2 - Reserved if needed

DOE/NRC BWIP WORKSHOP
PERFORMANCE ASSESSMENT

Richland, Washington
August 29-31, 1983

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