



Department of Energy
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Office of Repository Development
1551 Hillshire Drive
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QA: N/A

MAY 27 2004

OVERNIGHT MAIL

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U.S. Nuclear Regulatory Commission
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TRANSMITTAL OF INFORMATION ADDRESSING KEY TECHNICAL ISSUE (KTI)
AGREEMENT EVOLUTION OF THE NEAR-FIELD ENVIRONMENT (ENFE) 2.18

- References: (1) Ltr, Ziegler to Chief, High-Level Waste Branch (NRC), dtd 11/25/03
(Transmittal of TBDoc No. 5: In-Drift Chemical Environment Addressing
15 KTI Agreements)
- (2) Ltr, Ziegler to Director, Division of High-Level Waste Repository Safety
(NRC), dtd 05/07/04 (Transmittal of Reference Documents to Support the NRC
Review of KTI Agreements Related to TBDoc No. 8: Colloids, Revision 2)
- (3) Ltr, Ziegler to Chief, High-Level Waste Branch (NRC), dtd 10/03/03
(Transmittal of TBDoc No. 8: Colloids, Revision 2, Addressing KTI
Agreements Related to Colloids)

This letter provides information to support closure of the subject agreement. Specifically, the agreement states:

ENFE 2.18:

“The DOE will provide the documents requested by the dates indicated: Engineered Barrier System: Physical and Chemical Environment Model (ANL-EBS-MD-000033) Rev. 01: FY 02; Multiscale Thermohydrologic Model (ANL-EBS-MD-000049) Rev. 00, ICN 01: January 2001; Abstraction of Drift-Scale Coupled Processes (ANL-NBS-HS-000029) Rev. 01: September 2001; Environment on the Surfaces of the Drip Shield and the Waste Package Outer Barrier (ANL-EBS-MD-000001) Rev. 00, ICN 01: January 2001; Waste Package Degradation PMR (TDR-WIS-MD-000002) Rev. 00, ICN 01: January 2001; Engineered Barrier System Degradation, Flow, and Transport PMR (TDR-EBS-MD-000006) Rev.01: September 2001; Near-Field Environment PMR (TDR-NBS-MD-000001) Rev.00,

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ICN 02: January 2001 and Rev. 01: September 2001; Hydrogen Induced Cracking of Drip Shield (ANL-EBS-MD-000006) Rev. 00, ICN 01: January 2001; Drift Degradation Analysis (ANL-EBS-MD-000027) Rev. 01: January 2001; Design Analysis for the Ex-Container Components (ANL-XCS-ME-000001) Rev. 00: January 2001; Longevity of Emplacement Drift Ground Support Materials (ANL-EBS-GE-000003) Rev. 01: January 2001; Stress Corrosion Cracking of the Drip Shield, the Waste Package Outer Barrier, and the Stainless Steel Structural Material AMR (ANL-EBS-MD-000005) Rev. 00, ICN 01: January 2001; In-Drift Microbial Communities (ANL-EBS-MD-000038) Rev. 00, ICN 01: January 2001; Physical and Chemical Environmental Abstraction Model (ANL-EBS-MD-000046) Rev. 00, ICN 01: January 2001; Unsaturated Zone Flow and Transport Model PMR (TDR-NBS-HS-000002) Rev. 01: September 2001; General Corrosion and Localized Corrosion of the Drip Shield (ANL-EBS-MD-000004) Rev. 00: January 2001; and Water Distribution and Removal Model (ANL-EBS-MD-000032) Rev.01: January 2001.”

The KTI agreement was to provide the listed eighteen documents to the U.S. Nuclear Regulatory Commission (NRC). To date, thirteen documents have been submitted; the five remaining are underlined. The plan for submittal of the information that was expected to be included in the remaining documents when Agreement ENFE 2.18 was reached in September 2000 is provided below.

Three of the five outstanding documents are Process Model Reports (PMRs). After the KTI ENFE agreements were made on September 12-13, 2000, the Yucca Mountain Project discontinued development of PMRs. The planned technical content of the five documents, including the three PMRs, has been assimilated into other Project documents. These documents include new reports, KTI agreement responses, and various Technical Basis Documents (TBDocs). The TBDocs provide an integrated response to several KTIs that form a common process or have related performance functions.

The subject matter discussed at the September 12-13, 2000, NRC/U.S. Department of Energy (DOE) Technical Exchange and Management Meeting, that would have been in the five outstanding documents of ENFE 2.18, map into other existing KTI agreements, TBDocs or other reports as follows:

1. ENFE 2.18 document:
Engineered Barrier System: Physical and Chemical Environment Model
(ANL-EBS-MD-000033) Revision 01.

Existing/planned document:

TBDoc No. 5: In-Drift Chemical Environment, Revision 1. Specifically, Appendix E, the response to Agreement ENFE 2.06. This document was sent to NRC via Reference 1.

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2. ENFE 2.18 document:

Abstraction of Drift-Scale Coupled Processes (ANL-NBS-HS-000029).

Existing/planned document:

TBDoc No. 5: In-Drift Chemical Environment, Revision 1. Specifically, Appendix B, the response to Agreement Total System Performance Assessment and Integration (TSPAI) 3.09. This document was sent to NRC via Reference 1.

3. ENFE 2.18 document:

Engineered Barrier System Degradation, Flow, and Transport PMR (TDR-EBS-MD-000006) Revision 01.

Existing/planned document:

Drift-Scale Coupled Processes (DST and THC Seepage) Models (MDL-NBS-HS-000001) Revision 02. This document was sent to NRC via Reference 2.

4. ENFE 2.18 document:

Unsaturated Zone Flow and Transport Model PMR (TDR-NBS-HS-000002) Revision 01.

Existing/planned document:

The DOE responses to KTI Agreements ENFE 1.04 and ENFE 4.03. The response to Agreement ENFE 4.03 was provided in Appendix C to TBDoc No. 8: Colloids, transmitted to the NRC by Reference 3. The response to Agreement ENFE 1.04 is planned to be submitted to NRC in July 2004.

5. ENFE 2.18 document:

Near-Field Environment PMR (TDR-NBS-MD-000001) Revision 01.

Existing/planned document:

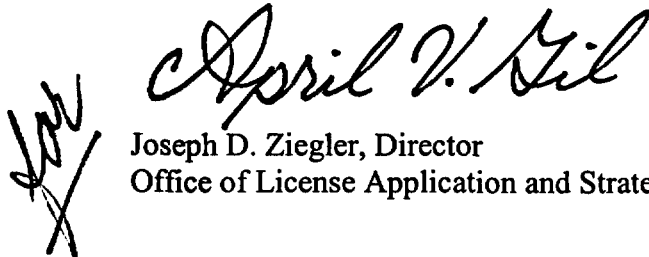
The DOE response to KTI Agreement TSPAI 2.02, which will include the AMR, Features, Events, and Processes in UZ Flow and Transport (ANL-NBS-MD-000001). This response is planned to be submitted to NRC by June 2004.

Since the specific technical issues that caused documents 4 and 5 above to be listed in Agreement ENFE 2.18 are duplicated in other agreements as identified above, DOE recommends that Agreement ENFE 2.18 be closed.

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There are no new regulatory commitments in the body or enclosure to this letter. Please direct any questions concerning this letter and its enclosure to Joe C. Price at (702) 794-1441 or e-mail joe_price@ymp.gov, or Deborah L. Barr at (702) 794-1479 or e-mail deborah_barr@ymp.gov.

OLA&S:JCP-1265


Joseph D. Ziegler, Director
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