



**Department of Energy**  
Office of Civilian Radioactive Waste Management  
Office of Repository Development  
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QA: N/A  
Project No. WM-00011

**AUG 20 2004**

OVERNIGHT MAIL

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TRANSMITTAL OF APPENDIX M OF THE *TECHNICAL BASIS DOCUMENT NO. 5: IN-DRIFT CHEMICAL ENVIRONMENT* ADDRESSING KEY TECHNICAL ISSUE (KTI) AGREEMENTS RELATED TO THERMAL EFFECTS ON FLOW (TEF) 2.05 AND GENERAL (GEN) 1.01 (COMMENTS 5 AND 16)

Reference: Ltr, Ziegler to Chief, High-Level Waste Branch (NRC), dtd 11/25/03 (Transmittal of TBD No. 5: In-Drift Chemical Environment)

This letter transmits Appendix M of the *Technical Basis Document No. 5: In-Drift Chemical Environment* (enclosure 1). A compact disk (CD) of this appendix is also being transmitted (enclosure 2). The CD contains a pdf file with 1.62 MB, and can be made publicly available. Appendices A - L of the Technical Basis Document were submitted as part of the referenced letter. Appendix M, *Cold Trap Effects*, provides the response to TEF 2.05 and GEN 1.01 (Comments 5 and 16). Appendix M relates to the understanding of cold trap effects and their treatment in model abstractions.

The response describes a model that accounts for the axial transport of vapor due to natural convection and estimates evaporation and condensation rates on the major features of a repository drift. It evaluates the uncertainties with these processes and addresses them within the context of the Total System Performance Assessment for License Application.

The U.S. Department of Energy considers the KTIs TEF 2.05 and GEN 1.01 (Comments 5 and 16) to be addressed, and pending review and acceptance by the U.S. Nuclear Regulatory Commission, they should be closed.

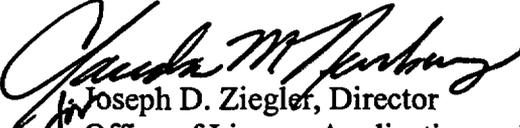
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Director, Division of High-Level Waste  
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There are no new regulatory commitments in the body or the enclosures to this letter. Please direct any questions concerning this letter and its enclosures to Carol L. Hanlon at (702) 794-1324 or e-mail [carol\\_hanlon@ymp.gov](mailto:carol_hanlon@ymp.gov), or Deborah L. Barr at (702)794-1479 or e-mail [deborah\\_barr@ymp.gov](mailto:deborah_barr@ymp.gov).

  
for Joseph D. Ziegler, Director  
Office of License Application and Strategy

OLA&S: CLH-1702

Enclosures:

1. Appendix M, *Cold Trap Effects* (Response to TEF 2.05 and GEN 1.01 [Comments 5 & 16])  
Revision 1
2. CD of Enclosure 1

AUG 20 2004

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