



## Department of Energy

Office of Civilian Radioactive Waste Management  
Office of Repository Development  
P.O. Box 364629  
North Las Vegas, NV 89036-8629

QA: N/A  
Project No. WM-000011

JUL 14 2003

OVERNIGHT MAIL

**ATTN: Document Control Desk**  
Chief, High-Level Waste Branch, DWM/NMSS  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852-27388

TRANSMITTAL OF INFORMATION ADDRESSING KEY TECHNICAL ISSUE (KTI)  
AGREEMENT ITEMS CONTAINER LIFE AND SOURCE TERM (CLST) 5.04,  
EVOLUTION OF THE NEAR-FIELD ENVIRONMENT (ENFE) 5.03, AND  
RADIONUCLIDE TRANSPORT (RT) 4.03

References: (1) Ltr, Brocoum to Reamer, dtd 10/12/01  
(2) Ltr, Schlueter to Brocoum, dtd 2/14/02  
(3) Ltr, Brocoum to Reamer, dated 2/21/01

This letter transmits a list and schedule for the model validation reports (enclosure), which satisfies the subject KTI agreements. This list and schedule supersedes that provided in Reference 1. The model validation reports listed are being prepared to provide the details of the criticality analysis methodology as committed to in the *Disposal Criticality Analysis Methodology Topical Report*, YMP/TR-004Q, Revision 01.

These KTI agreements, as stated during the Criticality Technical Exchange and Management Meeting held on October 23-24, 2000, are as follows:

CLST 5.04, ENFE 5.03, and RT 4.03: "Provide the [applicable] list of validation reports and their schedules. DOE stated that the geochemical model validation reports for 'Geochemistry Model Validation Report: Degradation and Release' and 'Geochemistry Model Validation Report: Material Accumulation' are expected to be available during 2001. The remainder of the reports are expected to be available during FY2002 subject to the results of detailed planning and scheduling. DOE understands that these reports are required to be provided prior to LA. A list of model validation reports was provided during the technical exchange and is included as an attachment to the meeting summary."

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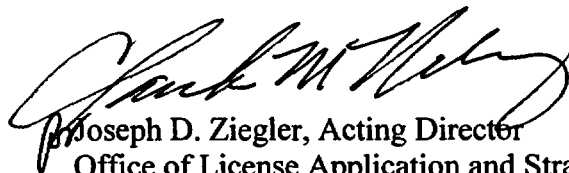
Chief, High-Level Waste Branch

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As cited above, KTI Agreement Items CLST 5.04, ENFE 5.03, and RT 4.03 request a list and schedule of the criticality model validation reports. It should be noted that the Agreement Items of ENFE 5.03 and RT 4.03 are subsumed by those of CLST 5.04. It should also be noted that the U.S. Department of Energy (DOE) is concerned with the following statement from the "Status of Agreement" of Item 4 in Reference 2: "Since additional validation reports must be submitted as discussed in the agreements, the agreements will continue to be characterized as 'Partly Received.' " As cited above, these KTI agreements only request a list and schedule for the validation model reports. As indicated in the DOE correspondence to the U.S. Nuclear Regulatory Commission (NRC), Reference 3, DOE expressed its intention to resolve some open items for the *Criticality Analysis Methodology Topical Report Safety Evaluation Report (SER)*, through model validation reports. Requisite text is provided in the *Disposal Criticality Analysis Methodology Topical Report*, YMP/TR-004Q, Revision 01, describing the general approach and where the details will be documented. Since completion of the validation reports will be required to close SER open items, tracking their completion, additionally, as part of this KTI agreement item is duplicative. Therefore, the DOE considers that submittal of the enclosed model validation report list and schedule fulfills the intent of CLST 5.04, ENFE 5.03, and RT 4.03, and, pending review and acceptance by the NRC, these agreements should be closed. It should be noted that this schedule is subject to change and that the NRC will be informed of any future changes.

As indicated in the enclosed schedule, model validation reports for which waste form information is currently insufficient (i.e., plutonium and MOX fuel) and for reports that are not expected to be required on a risk-informed/performance-based basis (i.e., external criticality) are not scheduled to be available until after license application submittal.

This letter contains no new regulatory commitments. Please direct any questions concerning this letter and its enclosure to David C. Haught at (702) 794-5474 or Paige R.Z. Russell at (702) 794-1315.



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

OLA&S:TCG-1484

Enclosure:  
List and Schedule of Model Reports Supporting  
the *Disposal Criticality Analysis Methodology*  
*Topical Report*

JUL 14 2003

Chief, High-Level Waste Branch

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cc w/encl:

G. P. Hatchett, NRC, Rockville, MD  
D. D. Chamberlain, NRC, Arlington, TX  
R. M. Latta, NRC, Las Vegas, NV  
H. J. Larson, ACNW, Rockville, MD  
W. C. Patrick, CNWRA, San Antonio, TX  
Budhi Sagar, CNWRA, San Antonio, TX  
J. R. Egan, Egan & Associates, McLean, VA  
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M. J. Apted, Monitor Scientific, LLC,  
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Steve Kraft, NEI, Washington, DC  
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R. R. Loux, State of Nevada, Carson City, NV  
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Irene Navis, Clark County, Las Vegas, NV  
George McCorkell, Esmeralda County, Goldfield, NV  
Leonard Fiorenzi, Eureka County, Eureka, NV  
Andrew Remus, Inyo County, Independence, CA  
Michael King, Inyo County, Edmonds, WA  
Mickey Yarbrow, Lander County, Battle Mountain, NV  
Spencer Hafen, Lincoln County, Pioche, NV  
Linda Mathias, Mineral County, Hawthorne, NV  
L. W. Bradshaw, Nye County, Pahrump, NV  
Josie Larson, White Pine County, Ely, NV  
R. I. Holden, National Congress of American Indians, Washington, DC  
Allen Ambler, Nevada Indian Environmental Coalition, Fallon, NV

cc w/o encl:

C. W. Reamer, NRC, Rockville, MD  
A. C. Campbell, NRC, Rockville, MD  
L. L. Campbell, NRC, Rockville, MD  
J. D. Parrott, NRC, Las Vegas, NV  
N. K. Stablein, NRC, Rockville, MD

## ENCLOSURE

### List and Schedule of Model Reports Supporting the *Disposal Criticality Analysis Methodology Topical Report*

Revision <sup>a</sup>	Model Report Title	Date to NRC <sup>b</sup>
<b>1. Geochemistry Model Validation Report: Material Degradation and Release Model, ANL-EBS-GS-000001</b>		
0	Flooded Waste Package Model	September 2001
1	Film Degradation Model	August 2004
<b>2. Geochemistry Model Validation Report: External Accumulation Model, ANL-EBS-GS-000002</b>		
0	Accumulation in Fractured Tuff Model	September 2001
1	Accumulation in the Invert Model	July 2005 <sup>c</sup>
<b>3. Isotopic Model Report for Commercial SNF Burnup Credit, MDL-DSU-NU-000001</b>		
0	PWR SNF	August 2003
1	BWR SNF	April 2004
<b>4. Criticality Model Report, MDL-EBS-NU-000003</b>		
1	PWR SNF	August 2003
2	DOE SNF Co-Disposal	November 2003
3	BWR SNF	May 2004
<b>5. Criticality Model Report: External</b>		
0	Criticality Model Report: External	October 2004 <sup>c</sup>
<b>6. Configuration Generator Model for In-Package Criticality, MDL-EBS-NU-000001</b>		
1	Commercial SNF (PWR & BWR)	August 2003
2	DOE SNF Co-Disposal	July 2004
<b>7. Configuration Generator Model Report: External</b>		
0	Near-Field/In-Drift Configurations	December 2005 <sup>c</sup>
1	Far-Field Configurations	May 2006 <sup>c</sup>
<b>8. Steady-State Criticality Consequence Model Report</b>		
0	Steady-State Criticality Consequence Model Report	April 2004
<b>9. Transient Criticality Consequence Model Report</b>		
0	Internal	September 2004
1	External	May 2005 <sup>c</sup>

- a Previously listed report revisions have been removed for waste forms no longer in the baseline for License Application
- b Schedule dates beyond September 2003 are subject to change, due to yearly budget updates to the multiyear plan.
- c Although scheduled, external criticality model reports may not be developed due to external events being screened out from TSPA evaluations based on low total event probability (i.e., below the regulatory threshold).