

Summary of the Resolution of the Key Technical Issue on Subissues Related to Criticality

<u>Subissue #</u>	<u>Subissue Title</u>	<u>Status</u>	<u>NRC/DOE Agreements</u>
CLST Subissue 5	Effect of In-Package Criticality on Waste Package and Engineered Barrier System Performance	Closed-Pending	<p>1) Provide Revision 1 to the Topical Report. DOE stated that it will provide the Disposal Criticality Analysis Methodology Topical Report, Revision 01, to NRC during January 2001.</p> <p>2) Provide the Disruptive Events FEPs AMR, the FEPs database, and the Analyses to Support Screening of System-Level Features, Events, and Processes for the Yucca Mountain Total System Performance Assessment-Site Recommendation. DOE stated that it will provide the FEPs AMRs, the Analyses to Support Screening of System-Level Features, Events, and Processes for the Yucca Mountain Total System Performance Assessment-Site Recommendation AMR, and the FEPs database to NRC during January 2001.</p> <p>3) Provide the "Probability of Criticality Before 10,000 years" calculation. DOE stated that it will provide the calculation to NRC by November 1, 2000.</p>

CLST Subissue 5	Effect of In-Package Criticality on Waste Package and Engineered Barrier System Performance (Cont.)		<p>4) Provide the 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.</p> <p>5) Provide information on how the increase in the radiation fields due to the criticality event affects the consequence evaluation because of increased radiolysis inside the waste package and at the surfaces of nearby waste packages or demonstrate that the current corrosion and dissolution models encompass the range of chemical conditions and corrosion potentials that would result from this increase in radiolysis. DOE stated that the preliminary assessment (calculation) of radiolysis effects from a criticality event will be available to NRC during February 2001. The final assessment of these conditions will be available to NRC prior to LA.</p> <p>6) Provide a “what-if” analysis to evaluate the impact of an early criticality assuming a waste package failure. DOE stated that it would provide the requested analyses prior to LA. Actual schedule to be provided pending DOE planning process.</p>
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CLST Subissue 5	Effect of In-Package Criticality on Waste Package and Engineered Barrier System Performance (Cont.)		7) Provide sensitivity analyses that will include the most significant probability/consequence criticality scenarios. DOE stated that it would provide the requested analyses prior to LA. Actual schedule to be provided pending DOE planning process.
RT Subissue 4	Nuclear Criticality in the Far Field	Closed-Pending	<p>1) Provide Revision 1 to the Topical Report. DOE will provide the Disposal Criticality Analysis Methodology Topical Report, Revision 01, to NRC during January 2001.</p> <p>2) Provide the updated FEPs database. DOE stated that it would provide the FEPs AMRs and the FEPs database to NRC during January 2001.</p> <p>3) Provide the applicable list of validation reports and their schedules for external criticality. 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.</p>

ENFE Subissue 5	Effects of Coupled Thermal-Hydrologic-Chemical Processes on Potential Nuclear Criticality in the Near Field	Closed-Pending	<p>1) Provide Revision 1 to the Topical Report. DOE will provide the Disposal Criticality Analysis Methodology Topical Report, Revision 01, to NRC during January 2001.</p> <p>2) Provide the updated FEPs database. DOE stated that it would provide the FEPs AMRs and the FEPs database to NRC during January 2001.</p> <p>3) Provide the applicable list of validation reports and their schedules for external criticality. 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.</p>
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