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OVERNIGHT MAIL

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U.S. DEPARTMENT OF ENERGY (DOE) COMMENTS TO THE U.S. NUCLEAR REGULATORY COMMISSION (NRC) PROPOSED GUIDELINES FOR PRECLOSURE PRE-LICENSING INTERACTIONS FOR THE YUCCA MOUNTAIN PROJECT

Reference: Ltr, Reamer to Arthur, dtd 9/9/05 (Proposed Guidelines for Preclosure Pre-Licensing Interactions)

In the referenced letter, NRC provided DOE a draft set of proposed guidelines, topics, and objectives to govern future technical exchanges (TE) with DOE on specific preclosure technical topics. The letter noted that the proposed guidelines will assist the NRC staff during the pre-license application period to discuss and understand the type of information that DOE intends to provide, or use to support, a potential License Application (LA). We appreciate the opportunity to provide comments on the proposed guidelines and in support of these interactions.

DOE concurs with the need to better define the bases and process to be followed for future preclosure technical interactions with the NRC prior to submittal of the LA. DOE also believes that these future preclosure interactions can be conducted in a manner that will help the NRC staff to gain a better understanding of the repository design and those structures, systems and components that may be required to prevent or mitigate event sequences.

The proposed guidelines will ensure effective future interactions through focused presentations and discussion of specific objectives that address NRC's areas of interest. As discussed in the reference, application of these guidelines would facilitate:

1. Finalization of TE topics, development of specific objectives, and establishment of ground rules for conducting TEs;
2. Development of schedules for future TEs;
3. Standardization of methods for making documents available to the public and easy to locate by all stakeholders.

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To further the development of a mutually agreed upon set of guidelines, DOE has a number of comments and suggestions on the NRC proposal transmitted in the reference. These comments are contained in the enclosure (DOE Comments on NRC Proposed Preclosure Interaction Guidelines) to this letter.

Please note that planning for fiscal year (FY) 2006 is ongoing and funding levels are subject to change. As a consequence, until FY 2006 planning is completed, DOE cannot establish "tentative, but reasonable" schedules for these interactions as requested in the NRC proposal. Therefore, at this time, the schedules for the preclosure interaction topics are yet to be determined. DOE expects to be able to better propose schedules for these interactions in the near future and will keep NRC informed of our progress.

There are no new regulatory commitments in the body or the enclosure to this letter. If you have any questions regarding this response, please contact Timothy C. Gunter at (702) 794-1343 or e-mail timothy_gunter@ymp.gov, or April V. Gil at (702) 794-5578 or e-mail april_gil@ymp.gov.



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OLA&S:TCG-0088

Enclosure:
DOE Comments on NRC Proposed Preclosure
Interaction Guidelines

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Enclosure

DOE Comments on NRC Proposed Preclosure Interaction Guidelines

The following DOE comments on the NRC proposed Guidelines for Staff Interactions with the Department of Energy on Preclosure Topics ("Proposed Guidelines") are summarized below and are included in Table 1. DOE concurs with the list of preclosure topics and the Proposed Guidelines with the following clarifications:

1. DOE recommends the consolidation of Preclosure Safety Analysis (PCSA) (Topic # 1) with Performance of Surface Structures, Systems, and Components (SSC) (Topic # 5) and Subsurface Mechanical System & Components Performance (Topic # 6) into a single interaction. This consolidation will enhance the understanding of the implementation of the nuclear safety design bases (NSDB) identified by the PCSA into the facility and component design process.
2. Aircraft Crash Event Sequences (Topic 2) and Aging Facility Performance (Topic # 7) have been discussed in the past and issues identified by the NRC have led to revisions to the evaluation process affecting these topics. Accordingly, DOE will provide the NRC with additional information for consideration in our response to NRC's issues. In addition, NRC has provided an evaluation of DOE's approach to the identification and estimation of aircraft hazards in the August 2, 2005 letter, "Prelicensing Evaluation of Preclosure Key Technical Issue PRE 3.01." The need for future interactions on these topics can be re-assessed after the NRC has had sufficient time to review the information to be provided by DOE in response to the NRC's letter on this subject.
3. Criticality Event Sequence (Topic # 4), Source Terms (Topic # 8) and Consequences (Topic # 9) may be impacted by decisions made to resolve issues such as the handling of fuel-in-air and damaged fuel. Interactions on these topics will be scheduled after selection of the design approach to resolve these fuel handling issues.
4. As part of Topic # 10, DOE is particularly interested in discussing the processes associated with 63.32 and 63.44 as they apply to initial operation and the commissioning of later facilities. (For example, as construction progresses, the interfaces between simultaneous construction and process operations will evolve.)
5. While the proposed objectives listed in Reference 1, and the recommended objectives contained in this letter are a starting point, DOE believes that a focused set of objectives should be established 45 days prior to a scheduled interaction. Each objective should reference the applicable regulatory basis in 10 CFR 63 or applicable YMRP review criteria. Development of a mutually agreed upon set of meeting objectives will ensure that DOE's presentation is responsive to the NRC's areas of interest and to the published agenda and is clearly related to regulatory requirements.
6. While beneficial to understanding the repository design and safety bases, conduct of these preclosure interactions is not required to be completed to support LA submittal or LA review by NRC.

Enclosure

DOE Comments on NRC Proposed Preclosure Interaction Guidelines

“Specific comments on the section titled “Format of Technical Exchanges” follow:

7. The DOE Presentations Addressing the Objectives”:

DOE’s presentations will focus on the meeting objectives to provide a better understanding of how specific technical issues are being addressed. This portion of the Proposed Guidelines mentions “informal discussions” on technical products. As a clarification to this paragraph, DOE suggests deleting “informal” since a Technical Exchange is a formal interaction and the presentations and discussions will be documented in the NRC’s formal summary letter.

8. “The NRC Summary of the Technical Exchange” and “The NRC Summary Letter”:

One or more technical issues may remain open, potentially as a result of differing staff positions. The presence of such open issues does not mean that the DOE presentation failed to address the meeting objectives.

9. “Availability of Documents”:

It is DOE’s intention that the OCRWM website be used as the “standardized” method to make relevant documents available to the public and stakeholders. The list of TE relevant documents will be established prior to each TE and appropriate Uniform Research Locator (URL) references would be provided. However, in the event of adjustments to the list of documents, DOE may need to provide individual documents via direct transmittal to NRC and the standard distribution list or, if necessary, provide copies of individual documents at the TE to ensure public availability of material discussed in interactions between NRC and DOE.

TABLE 1
Detailed Comments on Preclosure Pre-Licensing Topics

Topic #	Topic	NRC Proposed Objectives	DOE Recommendation	DOE Proposed Objectives	TE Target Date
1	Preclosure Safety Analysis (PCSA)	<p>Discuss the bases for assumptions supporting DOE's preclosure safety analysis (PCSA) in identifying hazards, categorizing event sequences, and demonstrating the performance of systems, structures, and components (SSCs) that have been evaluated to be important to safety (ITS). This includes the treatment of data uncertainty.</p> <p>Discuss how DOE intends to demonstrate and achieve target reliability values in the PCSA.</p> <p>Discuss how DOE intends to address human reliability in the PCSA.</p> <p>Discuss how DOE intends to incorporate operational experience in PCSA hazard identification.</p>	Combine Topic # 1 with Topics # 5 & 6	<p>Present the integrated PCSA hazard evaluation and design process that ensures compliance with the NSDBs.</p> <p>Discuss evaluation and use of target reliability values in the PCSA, design, and procurement process.</p> <p>Discuss how operational experience and human reliability are addressed in the PCSA process.</p> <p>Discuss the performance and reliability of ITS mechanical and electrical systems, including uncertainty in commercial and nuclear industry data.</p> <p>Discuss the performance and reliability of passive components and structural systems in the PCSA process.</p>	TBD

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2	Aircraft Crash Event Sequences	<p>Discuss the process DOE intends to use in identifying hazard sources and assessing frequency analysis.</p> <p>Discuss how DOE intends to demonstrate the structural performance of SSCs subject to an aircraft crash in the PCSA.</p>	<p>DOE will address earlier NRC issues via formal letter.</p> <p>Determine need for interaction based on NRC review of new information.</p>	<p>Specific objectives will be established based on need for interaction.</p>	TBD
3	Seismic Event Sequences	<p>Discuss how DOE intends to perform site geotechnical characterization.</p> <p>Discuss how DOE intends to analyze the seismic ground response.</p> <p>Discuss DOE's analysis of the seismic design of structures to support the PCSA.</p> <p>Discuss how DOE intends to develop seismically initiated event sequences for the PCSA.</p>	<p>DOE responded to earlier NRC issues via formal letter to which NRC responded on 9/30/2005, requesting a technical exchange to facilitate understanding of DOE's seismic approach. DOE agrees with NRC's request to discuss this topic in a future technical exchange.</p>	<p>Discuss process for site geotechnical characterization.</p> <p>Discuss methods to establish seismic ground response.</p> <p>Discuss how bounding structural evaluations are used to support PCSA.</p> <p>Discuss process to develop seismically initiated event sequences.</p>	TBD
4	Criticality Event Sequence	<p>Discuss the approach DOE intends to use to address preclosure criticality safety in the PCSA.</p>	<p>Determine need for interaction based on resolution of design issues.</p>	<p>Present process of analysis and design that ensures preclosure criticality is prevented.</p>	TBD

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5	Performance of Surface SSCs	<p>Discuss how DOE intends to evaluate the structural performance of the waste package in the PCSA.</p> <p>Discuss how DOE intends to assess the performance and reliability of mechanical systems including, but not limited to, the fuel handling equipment, cranes, HVAC systems, and trolleys.</p> <p>Discuss how DOE intends to assess the performance and reliability of electrical systems.</p> <p>Discuss how DOE intends to assess the performance and reliability of structural systems including, but not limited to, shielding and structural walls and the aging facility.</p>	Combine Topic # 5 with Topics # 1 & 6	See Topic # 1	See Topic # 1

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6	Subsurface Mechanical System & Components Performance	<p>Discuss how DOE intends to assess the performance and reliability of mechanical systems including, but not limited to, the subsurface transporter and emplacement gantry.</p> <p>Discuss how DOE intends to assess the performance and reliability of structural systems including, but not limited to, emplacement and main drifts.</p>	Combine Topic # 6 with Topics # 1 & 5	See Topic # 1	See Topic # 1
7	Aging facility Performance	<p>Discuss how DOE intends to analyze the use of previously licensed casks in the PCSA .</p> <p>Discuss how DOE intends to analyze the use of site-specific cask designs in the PCSA.</p>	<p>DOE will address earlier NRC issues via formal letter.</p> <p>Determine need for interaction based on NRC review of new information.</p>	<p>None at this time pending NRC review of new information.</p> <p>Specific objectives will be established based on need for interaction</p>	TBD

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Detailed Comments on Preclosure Pre-Licensing Topics

Topic #	Topic	NRC Proposed Objectives	DOE Recommendation	DOE Proposed Objectives	TE Target Date
8	Source terms	<p>Discuss how DOE intends to identify and use the appropriate spent nuclear fuel release fractions in the PCSA.</p> <p>Discuss how DOE intends to identify and handle damaged fuel assemblies including the analysis of handling damaged assemblies in the PCSA</p>	<p>Combine Topics # 8 & 9</p> <p>Determine need for interaction based on resolution of design issues.</p>	<p>Present process of analysis and design that ensures preclosure safety for workers and the public.</p> <p>Discuss operational considerations for damaged fuel that will ensure compliance with preclosure performance objectives</p> <p>Present analysis methods and assumptions that demonstrate compliance with preclosure performance objectives.</p>	TBD
9	Consequences	<p>Discuss how DOE intends to characterize radionuclide inventories for various high-level waste forms and use those inventories in the PCSA</p> <p>Discuss the methodology and assumptions that DOE intends to use for worker dose assessments in the PCSA</p> <p>Discuss the methodology and assumptions that DOE intends to use for off-site dose assessments in the PCSA.</p>	<p>Combine Topics # 8 & 9</p> <p>Determine need for interaction based on resolution of design issues.</p>	See Topic # 8	See Topic # 8

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Topic #	Topic	NRC Proposed Objectives	DOE Recommendation	DOE Proposed Objectives	TE Target Date
10	Format and Content of Licensing Documents	<p>Develop the format and content of a potential construction authorization. While the NRC has the responsibility to develop the format and content of the construction authorization, the staff believes it is prudent to allow DOE to provide input based on the design and construction of the facility.</p> <p>Develop the format and content of a potential license to receive and possess high-level waste. While the NRC has the responsibility to develop the format and content of the license, the staff believes it is prudent to allow DOE to provide input based on the design and operation of the facility.</p>	<p>DOE agrees that this interaction would be beneficial. An interaction on this topic prior to the other topics would benefit the later interactions.</p>	TBD	Late 2005 or early 2006