FINAL SUMMARY OF THE
U.S. DEPARTMENT OF ENERGY/U.S. NUCLEAR REGULATORY COMMISSION
TECHNICAL EXCHANGE ON THE PRECLOSURE INTERACTION PLANS AND
AIRCRAFT HAZARDS AT THE POTENTIAL YUCCA MOUNTAIN REPOSITORY
LAS VEGAS, NEVADA
JUNE 1, 2005

On June 1, 2005, the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) held a public Technical Exchange (TE) meeting to discuss future preclosure interactions between DOE and NRC, and to discuss the approach for aircraft hazards analysis. The meeting was held at the DOE offices in Las Vegas, Nevada. The agenda and presentation materials for the meeting are enclosed as Attachments 1 and 2, respectively.

To support staff and stakeholder interactions, the meeting included teleconference and video connections to the NRC office in Rockville, Maryland, and at the Center of Nuclear Waste Regulatory Analyses in San Antonio, Texas. Stakeholders at the meeting included representatives of NRC, DOE, State of Nevada, Nuclear Waste Technical Review Board, Nuclear Energy Institute, and public interest groups. Attachment 3 contains a list of the attendees who were present at the meeting. Stakeholders provided comments and questions to NRC during the meeting.

During the TE, DOE presented a proposal for topics of future preclosure interactions between NRC and DOE in 2005. The proposed topics include: (1) aircraft hazards, (2) preclosure safety analysis process, (3) non-standard equipment including material handling, and waste transporter and gantry, (4) preclosure criticality, (5) aging facility, (6) preclosure seismic design, (7) design and classification of electrical systems, (8) commercial spent nuclear fuel handling in a dry environment, (9) fuel behavior and release fractions, and (10) technical specifications. DOE provided target TE dates for the first five topics, and agreed to provide target TE dates for the remaining topics at the DOE/NRC Quarterly Management meeting on June 6, 2005. For each topic, DOE presented future TE meeting objectives and a list of DOE documents associated with each topic. DOE indicated that it is actively making internally-issued documents publicly available on the internet. It also agreed that DOE would plan to have the relevant documents publicly available at least two weeks before each TE or transmit the documents to NRC three weeks before the TE. NRC indicated that it would likely not schedule a TE until the relevant documents were made available to the public. During the presentation, DOE and NRC agreed to hold a public meeting to discuss the level of preclosure design information that should be available at the time of the potential Yucca Mountain (YM) repository license application (LA).

During the TE for aircraft hazard analysis, DOE presented its approach for estimating the frequency of aircraft crashes onto the surface facilities at the potential YM repository. The presentation was a follow-up of the aircraft hazard TE on September 30, 2003, and was based on two DOE documents addressing identification of aircraft-related hazards and aircraft crash frequencies.

DOE stated its aircraft hazard appoach is to etablish a "no-fly zone" and account for the robustness of surface facility walls. Therefore, DOE indicated that aircraft hazards are beyond Category 2 under 10 CFR Part 63 (i.e., less than 1 in 10,000 chance of release during the preclosure period), and the need for further examination of any potential lower-probability consequences is not required to assure safety under 10 CFR Part 63. The aircraft hazard analysis approach credits a "no-fly zone" around the surface facilities to reduce the estimated crash frequency. DOE intends to implement the no-fly zone through a Memorandum of Understanding (MOU) with the U.S. Air Force this year. The aircraft hazard analysis approach also takes credit for selected portions of the surface facilities to withstand an aircraft impact and reduce the potential for release. DOE indicated that it had performed a scoping calculation using the characteristics of an F-16, and that similar calculations using the characteristics of additional aircraft would be performed to provide an adequate basis for the robustness of surface facility walls relied upon in the crash frequency analysis. DOE also indicated that detailed structural calculations would be performed as the design matured.

NRC asked several questions regarding the hazard identification and crash frequency estimation methodologies, bases for different assumptions, potential discrepancies in the use of aircraft mishap data, and the length of the preclosure operations period. NRC also expressed a concern about the level of design information and structural analysis that will be available at the time of LA submittal in order to support the credit taken for structural robustness in the crash frequency analysis. NRC indicated that it would expect a technically adequate structural analysis to support the assumptions made in the aircraft frequency hazard analysis. NRC and DOE agreed to hold a future TE for the structural analyses under aircraft impacts.

Stakeholders provided many comments during the meeting. One stakeholder questioned the objective of the technical exchanges and whether the purpose was to request additional information or help DOE write the license application. Another stakeholder requested the list of future interactions to be updated at the June 6, 2005, NRC and DOE Quarterly Management Meeting. Another stakeholder asked NRC whether it believes it has responsibility for the quality of the license application (NRC stated that DOE has responsibility for the quality of its application). Another stakeholder asked and commented about the negotiations between DOE and the Air Force on the MOU; a difference between the current estimated aircraft crash frequency and the estimated frequency reported in Yucca Mountain Final Environmental Impact Statement; consideration of cruise missile and rocket testing hazards; and the rationale for various assumptions in the aircraft hazard analysis. Another stakeholder stated NRC should look into the establishment of a no-fly zone, and indicated the Air Force could not establish one due to operational difficulties. NRC staff indicated they would consider the stakeholder comments.

During the closing remarks, NRC concluded its discussion by reiterating several important points identified during the meeting. It stated that: (1) the pre-licensing interactions are necessary to ensure NRC expectations of the safety cases, to gain a better appreciation of DOE approaches, and to seek clarification where needed, (2) NRC expects a technically sound, adequate structural analysis that demonstrates robustness of the structural designs for the assumptions used in the aircraft crash frequency analysis, (3) NRC expects adequate technical bases for assumptions and event sequences used in the analyses,(4) based on NRC’s understanding of DOE’s approach, the MOU with the U.S. Air Force should be a part of the

design basis, and (5) NRC did not make any regulatory decisions during this TE meeting. DOE concluded its discussion with several proposed action items that included: (1) DOE will provide NRC with a schedule for vendor documents in support of interactions, (2) DOE will provide proposed dates for future interactions in the NRC/DOE Quarterly Management meeting on June 6, 2005, (3) NRC will schedule a meeting with DOE on the level of preclosure design information for LA, (4) DOE will present updated target TE dates at the beginning of each TE meeting, and (5) DOE would plan to discuss worker doses at a future interaction.

/RA/ Date 6/30/05
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Attachments:
1. Meeting Agenda
2. Meeting Attendees
3. Meeting Presentation Materials