

# ISSUES IN THE LICENSING REVIEW OF THE POTENTIAL YUCCA MOUNTAIN REPOSITORY: CONTAINER, CLADDING AND WASTE FORM

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## **ABSTRACT**

This presentation reviews technical issues involved in the potential review, by the U.S. Nuclear Regulatory Commission (NRC), of the U.S. Department of Energy's license application for the disposal of high-level waste at the proposed Yucca Mountain repository. The presentation focuses on the waste package regarding: (i) the operational safety during the preclosure period; and (ii) the waste isolation during the postclosure period. Waste package includes container, waste form and cladding. For the operational safety, the presentation addresses canister drop, source term, cladding integrity, and exercise of NRC's Preclosure Safety Analysis Tool. For the waste isolation, the presentation addresses waste package corrosion, titanium performance in drip shields, and source term including spent fuel dissolution, solubility limit, colloid formation and cladding performance, and exercise of the NRC's Total-system Performance Assessment Code. Finally, it presents potential collaboration work with the European Commission in research and best practices related to waste package development.

*Disclaimer:* The NRC staff views expressed herein are preliminary and do not constitute a final judgment or determination of the matters addressed or of the acceptability of a license application for a geological repository at Yucca Mountain.