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**PERSPECTIVES ON DEVELOPING INDEPENDENT PERFORMANCE ASSESSMENT
CAPABILITY TO SUPPORT REGULATORY REVIEWS OF THE SAFETY CASE**

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ABSTRACT

The U.S. Nuclear Regulatory Commission (NRC) is charged with conducting a regulatory review of the U.S. Department of Energy (DOE) safety case in support of its license application for a high-level nuclear waste repository at Yucca Mountain in the State of Nevada, USA. A key component of the DOE safety case will be a total-system performance assessment to demonstrate compliance with regulatory requirements for post-closure repository performance. The NRC staff, with assistance from the Center for Nuclear Waste Regulatory Analyses (CNWRA), has developed a review methodology that includes application of risk insights to identify those aspects of the DOE safety case that are important to demonstrating regulatory compliance. To advance the development of risk insights, the NRC and CNWRA staffs have developed an independent total-system performance assessment model of the potential Yucca Mountain repository. This presentation and paper will provide an overview of perspectives gained from the development of independent total-system performance assessment capabilities and how those capabilities will aid in the regulatory review of the DOE performance assessment.

This abstract is an independent product of the CNWRA and does not necessarily reflect the view or regulatory position of the NRC. 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 geologic repository at Yucca Mountain.

Proposed for presentation in Session III.c: Evaluating and Documenting the Confidence in Safety.