



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
ADVISORY COMMITTEE ON NUCLEAR WASTE  
WASHINGTON, DC 20555 - 0001

ACNWR-0204

May 3, 2004

The Honorable Nils J. Diaz  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

SUBJECT: RISK INSIGHTS BASELINE REPORT

Dear Chairman Diaz:

During its 148th and 149th meetings, the Advisory Committee on Nuclear Waste (ACNW) was briefed by Nuclear Regulatory Commission (NRC) staff on results obtained by implementing the staff's risk insights initiative. This briefing was a follow-on to the April 2002 and July 2003 briefings. The risk insights initiative is a program for risk-informing the regulatory activities of the NRC's high-level radioactive waste (HLW) program. Risk insights were defined by the NRC staff as results and findings from performance assessments. In the Commission White Paper the definition refers to risk assessments, implying that the performance assessments must be risk-based in order to provide risk insight results.

The NRC staff reported on the development of an integrated synopsis report that describes the staff's understanding of the key contributors to performance for a potential geologic repository at Yucca Mountain. The report, "*Risk Insights Baseline Report*," is currently undergoing review. It is expected that the report will be made available to the public on completion of the review. In general, the report reflects the NRC staff's assessment of the risk significance of contributors to overall repository performance. The NRC staff's assessments were based on its own independent performance assessment work, reviews of U.S. Department of Energy (DOE) performance assessments, and other documents.

The Committee was impressed with the baseline report effort as it was presented and believes that it provides another important resource for regulating the safety and environmental impacts of a HLW repository. The presentation provided details on the way that risk considerations are incorporated into the NRC staff's review of key technical issues (KTIs). The report can be a major contributor to risk-informing issue resolution and license review processes. In particular, the Committee agrees with the staff that the three major reports—the Yucca Mountain review plan, the integrated issue resolution status report, and the risk baseline report—provide an important foundation for a comprehensive issue resolution and license review process.

In addition to supporting license review, the Committee understands that the risk baseline report and the risk insights in particular are supporting issue and agreement resolution during the current pre-licensing phase. In keeping with the spirit of the probabilistic risk assessment policy statement of the importance of understanding what is really important to risk and reducing unnecessary regulatory burden, risk insights may be used to screen issues and prioritize the scope and effort of safety reviews and analyses. The risk insights presentation included a

thorough explanation of the advantages of knowing the ranking of issues, including the KTI subissues, as low, medium, and high. However, the Committee would like to see this work translated into specific guidance on prioritizing issue resolution. The Committee learned at the 147<sup>th</sup> meeting that not all of the KTI agreements would be resolved at the time the license application is received. The Committee believes only agreements ranked as low risk should remain as unresolved.

Regarding the implementation of the risk insights initiative, the Committee therefore recommends that an effort be made to implement a regulatory risk management process that assures that the resolution of the most important agreements has priority. Such a process implies that there is guidance from the NRC to DOE on screening and prioritizing issues and agreement resolution. The guidance should be clear as to how risk insights are used to rank issues as high, medium, or low significance.

Sincerely,

**/RA/**

B. John Garrick  
Chairman

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B. John Garrick  
Chairman

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