

December 13, 2013

Dr. J. Sam Armijo, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: DRAFT COMMISSION PAPER "RECOMMENDATIONS FOR RISK-INFORMING
THE REACTOR OVERSIGHT PROCESS FOR NEW REACTORS"

Dear Dr. Armijo:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter dated September 19, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13252A282), about the recommendations of the Advisory Committee on Reactor Safeguards (ACRS) on the draft Commission paper, "Recommendations for Risk-Informing the Reactor Oversight Process for New Reactors." The Committee received the draft Commission paper, sent by memorandum, dated June 24, 2013 (ADAMS Accession No. ML13169A406). The NRC staff discussed the draft paper with the ACRS Full Committee on September 5, 2013, and the Reliability and Probabilistic Risk Assessment Subcommittee on July 22, 2013. Based on feedback from the ACRS and external stakeholders, the staff revised the paper to clarify and better support its conclusions and recommendations (ADAMS Accession No. ML13263A351). The NRC staff's response to the conclusions and recommendations in your letter is discussed below.

ACRS Conclusion/Recommendation 1

It is essential that the reactor oversight process (ROP) for new reactors remains objective, risk-informed, understandable, and predictable. An increased reliance on qualitative assessments deserves close scrutiny.

NRC Response

The staff agrees that its oversight of new reactors should be objective, risk-informed, understandable and predictable, consistent with the founding goals of the ROP. The staff does not believe that its proposed approach increases reliance on qualitative assessments. Rather, it promotes a risk-informed approach to assessing safety significance that is informed by the integrated consideration of aspects such as defense-in-depth and safety margins in a structured manner. The staff agrees with the ACRS that such an approach facilitates consistency and transparency of significance determinations. The staff also believes its proposed approach is fully consistent with the concepts in Regulatory Guide 1.174, the existing ROP framework, the founding ROP goals, and the principles of good regulation. If the Commission approves the staff's recommendation, the staff would work with stakeholders to translate the concept into a structured process that is understandable, maximizes use of objective measures, and produces

reliable and predictable regulatory outcomes. The process would be developed over time, tested and refined before it is implemented, and enhanced through experience, consistent with the continuous improvement provisions of the ROP.

ACRS Conclusion/Recommendation 2

The staff should develop guidance for the structured evaluation of qualitative measures, regardless of whether absolute or relative measures are used for the quantitative assessment of risk significance.

NRC Response

The NRC staff agrees with this ACRS recommendation. The staff would develop guidance and process enhancements over the next few years, using existing resources, and well in advance of their potential implementation in the oversight of new reactor operations. The guidance and process enhancements, if approved and implemented, would be refined based on experience and lessons learned in ways consistent with existing provisions for ROP continuous improvement. The staff would work with internal and external stakeholders to formulate the process changes and develop the guidance necessary to implement the noted recommendations and provide an appropriate regulatory response for new reactor applications.

ACRS Conclusion/Recommendation 3

The staff should develop an integrated significance determination process (SDP) that places primary reliance on the use of quantitative measures of the change in risk, supplemented as necessary by qualitative assessments of conditions that are not evaluated fully in the supporting plant risk models. We encourage the staff to continue exploration of relative risk measures.

NRC Response

The staff's recommended approach was not envisioned as a means to compensate for perceived or anticipated limitations of risk models for new reactors. Rather, the staff recommends an integrated approach because it is consistent with the current ROP framework, which applies deterministic criteria and risk insights to inform regulatory decisions. The current framework and governing policy do not direct the staff to assign primary reliance on quantitative measures; both quantitative and qualitative inputs are given due consideration for regulatory decision-making. The technical and policy bases for using both qualitative measures and quantitative risk insights are derived from several sources, most notably RG 1.174, which states that decisions "are expected to be reached in an integrated fashion, considering traditional engineering and risk information, and may be based on qualitative factors as well as quantitative analyses and information." Additionally, although the staff concluded that the shortcomings of a relative risk approach outweigh its benefits and the staff is not recommending the relative risk approach, the staff will continue to be open to additional ideas as it develops the recommended integrated risk-informed approach.

ACRS Conclusion/Recommendation 4

We concur with the staff's recommendation to further analyze the current licensee performance indicators and to develop additional indicators, thresholds, and guidance as appropriate for monitoring the cornerstone performance objectives for new reactors.

NRC Response

The NRC staff appreciates the ACRS's support on this recommendation.

I appreciate the comments and recommendations ACRS has provided and look forward to working with the Committee as the staff develop and draft detailed guidance as directed by the Commission.

Sincerely,

/RA/

Mark A. Satorius
Executive Director
for Operations

cc: Chairman Macfarlane
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
SECY

ACRS Conclusion/Recommendation 4

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NRC Response

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I appreciate the comments and recommendations ACRS has provided and look forward to working with the Committee as the develop and draft detailed guidance as directed by the Commission.

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NAME	HNieh (AHowe for)	GTracy (CAder for)	ELeeds (JUhle for)	MSatorius	
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