December 28, 2015

John W. Stetkar, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: RECOMMENDATIONS ON IMPLEMENTATION OF A RISK MANAGEMENT REGULATORY FRAMEWORK

Dear Chairman Stetkar:

Thank you for your November 13, 2015, letter regarding the U.S. Nuclear Regulatory Commission (NRC) staff recommendations on issues related to implementing a risk management regulatory framework. The Advisory Committee on Reactor Safeguards (ACRS) Subcommittee on Reliability and Probabilistic Risk Assessment discussed a risk management regulatory framework during meetings on September 4, 2013; October 17, 2014; February 20, 2015; June 8, 2015; and October 19, 2015, and the ACRS full committee discussed the subject on November 4, 2015.

The ACRS letter included five conclusions. The NRC staff responses to each of the Committee's conclusions are provided below:

ACRS Conclusion 1

"The principles of a risk management regulatory framework should be established as a vision for how the agency will regulate 10-to-15 years in the future."

NRC Staff Response

The NRC staff agrees with the ACRS's view that continued enhancements to the usage of risk-informed regulatory approaches should be pursued in future regulatory activities. Ongoing regulatory enhancements in the power reactor safety program area include research activities on probabilistic flood hazards analysis, applying lessons learned from the NFPA-805 [Risk-Informed Fire Protection] experience that will facilitate more efficient and effective risk-informed licensing reviews in the future, and the pursuit of multiple risk-informed technical specification initiatives. In the area of oversight, the staff is looking at options for risk-informing the response to operability issues of low safety significance. During the annual rulemaking prioritization process, the staff will use risk insights whenever available along with other factors obtained through consultation with subject matter experts. However, the staff acknologizes that no clear timeframes have been established for completing these risk-informed enhancements.

The implementation of these enhancements is overseen by the NRC's Risk-Informed Steering Committee, whose charter includes the following internal objectives:

- To establish strategic direction of staff activities aimed at more effective implementation of the Commission's PRA [Probabilistic Risk Assessment] Policy Statement and Phased Approach to PRA Quality.
- To develop and communicate a vision for future regulatory use of PRA including aspects not amenable to quantification through PRA (i.e., Security, emergency planning, Radiation Safety, Environmental).

The NRC staff believes that the best approach for developing the agency's future vision on risk management is to make incremental improvements to the current risk-informed regulatory framework. The scope of and schedule for these improvements is guided by the Risk-Informed Steering Committee, consistent with the availability of budgeted resources.

ACRS Conclusion 2

"The staff should work with licensees to develop a voluntary approach for a risk-informed alternative licensing basis. This approach should evolve from initial applications by interested operating reactor licensees. Having a comprehensive framework in place will be especially important for future licensing and oversight of new reactors."

NRC Staff Response

The NRC staff agrees that developing a voluntary approach for a risk-informed alternative licensing basis is a potentially useful risk-informed initiative, especially for new Generation IV reactor designs. On July 29, 2015, the staff held a public meeting to further discuss this potential approach. During the meeting, industry stakeholders were not supportive of pursuing this approach because available resources were assigned to other risk-informed initiatives.

The charter of the NRC's Risk-Informed Steering Committee includes the following external objectives:

- To engage industry and listen to concerns relative to the use of PRA to support regulatory decision-making.
- To communicate NRC actions with regard to addressing the above stated objectives.
- To discuss what initiative can be taken by the NRC to incentivize industry to continue to develop PRAs to help both reduce uncertainty and provide a framework to make decisions in light of inherent uncertainty in PRA models.
- To discuss industry actions necessary to achieve the vision for future use of PRA to support regulatory decisions.

Under the oversight of the NRC's Risk-Informed Steering Committee, the NRC will continue its discussions with licensees (and with the industry's Risk-Informed Steering Committee) related to

the above-stated objectives, with particular focus on the new Generation IV reactor designs. This could eventually lead to development of a risk-informed alternative licensing basis for future generations of reactors.

ACRS Conclusion 3

"We agree with the staff's conclusion to not establish a formal "design-basis extension" category of events at this time."

NRC Staff Response

The NRC staff acknowledges the Committee's endorsement.

ACRS Conclusion 4

"A Commission policy statement that includes the definition, objectives, and principles of defense in depth can be deferred until there is clear direction to move forward with a regulatory framework that encompasses an integrated risk-informed defense-in-depth concept."

NRC Staff Response

Ongoing work in response to the Commission's Staff Requirements Memorandum in response to SECY-11-0014, "Use of Containment Accident Pressure in Analyzing Emergency Core Cooling System and Containment Heat Removal System Pump Performance in Postulated Accidents," will clarify and enhance the existing guidance on defense in depth in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." The NRC staff believes that resource limitations preclude committing the substantial additional resources needed to develop the policy and guidance associated with formally defining the objectives and principles of defense in depth and establishing criteria to determine when adequate defense in depth is achieved.

ACRS Conclusion 5

"A new or revised Commission policy statement on agency-wide adoption of a risk management regulatory framework is not needed."

NRC Staff Response

The NRC staff agrees with the Committee that an agency-wide risk management policy statement is not needed.

The staff appreciates the time and effort that the ACRS has devoted to this important subject. We look forward to continued engagement with the ACRS in the future.

Sincerely,

/RA Michael R. Johnson Acting for/

Victor M. McCree
Executive Director
for Operations

NRC Staff Response

The NRC staff agrees with the Committee that an agency-wide risk management policy statement is not needed.

We look forward to continued engagement with the ACRS in the future. The staff appreciates the time and effort that the ACRS has devoted to this important subject.

Sincerely,

/RA Michael R. Johnson Acting for/

Victor M. McCree
Executive Director
for Operations

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Letter to John W. Stetkar from Victor M. McCree dated December 28, 2015

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