December 6, 2013

Dr. J. Sam Armijo, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: STAFF DISPOSITION OF RECOMMENDATION 1 OF THE NEAR-TERM TASK FORCE REPORT

Dear Dr. Armijo:

Thank you for your November 20, 2013, letter regarding the NRC staff recommendations to the Commission for disposition of Recommendation 1 of the Near-Term Task Force (NTTF) Report (July 12, 2011). The staff appreciates the time and effort that the Advisory Committee on Reactor Safeguards (ACRS) has devoted to this important subject, as reflected in meetings that the ACRS Fukushima subcommittee held on August 15, 2012; December 4, 2012; May 23, 2013; September 4, 2013; and November 5, 2013, and that the ACRS full committee held on November 7, 2013.

The ACRS letter included five conclusions. The first conclusion stated:

1. The staff's proposed approach to disposition NTTF Recommendation 1 will provide limited improvement to the current regulatory structure.

The staff agrees with the ACRS that the three proposed improvement activities will result in modest safety improvements. The staff's evaluation confirmed that the existing regulatory framework is robust and that the NRC does not need to make framework improvements to ensure an acceptable level of safety for currently operating plants. The staff has defined its proposed improvement activities in such a way as to provide increased regulatory efficiency, clarity, and coherence and modest safety benefits without requiring significant resource expenditure or an undue increase in regulatory burden. The proposed improvements build incrementally on the NRC's existing approach to the regulation of nuclear power reactors.

The staff considered a broad range of regulatory framework improvements, including implementation of Recommendation 1 as set forth by the NTTF. However, the need for extensive changes to the regulatory framework must be judged against the fact that the NRC has initiated many past and ongoing regulatory activities to both identify and address new safety issues and reduce uncertainties associated with existing safety concerns. These activities, including the ongoing post-Fukushima actions, have been

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instituted under the existing regulatory framework. Altogether, these activities have and will result in substantial safety improvements.

The second ACRS conclusion stated:

2. We concur with the staff's conclusion that rulemaking is not needed to establish a new design-basis extension category. Developing guidance to assure consistency in the regulatory treatment of issues assigned to that category has merit.

The staff agrees with the ACRS on both of these observations.

The third ACRS conclusion stated:

3. Establishing the Commission's expectations for defense-in-depth through a Commission Policy Statement that includes the definition, objectives, and principles of defense-in-depth is valuable only if there also is clear direction to move forward with a regulatory framework which includes development of a risk-informed, performance-based, defense-in-depth concept. The staff's proposed disposition of NTTF Recommendation 1 does not fully embrace this fundamental concept. Commission direction on the long term plan for a risk management regulatory framework is needed.

The staff agrees with the ACRS's view that NTTF Recommendation 1 is consistent with a regulatory framework for nuclear power reactors that embodies the concepts of risk and defense-in-depth as fundamental elements of a rational, objective, integrated decisionmaking process. The staff also agrees with the ACRS's observation that when Recommendation 1 states that the NRC's regulatory framework should "appropriately [balance] defense-in-depth and risk considerations," that these concepts should not be considered in isolation, and instead should be considered in an integrated decisionmaking process that is informed by current understanding of the risk from each hazard, uncertainty about that risk, and consideration of defense-in-depth measures that can compensate for those uncertainties. Under the current decisionmaking process for nuclear power reactors (e.g., Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis"), quantitative surrogates (i.e., core damage and large early release frequencies) for the Commission's Safety Goals are well established; however, defense-in-depth (one of the five key principles of risk-informed decisionmaking) lacks a formal definition or established decision criteria. The staff's proposed improvement activity for defense-in-depth seeks to develop a formal definition of defense-in-depth and objective decision criteria analogous to the existing risk criteria.

The staff's objective, in developing and recommending Improvement Activities 1 and 2, is for the NRC to improve its existing risk-informed decisionmaking process. Taken together, Improvement Activities 1 and 2 would increase the integration of risk and defense-in-depth considerations in NRC decisionmaking. The staff believes that these activities represent improvements that can be accomplished without significant burden on current nuclear power plant licensees and applicants. Further, these activities constitute practical improvements that

can be implemented at a relatively low cost to the NRC, while consideration is given to other safety and regulatory initiatives such as the Risk Management Regulatory Framework.[1]

The fourth ACRS conclusion stated:

4. Enhanced monitoring and documentation of future industry initiatives is a necessary process improvement. The regulatory inspection requirements should be designed carefully to optimize valuable inspection resources.

The staff agrees with the ACRS on these observations. If Improvement Activity 3 is approved by the Commission, the staff will ensure that it will be implemented in a manner which makes efficient use of NRC staff resources, with careful consideration given to any impacts on the existing operating reactor inspection program.

The fifth ACRS conclusion stated:

5. The staff should reconsider the preliminary characterizations presented on the costs and value of site-specific and generic probabilistic risk assessment (PRA) applications. The discussions appear to be biased toward limited application of PRA in Improvement Activities 1 and 2 and may inappropriately marginalize and inadvertently prejudge the value of proceeding with a risk management regulatory framework for operating reactors.

The staff agrees with the ACRS that use of PRA technology has substantial value, as illustrated by the multiple NRC programs and processes summarized in Attachment 1 to Enclosure 1 of SECY-13-0132. The staff notes that its consideration of the cost and value of PRA was limited to determining whether a regulation for a PRA, for the purpose of supporting Improvement Activities 1 and 2, could meet the criteria in the backfit rule and should be imposed on operating reactors. As a result of ACRS comments and questions on this subject, the staff expanded its discussion of the expected safety benefits as well as costs of a PRA regulation for currently operating reactors, from the standpoint of Improvement Activities 1 and 2. The staff is recommending that the design-basis extension category be applied on a generic basis, through the adoption of generically-applicable regulations and issuance of broadly-applicable orders, rather than on a plant-specific basis. Based on currently available information, the staff concluded that issuing a regulation to require operating reactor licensees to perform and periodically update plant-specific PRAs is not needed to implement the staff's recommendations for dispositioning NTTF Recommendation 1. Although the staff determined that a regulation for a PRA was not necessary to implement Improvement Activities 1 and 2, the staff recognizes the

[1] June 14, 2012, Chairman tasking memorandum, "Evaluating Options Proposed for a More Holistic Risk-Informed, Performance-Based Regulatory Approach" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML121660102) directed the staff to consider, when developing options for the disposition of Recommendation 1, the regulatory framework recommendations for nuclear power reactors in NUREG-2150, "A Proposed Risk Management Regulatory Framework."

value of PRA technology and supports licensees' use of plant-specific PRAs. In addition, the ongoing staff evaluation of the Risk Management Regulatory Framework will afford the Commission the opportunity to consider the overall regulatory benefits and costs of a PRA regulation.

Sincerely,

/RA/

Mark A. Satorius
Executive Director for Operations

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Sincerely,

/RA/

Mark A. Satorius
Executive Director for Operations

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