March 15, 2018

MEMORANDUM TO: Brian E. Holian, Director
Office of Nuclear Reactor Regulation

FROM: Russell N. Felts, Deputy Director /***RA***/
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: RISK INFORMED DECISION MAKING ACTION PLAN TASKS 5, 6, AND 7 RECOMMENDATIONS

In a June 29, 2017, memorandum to staff (ML17180A061), the Office of Nuclear Reactor Regulation (NRR) Office Director directed a number of long- and short-term actions, including the following quick turnaround tasks associated with recommendations from a Differing Professional Opinion (DPO) Panel Report (ML17180A061). In an August 1, 2017, e-mail, I completed these tasks by providing recommendations to you. You subsequently directed me to follow up with further deliberation, including a discussion with the NRR Leadership Team (LT), prior to making final recommendations to you. The LT agreed with the recommendations below in an LT meeting on December 5, 2017.

Tasks from NRR Office Director Memorandum

- Recommendations 5 and 6 - The staff should evaluate these recommendations and provide feedback on whether any actions would be appropriate to consider by July 31, 2017.

- Recommendation 7 - The staff should evaluate the guidance in the four pertinent documents discussed in the recommendation to determine if better harmonization is appropriate. Provide recommendations on a path forward, if appropriate, by July 31, 2017.

Related Recommendations from DPO Panel Report:

5. Evaluation of whether a standardized method for using insights from independent risk tools (e.g., Standardized Plant Analysis Risk (SPAR) model) to support the review of license amendment requests (LARs) should be considered to ensure an objective, consistent and independent verification of the licensee's risk evaluation.

6. Additional guidance should be evaluated that would require a critical lessons learned review be conducted after first of kind licensing actions to determine, in part, whether this application and/or safety evaluation should be used going forward as a precedent.

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7. Additional guidance should be evaluated on the conduct of Probability Risk Assessment (PRA) sensitivity studies.

Staff Feedback:

Regarding DPO Panel Report Recommendation 5:

The Nuclear Regulatory Commission (NRC) uses a well-established process for conducting risk-informed licensing reviews that may include use of a SPAR model, and emphasizes the need for PRA technical adequacy commensurate with the regulatory decision that is being made. The NRC reviews the closure of peer review facts and observations to ensure that there is reasonable assurance that the licensee PRA model supports the regulatory decision. Requiring use of an additional, specific risk tool would add another layer to the review process and could lead to greater complexity, including potentially a greater number of requests for additional information. While use of the SPAR models has been appropriate for regulatory decisions in the inspection program, adding this practice to the existing licensing review process could unnecessarily affect the complexity and timeliness of licensing decisions.

Reliability & Risk Analysts have at their disposal various tools, including SPAR, to assist them, as they deem appropriate to make a regulatory decision. However, due to the vast variability of requests and modeling limitations, not all tools are appropriate to be used for each case. In general, SPAR models are used by license reviewers when there are questions regarding the licensee's PRA model, and there are time limitations that preclude full resolution of the questions. Requiring the use of one (or more) specific tool could be detrimental to the many LARs where that tool is not applicable or suited for a particular case. Thus, requiring use of SPAR models for all licensing actions could result in added resource expenditures without a commensurate safety benefit.

In addition, an alternative interpretation of the recommendation is to use the proposed approach in lieu of the existing licensing review process. We have determined that such changes constitute a significant departure from existing agency positions for NRC reviews of risk-informed LARs. Staff development of this new approach would require much additional effort without a clear or certain benefit.

Staff therefore recommends continuing the practice of allowing licensing reviewers to use currently available tools at their discretion for efficient and effective LAR reviews.

Regarding DPO Panel Report Recommendation 6:

Division of Operating Reactor Licensing is developing guidance with criteria for when to conduct a lessons-learned review following a licensing action. Appropriate consideration is being given to precedent for first-of-a-kind reviews as compared to precedent that may emerge from routine licensing actions. **Risk-Informed Decision-Making Action Plan Task 5 will evaluate and track this recommendation to closure.**

Regarding DPO Panel Report Recommendation 7:

Regulatory Guide (RG) 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," describes a risk-informed approach for assessing the impact of proposed licensing-basis changes by considering engineering issues and risk insights. RG 1.177, Revision 1, "An

Approach for Plant-Specific, Risk-Informed Decision making: Technical Specifications," describes a risk-informed approach specifically for assessing proposed technical specification changes and is based on the methods and principles described in RG 1.174. PRA quality associated with risk assessments under RGs 1.174 and 1.177 is evaluated in accordance with RG 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities." In accordance with RGs 1.174, 1.177, and 1.200, when implementing risk-informed decision-making, the staff expects that risk assessments appropriately consider the impacts of uncertainties in the PRA and its results. These regulatory guides explicitly reference NUREG-1855, "Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decision Making," for guidance on how to address and treat uncertainties associated with a PRA, including conducting sensitivity studies. The integration of these documents provides adequate and consistent guidance for implementing risk-informed decision-making. Development of additional guidance for conducting sensitivity studies would be redundant to existing guidance and provide limited additional benefit. **Staff believes that current guidance adequately captures treatment of PRA uncertainties, and therefore recommends against development of additional guidance.**

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