REGULATORY ANALYSIS

DRAFT REGULATORY GUIDE DG-1286, Revision 1

PLANT-SPECIFIC, RISK-INFORMED DECISIONMAKING: INSERVICE TESTING

(Proposed Revision 1 for Regulatory Guide 1.175, dated August 1998)

1. Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) is considering revising the Regulatory Guide (RG) 1.175, "An Approach for plant specific, Risk-Informed Decisionmaking: Inservice Testing." RG 1.175 was issued in 1998 to provide application specific details of a method acceptable to the NRC staff for developing a risk-informed inservice testing (RI-IST) program. It supplements the information given in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 3, issued January 2018.

RG 1.174 provides precise language to assure that the defense-in-depth philosophy is interpreted and implemented consistently, which includes similarly revising other regulatory guidance such as RG 1.175 that refers to defense-in-depth philosophy. Specifically, the Section C.2.2.1 of RG 1.175 would include guidance related to defense in depth.

Additionally, the staff would revise this guide to (1) adopt the term "PRA acceptability," and related phrasing variants, instead of terms such as "PRA quality," "PRA technical adequacy," and "technical adequacy" to describe the appropriateness of the Probabilistic Risk Assessment (PRA) used to support risk-informed licensing submittals; (2) update Regulatory Position C.2.2.3, "Evaluation of Risk Impact," of this RG to be consistent with Section C.2.3 in RG 1.174, which provides specific considerations with respect to determining the acceptability of the PRA used in risk-informed decisionmaking; and (3) incorporate guidance related to regulatory changes to CFR 50.55a and endorsing the OM Code for developing and implementing programs for the inservice testing of pumps and valves at commercial nuclear power plants. Note that the previously approved ASME Boiler and Pressure Vessel (BPV) Code, Section XI, "Inservice Inspection Program," separated the "pump and valve" requirements from Section XI and combined those requirements into the ASME OM Code. The NRC endorsed the OM Code for the first time in an amendment to 10 CFR 50.55a published in 1999.

2. Objective

This revision of the guide would provide updated guidance on the defense-in-depth philosophy to be consistent with the related guidance described in Revision 3 of RG 1.174 and expand the guidance on the meaning of, and the process for, assessing defense-in-depth considerations. Specifically, this revision of RG 1.175 would reference the defense-in-depth guidance in RG 1.174 in several staff regulatory positions. This revision would also eliminate the Section XI of BPV Code and only include reference to the ASME OM Code throughout the RG.

Additionally, the staff would revise the guide this RG to adopt the term "PRA acceptability," and related phrasing variants to describe the appropriateness of the PRA used to support risk-informed licensing submittals, instead of terms such as "PRA quality," "PRA technical adequacy," and "technical adequacy," and revise the title of Section 2.3 PRA to "2.2.3

Evaluation of Risk Impact," of this DG to keep the RI-IST program current and maintain consistency with other NRC guidance.

3. Alternative Approaches

The NRC staff considered the following alternative approaches:

1. Do not revise RG 1.175

2. Withdraw RG 1.175

3. Revise RG 1.175 to address the current methods and procedures.

Alternative 1: Do Not Revise RG 1.175

Under this alternative, the NRC would not revise RG 1.175 and would retain the current version of the RG. This alternative is considered the "no-action" alternative and provides a baseline condition from which the staff will assess any other alternatives. Although this alternative would be less costly to the NRC in the short term than the proposed Alternative 3, it would impede accessibility to the most current regulatory guidance and would be expected to be more costly in the long term to the NRC, the public, and licensees since the NRC would continue to review each application on a case-by-case basis. This could result in inconsistent interpretation and application of the guidance.

Alternative 2: Withdraw RG 1.175

Under this alternative the NRC would withdraw RG 1.175. This would eliminate the issues identified above regarding the RG. However, it would also eliminate the only readily available description of the methods the NRC staff considers acceptable for the use of PRA for risk-informed applications for RI-IST in demonstrating compliance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit." Similarly, with 10 CFR 50.55a, "Codes and Standards," which requires, in part, that systems and components must meet the requirements of the ASME OM Code, as specified in 10 CFR 50.55a(b) and (f), and 10 CFR 50.59, "Changes, Tests and Experiments," which provides a threshold for determining when NRC approval of changes, tests, or experiments is necessary to preserve the basis on which the NRC issued the facility operating license.

Although this alternative would be less costly to the NRC in the short term than the proposed Alternative 3, it would impede accessibility to the most current regulatory guidance and would be expected to be more costly in the long term to the NRC, the public, and licensees since the NRC would continue to review each application on a case-by-case basis.

Alternative 3: Revise RG 1.175

Under this alternative, the NRC would revise RG 1.175. This revision would incorporate the latest guidance regarding defense-in-depth, supporting information, and use of risk information to evaluate changes to plant TS. Revising RG 1.175 would help ensure that NRC staff, the industry, and the public have access to the most current guidance available that accurately reflects the agency's position.

The impact to the NRC would be the costs associated with preparing and issuing the RG revision. The impact to the public would be the voluntary costs associated with reviewing and providing comments to NRC during the public comment period. The benefit to NRC staff and its applicants would be the benefits associated with enhanced efficiency and effectiveness in using a common guidance document as the technical basis for license applications and other interactions between the NRC and its regulated entities. It could also lead to cost savings for the industry, especially with regards to applications that affect defense-in-depth and use risk information to evaluate changes to nuclear power plant IST.

Conclusion

Based on this regulatory analysis, the NRC staff concludes that revision of RG 1.175 is warranted. The revision will enhance the efficiency and effectiveness of license applications for changes to RI-IST program and related regulatory reviews. By doing so, the NRC would ensure that the RG guidance available in this area is current and accurately reflects the staff's position.