REGULATORY ANALYSIS

DRAFT REGULATORY GUIDE DG-1288
AN APPROACH FOR PLANT-SPECIFIC, RISK-INFORMED DECISIONMAKING FOR INSERVICE INSPECTION OF PIPING

(Proposed Revision 2 of Regulatory Guide 1.178, dated September 2003)

1. Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) published Revision 1 of RG 1.178, Plant-specific, Risk-Informed Decisionmaking for Inservice Inspection of Piping," in September 2003. Revision 1 provides risk information to evaluate changes to nuclear power plant inservice inspection of piping to assess the impact of such proposed changes on the risk associated with plant operation. The NRC is considering revising RG 1.178 to keep it current as described below.

This revision of RG 1.178 would include the Standards and Codes that the American Society of Mechanical Engineers (ASME) N-716-1, "Alternative Classification and Examination Requirements, Section XI, Division 1," dated January 27, 2013, which describes a Risk-informed Inservice Inspection (RI-ISI) process as stated in RG 1.147. Also, this revision would be consistent with the defense-in-depth philosophy described in RG 1.174, to expand the meaning of, and the process for, assessing defense-in-depth considerations. Specifically, this revision of RG 1.178 would reference the defense-in-depth guidance in RG 1.174 in its staff regulatory positions.

In addition, this revision would update Regulatory Guidance C.2.2, "Probabilistic Risk Assessment," 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.

Lastly, other global changes include:

- References to the term "traditional" (e.g., traditional engineering, traditional considerations, traditional methods) were changed to "deterministic" to be more aligned with NRC language (e.g., "PRA Policy Statement" (60 Federal Register 42622, August 16, 1995).

- Numerous editorial and formatting changes were made to improve readability of this RG and keep up with the RG template.

2. Objective

This revision of the guide 1) provides 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 1.178 references the defense-in-depth guidance in RG 1.174 in several staff regulatory positions, 2) update Regulatory Guidance C.2.2, "Evaluation of Risk Impact," of this RG to be consistent with Section C.2.3 in RG 1.174, "Determining the Acceptability of a Probabilistic Risk Assessment," which provides specific considerations with respect to determining the acceptability of the PRA used in risk-informed decisionmaking and, 3) add the reference to ASME Code Case N-716-1, "Alternative Classification and Examination Requirements, Section XI, Division 1," dated January 27, 2013, which describes a RI-ISI process as approved in RG 1.147.

3. Alternative Approaches

The NRC staff considered the following alternative approaches:

1. Do not revise RG 1.178
2. Withdraw RG 1.178
3. Revise RG 1.178 to address the current methods and procedures.

Alternative 1: Do Not Revise RG 1.178

Under this alternative, the NRC would not revise RG 1.178 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 1.178

Under this alternative the NRC would withdraw RG 1.178. 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-ISI in demonstrating compliance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," and 10 CFR 50.55a, "Codes and Standards," requires, in part, that systems and components must meet the requirements of the ASME Code Case as specified in 10 CFR 50.55a and 10 CFR 50.59, "Changes, Tests and Experiments," 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 1.178

Under this alternative, the NRC would revise RG 1.178. 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 1.178 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 ISI.

Conclusion

Based on this regulatory analysis, the NRC staff concludes that revision of RG 1.178 is warranted. The revision will enhance the efficiency and effectiveness of license applications for changes to RI-ISI 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.