

NEI Position Paper
Probabilistic Risk Assessment (PRA) Technical Adequacy for Risk-Informed
Inservice Inspection (RI-ISI)

RI-ISI has been one of the most widely implemented risk-informed activities in the industry. It has been utilized for almost 10 years and has been implemented at nearly every operating commercial reactor. The use of risk information in the ISI program has allowed plants to better focus inspections on the most important locations, thus maintaining or improving public health and safety while reducing occupational dose.

NRC Regulatory Guide (RG) 1.200, Revision 1, "An Approach for Determining the Technical Adequacy of PRA Results for Risk-Informed Activities," issued in January 2007, establishes expectations for conformance with PRA consensus standards for PRA technical adequacy determination. The scheduled effective date of RG 1.200 for applications such as RI-ISI, is January 1, 2008. NRC has identified that it may give low priority to risk-informed submittals received in and after 2008 if the supporting documentation does not address RG 1.200 relative to PRA technical adequacy or provide an acceptable alternative.

The industry has conducted a review of RG 1.200, the NRC approved RI-ISI methodologies, and a number of NRC approved RI-ISI applications in order to define acceptable levels of PRA technical adequacy to support RI-ISI applications going forward. The results of this assessment identified that the PRA technical adequacy review conducted for implementation of the Mitigating Systems Performance Index (MSPI) implementation accomplished a substantial amount. MSPI implementation involved plants assuring that their PRAs were of sufficient technical adequacy by performing self-assessment using the NEI-00-02 process as modified by Appendix B of RG 1.200, or by performing a Birnbaum value cross comparison. This assessment, which is documented in the MSPI basis document for each plant, involved resolving PRA peer review facts and observations categorized as A or B.

Further, a self assessment was performed addressing the relevant supporting level requirements of the ASME internal events PRA standard (Table G5 of NEI 99-02 Revision 5). The referenced supporting level requirements were determined through an expert team including NRC and industry personnel as being relevant to the modeling of plant mitigation systems. As most plants used the above approach, the mitigating systems covered by MSPI have been evaluated for their ability to fulfill RG 1.200 expectations. MSPI addresses mitigating systems for loss of coolant accident initiating events, as well as other initiating events. For the purposes of risk-informed ISI, these same mitigation systems are important, and the same PRA elements would be applicable. Thus, the elements of 1.200 are fulfilled for risk-informed ISI applications for plants that used the above approach.

The attached provides the industry recommended PRA technical adequacy elements for RI-ISI applications. As demonstrated in the attached document, these recommendations are primarily a function of the scope of the RI-ISI application (e.g. Class 1 versus fullscope) and the use of a previously conducted internal flooding study.

NEI requests that the NRC staff review and provide feedback on the attached. Agreements on these criteria should substantially streamline NRC review of forthcoming RI-ISI submittals. Once NEI and NRC reach an agreement on scheduling and documentation of RG 1.200 fulfillment for risk-informed ISI programs, NEI will forward this information to the licensees.

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