

Regulatory Guide 1.200 Enhancement Working Group Proposed Problem Statement

Issue Description

The industry and NRC have long-term difficulties associated with communicating information on PRA technical adequacy, including inability to reach a mutual understanding of expectations for documentation of this information in licensing applications and disagreements regarding the appropriate level of staff review of the PRA supporting the licensing application. The NRC's regulatory position on PRA technical adequacy for licensing applications is documented in RG 1.200; however, the staff has expressed concern with the sufficiency of this process for new models and methods, while the industry has encountered frustration when attempting to pursue innovative approaches, and when being faced with additional staff questions despite preparing licensing applications and responses to requests for additional information in accordance with RG 1.200. To address these problems, the process currently laid out in RG 1.200 needs enhancement to realize the full value of PRA standards and peer reviews, and to reduce associated burden to licensees and the NRC.

Major Objectives

Develop a consensus process for making new PRA methods available for regulatory application

There is a need to have an agreed upon process that ensures that the methods used have received an appropriate level of technical scrutiny by experts before being used and that the peer review teams have the appropriate expertise to review the application of these methods. An important aspect of this is the process by which methods are accepted for use. At present there is not a clear understanding of what constitutes a "consensus method," and so all "new methods" are subjected to a detailed review by the NRC when used in licensing applications. A more graded approach is needed, based on the pedigree of the method.

1. Existing methods that are commonly used for US nuclear power plant PRAs
2. Existing methods that are commonly used for nuclear power plant PRAs in other countries, but not commonly in the US
3. Existing methods that are commonly used in other industries, and have a corollary in nuclear power plants, but have not commonly been used in nuclear power plant PRAs
4. New methods developed by or in cooperation with NRC or other US or international regulatory body
5. New methods developed by research organizations independently of NRC, regardless of origin
6. New methods developed and implemented within a specific PRA submittal

Each of these methods bins needs to be defined as to the attributes that make it fall into a specific category, and then the conditions under which they can be used in US NPP PRAs ("criteria for appropriateness for use") needs to be established, and a simple vetting process for determining that the method meets the criteria. Where necessary, a peer-review process for determining appropriateness would be established. It is expected this would only be required for 5 and 6.

The additional problem is a current lack of assurance that the peer review team members are appropriate for the review. To assure adequate peer review of the PRA, a documented set of criteria must be available to assure that the review team has the necessary expertise to perform the peer review (i.e., that the reviewers would be qualified to perform the analytical tasks that they are

reviewing). This requires a "generic" set of criteria applicable in cases of PRAs that use only methods in bin 1. There also needs to be a process for assuring the necessary expertise if methods in bins 2 through 6 are used.

Improve process for and documentation of closure of F&Os

The requirement to retain and report all past Peer Review F&Os until re-evaluated by another Peer Review is an administrative burden that does not provide a benefit to either the utility or the NRC. The current process results in an additional burden for both in the effort required for the preparation of the discussion of PRA technical adequacy section in the License Amendment Requests followed by the NRC review of the F&O resolution. The NRC review frequently generates subsequent NRC requests for additional information (RAIs) and finally the effort of licensee in preparing RAI responses. The only currently accepted F&O closure path is the use of the Peer Review process, which is an additional cost and strain on limited PRA resources. In order to reduce this burden on both licensees and NRC to retain, report and review the F&Os that have been resolved, there is a need to provide an additional cost effective, robust process to allow licensee to close F&Os and eliminate further NRC reviews.

This process needs to be developed to allow closure of peer review findings that address both the technical expertise required to close a finding as well as the documentation required to support peer review finding closure. In addition, once a finding has been considered appropriately closed, no further licensee or NRC review of the finding should be required to support a risk informed regulatory submittal. An appropriate closure process should consider:

- If/When NRC review of the closure is required
- The type of finding (e.g., finding related to methodology issue should be treated differently from findings related to errors or documentation)
- Whether the finding resulted in a Supporting Requirement being considered Not Met
- Findings related to Un-reviewed Analysis Methods.

Evaluate any additional gaps in current peer review process

To ensure that all open issues are addressed, the working group will conduct a thorough evaluation of all difficulties the NRC and industry have encountered with the peer review process. This will involve a benchmark of current practices against documented, NRC-endorsed NEI peer review guidance.

Work Product/Goal

Following development of solutions to the major issues identified above, the working group will develop draft supporting guidance for RG 1.200. It is envisioned that this draft guidance may propose changes to NEI peer review guidance, and may also call for issuance of interim staff guidance on the topic.