Risk Evaluation Approaches

The NRC has indicated a need to include a requirement related to their acceptance of the PRA models in plant-specific Safety Evaluations for amendments to adopt TSTF-505. The primary purpose of this requirement would be to specify when NRC prior approval is needed.

In a May 4 NRC document on open issues with TSTF-505, the NRC proposed the following as a license condition. The sentences have been numbered for reference:

> [1] The risk assessment approach, methods, and data shall be acceptable to the NRC, be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. [2] Acceptable methods to assess the risk from extending the completion times may include methods that are approved for use in the RICT program, or methods generically approved for use by NRC. [3] If a licensee wishes to change its methods, and the change is outside the bounds of the license condition, the licensee will need NRC approval, via a license amendment, of the implementation of the new method in its RMTS program.

The intent of sentence [1] appears to be to specify that the risk assessment approaches supporting the RICT program are acceptable to the NRC. While the meaning of "method" is potentially open to interpretation, Regulatory Guide 1.200 states that "For a method or approach to be considered a PRA, the method or approach (1) provides a quantitative assessment of the identified risk in terms of scenarios that result in undesired consequences (e.g., core damage or a large early release) and their frequencies, and (2) is comprised of specific technical elements in performing the quantification. A method that does not provide a quantified assessment of the defined risk or does not include the technical elements specified in Regulatory Position 1.2 is not considered to be a PRA." It is clear from the discussion in Regulatory Guide 1.200 that "method," in this context, means PRA (e.g. seismic PRA) versus non-PRA (e.g. Seismic Margin Analysis) methods. Therefore, the intent of sentence [1] is addressed by specifying the technical approach – e.g. PRA vs. non-PRA – that the NRC has approved for a given hazard are to be used for the RICT program. It is suggested that the term "technical approach" be used in this context to reduce ambiguity.

The intent of sentence [2] appears to be to specify that the methods (defined per the discussion above) should be acceptable to the NRC. By specifying the NRC approved approach for each hazard group, the purpose of this sentence is achieved.

The intent of sentence [3] appears to be to specify that changes to the approved technical approach for any given hazard group, or potentially some method (methodology) changes, would require a license amendment request. To address the potential impact of PRA upgrades – that is, incorporation of different methods (methodologies) – licensees will review the impact of a PRA upgrade on RICTs of less than 30 days, and if the change causes an increase of more than 50% to the RICT, an appropriate focused-scope peer review will be conducted, and all associated findings will be closed by an NRC-approved process prior to use of the updated PRA model.

To address the intents as outlined above, in lieu of a license condition on PRA methods, the industry proposes adding the following paragraph to the Technical Specification (TS) Risk Informed Completion Time Program:

d. The risk evaluation approaches to calculate a RICT are: [Internal Events PRA to address internal risk; Fire PRA to address fire risk; Seismic Margin Analysis (SMA) to address seismic risk; Individual Plant Examination of External Events (IPEEE) screening to address the risk from other external hazards (high winds, external floods); and Shutdown Safety Plan to address shutdown risk]. If a PRA model upgrade results in an increase of more than 50% to an individual calculated RICT action of less than 30 days, a focused-scope peer review will be performed. Any findings identified by the peer review must be closed via an NRC-endorsed finding closure process, or prior NRC approval is required to use of the upgraded PRA to calculate a RICT. Use of a risk evaluation approach other than those listed above for the RICT program requires prior NRC approval.

Including the requirement in the TS Risk Informed Completion Time Program groups similar requirements together. A license condition is more appropriate for regulatory requirements that are not directly linked with a Technical Specifications requirement. As the TS are an attachment to the license, both approaches have the same legal impact.