

approach outlined in RG 1.174 is appropriate for use in this rulemaking.

It is important to note that this rulemaking effort, while intended to ensure that the scope of special treatment requirements imposed on SSCs is risk-informed, is not intended to allow for the elimination of SSC functional requirements, or to allow equipment that is required by the deterministic design basis to be removed from the facility (*i.e.*, changes to the design of the facility must continue to meet the current requirements governing design change, most notably § 50.59). Instead, this rulemaking should enable licensees and the staff to focus their resources on SSCs that make a significant contribution to plant safety by restructuring the regulations to allow an alternative risk-informed approach to special treatment. Conversely, for SSCs that do not significantly contribute to plant safety, this approach should allow an acceptable, though reduced, level of assurance that these SSCs will satisfy functional requirements.

III. Proposed Regulations

The Commission is proposing to establish § 50.69 as an alternative set of requirements whereby a licensee may undertake categorization of its SSCs using risk insights and adjust treatment requirements based upon their resulting significance. Under this approach, a licensee would be allowed to reduce special treatment requirements for SSCs that are determined to be of low safety significance and would enhance requirements for treatment of other SSCs that are found to be safety significant. The proposed requirements would establish a process by which a licensee would categorize SSCs using a risk-informed process, adjust treatment requirements consistent with the relative significance of the SSC, and manage the process over the lifetime of the plant. To implement these requirements, a risk-informed categorization process would be employed to determine the safety significance of SSCs and place the SSCs into one of four risk-informed safety class (RISC) categories. It is important that this categorization process be robust to enable the Commission to remove requirements for SSCs determined to be of low safety significance. The determination of safety significance would be performed by an integrated decisionmaking process which uses both risk insights and traditional engineering insights. The safety functions would include both the

design basis functions (derived from the "safety-related" definition, which includes external events), as well as functions credited for severe accidents (including external events). Treatment requirements for the SSCs are applied as necessary to maintain functionality and reliability, and are a function of the category into which the SSC is categorized. Finally, assessment activities would be conducted to make adjustments to the categorization and treatment processes as needed so that SSCs continue to meet applicable requirements. The proposed rule also contains requirements for obtaining NRC approval of the categorization process and for maintaining plant records and reports.

III.1.0 Categorization of SSCs

Section 50.69 would define four RISC categories into which SSCs are categorized. Four categories were chosen because it is the simplest approach for transitioning between the previous SSC classification scheme and the new scheme used in the proposed § 50.69. The depiction in Figure 1 provides a conceptual understanding of the new RISC categories. The figure depicts the current safety-related versus nonsafety-related SSC categorization scheme with an overlay of the new risk-informed categorization. In the traditional deterministic approach, SSCs were generally categorized as either "safety-related" (as defined in § 50.2) or nonsafety-related. This division is shown by the vertical line in the figure. Risk insights, including consideration of severe accidents, can be used to identify SSCs as being either safety-significant or low safety-significant (shown by the horizontal line). Hence, the application of a risk-informed categorization results in SSCs being grouped into one of four categories as represented by the four boxes in Figure 1.

Box 1 of Figure 1 depicts safety-related SSCs that a risk-informed categorization process determines are significant contributors to plant safety. These SSCs are termed RISC-1 SSCs. RISC-2 SSCs are nonsafety-related, and the risk-informed categorization determines them to be significant contributors to plant safety. The third category are those SSCs that are safety-related SSCs and that a risk-informed categorization process determines are not significant contributors to plant safety. These SSCs are termed RISC-3 SSCs. Finally, there are SSCs that are nonsafety-related and that a risk-informed categorization process determines are not significant

contributors to plant safety. These SSCs are termed RISC-4 SSCs.

Section 50.69 would define the terminology "safety-significant function" as functions whose loss or degradation could have a significant adverse effect on defense-in-depth, safety margins or risk. This definition was chosen to be consistent with the concepts described in RG 1.174. The proposed rule would impose greater treatment requirements on SSCs that perform safety-significant functions (RISC-1 and RISC-2 SSCs) to ensure that defense-in-depth and safety margins are maintained. The proposed rule would also require that the change in risk associated with implementation of proposed § 50.69 be small.

III.2.0 Methodology for Categorization

The cornerstone of proposed § 50.69 is the establishment of a robust, risk-informed categorization process that provides high confidence that the safety significance of SSCs is correctly determined considering all relevant information. As such, all the categorization requirements incorporated into proposed § 50.69 are to achieve this objective. Essentially the process is structured to ensure that all relevant information pertaining to SSC safety significance is considered by a panel that has the expertise and capabilities for making a sound decision regarding the SSC's categorization, and that information is considered in a manner that ensures the Commission's criteria for risk-informed applications are satisfied (*i.e.*, that defense-in-depth is maintained, safety margins are maintained, any risk change is small, and a monitoring and performance assessment strategy is used). This process enables SSCs to be placed in the correct RISC category such that the appropriate treatment requirements will be applied commensurate with their safety significance. A safety-significant SSC is an SSC that performs a safety-significant function. The proposed rule would require that SSC safety significance be determined using quantitative information from an up-to-date PRA reasonably representing the current plant configuration, which as a minimum covers internal events at full power, and other available risk analyses and traditional engineering information to supplement the quantitative PRA results.