

are key functions in prevention and mitigation of severe accidents. Thus, RISC-1 SSCs are generally significant for a range of events and conditions and as the primary means of accident prevention and mitigation, the Commission wants to continue to achieve the high level of quality, reliability, preservation of margins, and assurance of performance of current regulatory requirements.

By contrast, RISC-2 SSCs are less important than RISC-1 SSCs because they do not play a role in prevention and mitigation of design basis events (*i.e.*, the SSCs that maintain integrity of fission product barriers, that provide or support the primary success paths for shutdown, or that prevent or mitigate accidents that could lead to potential offsite exposures). They are not part of the reactor protection system or engineered safety features that perform critical safety functions such as reactivity control, inventory control and heat removal. When viewed from a deterministic standpoint, RISC-2 SSC are not considered to rise to the level of a potential substantial safety hazard. From the risk-informed perspective, SSCs may end up classified as RISC-2 for a number of reasons. The classification might occur because they: (i) Contribute to plant risk by initiating transients that could lead to severe accidents (if multiple failures of other mitigating SSCs were to occur), or (ii) they can reduce risk by providing backup mitigation to RISC-1 SSCs in response to an event. The Commission recognizes that, on its face, noncompliance by or defects in RISC-2 SSCs, which could increase risk, such as by more frequent initiation of a transient, may appear to constitute a "substantial safety hazard." However, upon closer examination, the Commission believes otherwise. The risk significance of such "transient initiating" RISC-2 SSCs depends upon their frequency of initiation, with resultant consequences depending upon the failure of multiple other components of varying types in different systems. Further, their risk significance, as identified by the categorization process, is a result of the reliability (failure rates) currently being achieved for these SSC being treated as commercial-grade components, which includes the possibility of noncompliances and defects. Because requirements on RISC-2 SSCs are not being reduced, there is no reason to believe that their performance would degrade as a result of implementation of § 50.69. In fact, by better understanding of their safety significance, and through the added

requirements in this rule for RISC-2 SSCs for consistency between the categorization assumptions and how they are treated, performance should only be enhanced. As discussed in Sections III.3 and III.5 of this SOC, the Commission is proposing that additional regulatory controls be imposed on RISC-2 SSCs to prevent their performance from degrading. In addition, the Commission is proposing that licensees evaluate treatment being applied for consistency with key categorization assumptions, monitor the performance of these SSCs, take corrective actions, and report when a loss of a safety-significant function occurs. The requirements of the maintenance rule (§ 50.65 (a)(1) through (a)(3)) also continue to apply to these SSCs. Thus, there are requirements for corrective action by the licensee if noncompliances involving these SSCs are identified. The Commission concludes that these requirements are sufficient because no RISC-2 SSC is so significant as to necessitate immediate Commission (or licensee) action.

For RISC-2 SSCs that provide backup mitigation to RISC-1 SSCs, the Commission also finds it prudent and desirable from a risk-informed standpoint to provide an enhanced level of assurance that RISC-2 SSCs can perform their safety-significant functions, but the failure or malfunction of such RISC-2 SSCs also does not raise a concern about imminent safety hazards.

Moreover, over the last several years, the current fleet of power reactors have been subjected to a number of risk studies, including WASH-1400 (Reactor Safety Study), and other generic and plant-specific reviews. While some safety improvements have been identified as a result of these reviews, none has been of such significance as to require immediate action. This essentially means that no SSCs that would be categorized as RISC-2 SSC would rise to the level of significance that their failure or lack of functionality would constitute a substantial safety hazard requiring immediate regulatory action. For example, in the case of two key risk scenarios, Station Blackout and Anticipated Transient without Scram, the Commission imposed regulatory requirements to reduce risk from these events; however, the rules were promulgated as cost-beneficial safety improvements. The equipment used for station blackout or anticipated transients without scram would generally fall within the RISC-2 category. The Commission believes its conclusion about the relative significance of RISC-2 SSC is also

supported by plant-specific risk studies, such as the IPE and IPEEE¹, conducted to identify (and correct) any plant-specific vulnerabilities to severe accident risk. NRC's review of the responses to the licensee submittals has not identified any situations requiring immediate action for protection of public health and safety. In addition, as part of license renewal reviews, the NRC reviews severe accident mitigation alternatives, to identify and evaluate plant design changes with the potential for improving severe accident safety performance. In the license renewals completed to date, only a few candidate SAMAs were found to be cost-beneficial (and none were considered necessary to provide adequate protection of public health and safety).

In sum, the Commission believes that in light of risk assessments and actions that have already been implemented, there would be no SSCs categorized under 50.69 as RISC-2 whose failure would represent a significant and substantial safety concern such that immediate notification and action is required. Accordingly, the results of these risk assessments provide additional confidence to the Commission that Part 21 requirements need not be imposed on RISC-2 SSCs.

The Commission believes that the multiple simultaneous failures of either RISC-2 or RISC-3 components, in the same or in different systems, is not a concern such that Part 21 reporting is necessary. Even for components of the same type, it is not likely that the installed components are identical in terms of their specific characteristics or operating and maintenance history such that a defect would lead to simultaneous failure of multiple components at the same time. For both RISC categories, there are requirements to collect data about performance of the SSCs, to review the data to determine if adverse performance is occurring and to take

¹ In Generic letter 88-20, dated November 23, 1988, licensees were requested to perform individual plant examinations to identify plant-specific vulnerabilities to severe accidents that might exist in their facilities and report the results to the Commission. As part of their review and report, licensees were asked to determine any cost-beneficial improvements to reduce risk. In supplement 4 to the generic letter dated June 28, 1991, this request was extended to include external events (earthquakes, fires, floods). The NRC staff reviewed the plant-specific responses and prepared a staff evaluation report on each submittal. Further, the set of results were presented in NUREG-1560, IPE Program: Perspectives on Reactor Safety and Plant Performance. A similar report on IPEEE results was issued as NUREG-1742. In addition, as discussed in SECY-00-0062, the staff has conducted IPE follow-up activities with owners groups and licensees to confirm that identified improvements have been implemented and if any other actions were warranted.