Systems within Scope

The systems within the scope of the rule are limited to systems required perform a safety function assumed in the plant's accident analysis to perform one of the four functions (A) through (D) specified in the rule. It is not determined by the phrases "safety related," "important to safety," or "ESF

Basis

The current reporting requirements were based on the guidance of RG 1.16, Reporting of Operating Information – Appendix A Technical Specifications. In the last version, Revision 4, Section 2.a the reporting requirement was presented in part as the following:

> (5) Failure or malfunction of one or more components which prevents or could prevent, by itself, the fulfillment of the functional requirements of system(s) **used to cope with accidents analyzed in the SAR**. The following are examples:

Generic Letter No. 83-43, Reporting Requirements of 10 CFR Part 50, Sections 50.72 and 50.73, and Standard Technical Specifications, directed the removal of the Technical Specification reporting requirements based on the RG at the individual facilities due to the issuance of the new 10CFR 50.72 and 73 reporting requirements. This Generic Letter also provided the associated Statements of Consideration to the industry for the new reporting requirements to add in the industries' understanding of the requirements. For the purpose of this discussion the requirements in 50.72 and 50.73 in the original version and the current version are essentially the same.

> 50.73(a)(2)(v) Any event or condition that could have **prevented the fulfillment of the safety function of structures or systems** that are needed to:
>
> > (A) Shut down the reactor and maintain it in a safe shutdown condition;
> > (B) Remove residual heat;
> > (C) Control the release of radioactive material; or
> > (D) Mitigate the consequences of an accident."
>
> > 50.73(a)(2)(vi) Events covered in paragraph (a)(2)(v) of this section may include one or more procedural errors, equipment failures, and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, individual component failures need not be reported pursuant to paragraph (a)(2)(v) of this section if redundant equipment in the same system was operable and available to perform the **required safety function**.

As discussed previously, Generic Letter No. 83-43 provided the associated Statements of Consideration to the industry for the new reporting requirements to add in the industries' understanding of the requirements. These Statements of Consideration provide insights into the meaning of the words used in the regulation. As shown below the reporting requirement is focused on the ability of the system to perform a safety function.

48FR33854 and 48FR33858

…

The intent of this paragraph is to capture those events where there would have been a failure of a safety system to properly complete a safety function, regardless of when the failures were discovered or whether the system was needed at the time.

…

This paragraph is also based on the assumption that safety-related systems and structures are intended to mitigate the consequences of an accident.

…

Interaction between systems particularly a safety system and a nonsafety system, is also included in this criterion. For example, the Commission is increasingly concerned about the effect of a loss or degradation of what had been assumed to be non-essential inputs to safety systems. Therefore, this paragraph also includes those cases where a service (e.g., heating, ventilation, and cooling) or input (e.g., compressed air) which is necessary for reliable or long-term operation of a safety system is lost or degraded. **Such loss or degradation is reportable if the proper fulfillment of the safety function is not cannot be assured. Failures that affect inputs or services to systems that have no safety function need not be reported.**

48FR33850

The applicability of this paragraph includes those safety systems designed to mitigate the consequences of an accident (e.g., containment isolation, emergency filtration). Hence, minor operational events involving a specific component such as valve packing leaks, which could be considered a lack of control of radioactive material, should not be reported under this paragraph. System leaks or other similar events may, however, be reportable under other paragraphs.

…

This paragraph is also based on the assumption that safety-related systems and structures are intended to mitigate the consequences of an accident. While 50.73[a)(Z)(iv) of this final rule applies to actual actuations of an ESF, 50.73(a)(Z)(v) of this final rule covers an event or condition where redundant structures, components, or trains of a safety system could have failed to perform their intended function because of one or more personnel errors, including procedure violations; equipment failures: or design, analysis, fabrication, construction, or procedural deficiencies. The event must be reported regardless of the situation or condition that caused the structure or systems to be unavailable, and regardless of whether or not an alternate safety system could have been used to perform the safety function (High Pressure Core Cooling failed, but feed-and-bleed or Low Pressure Core Cooling were available to provide the safety function of core cooling).

…

Interaction between systems particularly a safety system and a nonsafety system, is also included in this criterion. For example, the Commission is increasingly concerned about the effect of a loss or degradation of what had been assumed to be non-essential inputs

to safety systems. Therefore, this paragraph also includes those cases where a service (e.g., heating, ventilation, and cooling) or input (e.g., compressed air) which is necessary for reliable or long-term operation of a safety system is lost or degraded. **Such loss or degradation is reportable if the proper fulfillment of the safety function is not cannot be assured. Failures that affect inputs or services to systems that have no safety function need not be reported.**

This discussion of a safety function was discussed to a limited extent in NUREG 1022 Revision 2

An LER is required for an event or condition that could have prevented the fulfillment of the **safety function** of structures and systems defined in the rules.

…

The term "safety function" refers to any of the four functions (A through D) listed in these reporting criteria that are required during any plant mode or accident situation as described or relied on in the plant safety analysis report or required by the regulations.

…

The following types of events or conditions generally are not reportable under these criteria:

- **failures that affect inputs or services to systems that have no safety function (unless it could have prevented the performance of a safety function of an adjacent or interfacing system)**
- **a failure of a system used only to warn the operator where no credit is taken for it in any safety analysis and it does not directly control any of the safety functions in the criteria**
- a single stuck control rod that alone would not have prevented the fulfillment of a reactor shutdown
- unrelated component failures in several different safety systems

The applicability of these criteria includes those safety systems designed to mitigate the consequences of an accident (e.g., containment isolation, emergency filtration). Hence, minor operational events involving a specific component such as valve packing leaks, which could be considered a lack of control of radioactive material, should not be reported under this paragraph these criteria.

The question concerning the applicability of this reporting requirement to systems which are designed to fulfill one of the functions A through D of the rule but are not required by the accident analysis to performed of one the functions was addressed in NRC memorandum from Suzanne C. Black to Geoffrey E. Grant titled "Task Interface Agreement (TIA) 99-030 From Region III Regarding the Reportability Of Reactor Core Isolation Cooling (RCIC) System

Failures" dated March 15, 2001 (Accession No. ML010740339) and subsequently summarized in RIS 2001-14 Position on Reportability Requirements for Reactor Core Isolation Cooling System Failure.

TIA 99-030, Task Interface Agreement (TIA) 99-30 from Region III Regarding the Reportability of Reactor Core Isolation Cooling (RCIC) System Failures (TAC NO. MA7367), March 15, 2001

> The central question is whether RCIC system failures are reportable (1) by virtue of the inclusion of RCIC in a plant's technical specifications, or (2) because RCIC performs a safety related accident mitigation function that may or may not be stated in the accident analysis of the Updated Final Safety Analysis Report (UFSAR).
> …
> As indicated, the rules directly define the structures and systems for which reporting is required, without reference to labels such as "engineered safety feature [ESF]," "safety related," or "important to safety." That is, a system's failure or inoperability is reportable if the system is needed to: shut down the reactor and maintain it in a safe shutdown condition; remove residual heat; control the release of radioactive material; or mitigate the consequences of an accident. **It is clear that the RCIC system can perform some of these safety functions. The question is whether or not it is needed to perform any of them.**
> …
>
> **Alternatively, however, one can consider that the term "needed" means only those systems for which the UFSAR explicitly claims credit to remove residual heat. An interpretation along these lines has been used by many BWR licensees since the rules were issued in 1983. This was the intent of the guidance and the NRC staff has accepted this approach for many years.**
>
> …
> In view of the NRC's historical practice in implementing 10 CFR 50.72 and 10 CFR 50.73, we have reconsidered the position, and now conclude that **reporting of RCIC system failures is required by the relevant regulations for only those plants where the UFSAR explicitly claims credit for RCIC to remove residual heat.** By its nature, this interpretation rules out the implication that RCIC system failures are reportable simply by virtue of the inclusion of the RCIC system in a plant's technical specifications.
> …
> **In the answer to the question about RCIC, the previous guidance in NUREG-1022, Revision 1, used the phrase "remove residual heat." This could be taken broadly since residual heat removal is what the RCIC system does. In Revision 2, we changed the phrase to read "mitigate a rod ejection accident." Our intent was to make the statement clearer and more specific, since we believe that rod ejection is the only UFSAR accident analysis where licensees have taken credit for RCIC.**
>
> …
> **In the future, the Region should consider a licensee's reporting practice adequate if it meets that portion of the modified (i.e., current) guidance which indicates that RCIC failure is reportable if the plant's safety analysis considered RCIC as a system needed to mitigate a rod ejection accident.**

It is clear from the historical record that the intent of these reporting requirements is to report failures in the ability to perform a safety function assumed in the plant's accident analysis to perform one of the four functions (A) through (D) specified in the rule. The intent of the requirements is not to report the failures of systems which although designed to perform one of the functions are not required by the plant's accident analysis to perform one on the functions.