

Meaning of the term “operable” in 10CFR50.72(b)(3)(v)/(vi) and 10CFR50.73(a)(2)(v)/(vi)

Position

The term “operable” is used in 10CFR50.72(b)(3)(v)/(vi) and 10CFR50.73(a)(2)(v)/(vi). This term does not invoke the Technical Specification (TS) application of the term “OPERABLE” with all of its attendant requirements but refers to the ability to fulfill the applicable safety functions as assumed in the plant’s accident analysis.

10 CFR 50 Part 72 and 73 Sections

§ 50.72(b)(3)(v) / (vi)

"Any event or condition that at the time of discovery 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.

Events covered in paragraph (b)(3)(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 (b)(3)(v) of this section if redundant equipment in the same system was **operable** and available to perform the required safety function."

§ 50.73(a)(2)(v) / (vi)

"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.

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."

Basis

As discussed below, 10 CFR 50 Parts 72 and 73, the Statements of Considerations (SOC), and NUREG 1022 Revision 2 support the position that the term “operable” as used in these reporting requirements is not the TS application of “OPERABLE”. The documents support that the use of the term is intended to refer to the ability to fulfill the applicable safety functions as assumed in the plant’s accident analysis. This was specifically addressed in the SOC 65FR63769.

“A new paragraph, section 50.72(b)(3)(vi) is added to clarify section 50.72. The new paragraph explicitly states that telephone reporting is not required under

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section 50.72(b)(2)(v) for single failures if redundant equipment in the same system was operable and available to perform the required safety function. **That is, although one train of a system may be incapable of performing its safety function, reporting is not required under this criterion if that system is still capable of performing the safety function.** This is the same principle that was and continues to be stated explicitly in section 50.73(a)(2)(vi) with regard to written LERs.”

This discussion and other of statements provided below do not support direct application of the applicable system being TS “OPERABLE” or “INOPERABLE” to determine reporting under this requirement. Application of the TS operability to this reporting requirement would result in the reporting of conditions where a system is still capable of fulfilling the safety function, which is in direct conflict with the stated purpose of the reporting requirement and the language of the rule(s). This conflict is due to the TS requirements for a system to be considered “OPERABLE” exceeding those necessary for the system to be capable of performing the safety function in certain conditions.

Review of the record makes it clear that reporting under these criteria is not required under this criterion if that system is still capable of fulfilling the safety function.

Excerpts from Applicable Documents

50.72(b)(3)(v), 50.72(b)(3)(vi), 50.73(a)(2)(v), 50.73(a)(2)(vi)

[Note: These sections require the reporting of could have prevented the fulfillment of the safety function and not the “INOPERABILITY” of the equipment as defined in the TS.]

§ 50.73(a)(2)(v)

“Any event or condition that **could have prevented the fulfillment of the safety...**”

§ 50.72(b)(3)(v)

“Any event or condition that at the time of discovery **could have prevented the fulfillment of the safety function...**”

NUREG 1022 Revision 2, Section 3.2.7

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 level of judgment for reporting an event or condition under this criterion is a **reasonable expectation of preventing fulfillment of a safety function.**

The intent of these criteria is to capture those events where there would have been a failure of a safety system to properly complete a safety function, regardless of whether there was an actual demand. For example, if the high pressure safety injection system (both trains) failed, the event would be reportable even if there was no demand for the system's safety function.

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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 ...** [Note: These two examples reflect items that would not be considered reportable, although these examples may be part of the TS definition of operability by way of inclusion of the items in the TS requirements for a system.]

Examples

...

(9) Contaminated Hydraulic Fluid Degrades MSIV Operation

...

Comments: The event is reportable under 50.73(a)(2)(v) because the condition **could have prevented fulfillment of a safety function**. The event is not reportable under 50.72(b)(3)(v) because, at the time of discovery, the plant was shutdown and the MSIV's were not required to be operable...

RIS 2001-14 Position on Reportability Requirements for Reactor Core Isolation Cooling System Failure July 19, 2001

In 10 CFR Part 50, paragraphs 50.72(b)(3)(v)(1) and 50.73(a)(2)(v), require reports for any event or condition that could have **prevented the fulfillment of the safety function** of structures or systems that are 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...

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).

The 1983 Statements of Considerations (SOCs) for 10 CFR 50.72 and 10 CFR 50.73 state the following:

It should be noted that there are a limited number of single-train systems that perform safety functions (e.g., the High Pressure Coolant Injection System [HPCI] in BWRs [boiling-water reactors]). For such systems, loss of the single train would prevent the fulfillment of the safety function of that system and, therefore, must be reported even though the plant Technical Specifications may allow such a condition to exist for a specified limited length of time...

48FR33850 (similar to other applicable SOC's)

In the Federal Register notice that accompanied the proposed rule, the Commission stated that licensee's engineering judgment may be used to decide if an event is

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reportable. Several commenters expressed the belief that some wording should be added to the rule to reflect that the NRC will also use judgment in enforcement of this regulation where the licensee is requested to use engineering judgment. The Commission believes that the LER rule adequately discusses the need for and application of the concept of "engineering judgment." The concept itself includes the recognition of the existence of a reasonable range of interpretation regarding this rule, and consequently the Commission recognizes and hereby acknowledges the need for flexibility in enforcement actions associated with this rule. The Commission believes that this concept is sufficiently clear and that additional explicit guidance is not necessary."

...

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)(2)(iv) of this final rule applies to actual actuations of an ESF, 50.73(a)(2)(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.

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 **e** 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 cannot be assured. Failures that affect inputs or services to systems that have no safety function need not be reported.**

65FR63769

Train inoperable longer than allowed. If a design or analysis defect or deviation (or any other event or condition) is significant enough that, as a result, one train of a multiple train system controlled by the plant's TS is not capable of **performing its specified safety functions** for a period of time longer than allowed by the TS, the condition is reportable under section 50.73(a)(2)(i)(B) [i.e., an operation or condition prohibited by TS]. For example, if it is found that an exciter panel for one EDG lacks appropriate seismic restraints because of a design, analysis, or construction inadequacy and, as a result, **there is reasonable doubt about the EDG's ability to perform its specified safety functions** during and after a Safe Shutdown Earthquake (SSE), the event would be reportable. Or, for example, if it is found that a loss of offsite power could cause a loss of instrument air and, as a result, there is reasonable doubt about the ability of one train of the auxiliary feedwater system to perform its specified safety functions for certain postulated steam line breaks, the event would be reportable.

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