

NRC UPDATE

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Virtual JUTG Procurement Forum



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Topics

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- Vendor Inspection Findings
- 10 CFR 50.69 Discussion
Topic

NRC Vendor Inspection Findings



Vendor Inspection Findings

- Significant Findings
 - ▣ Design Control
 - ▣ Control of Special Processes



Design Control



Rosemount Nuclear Instruments, January 27, 2020

Criterion III, “Design Control,” of Appendix B

- Inspection conducted in December 2019 to verify QA activities associated with the design, engineering, manufacturing, and supply of pressure transmitters, differential pressure transmitters, trip/calibration systems, signal conditioners, spare and replacement parts, and repair services.
- Inspection Results
 - test samples received significantly less radiation dose than what was called per the test plan. Portions of the test sample were shielded in the radiation chamber and the thermoluminescent

Control of Special Processes

Fisher Controls issued February 26, 2020

Criterion IX “Control of Special Processes,” of Appendix B,

Inspection conducted in January 16, 2020 to verify QA activities associated with the manufacturing of nuclear fuel assemblies and nuclear fuel assembly components for pressurized water reactors for U.S. nuclear power plants.

- Inspection Results

- The NRC inspection team observed weld filler material in two work stations with either no markings or illegible labels. On both work stations, the weld filler material was on a workshop table exposed to the environment. The NRC inspection team also noted that the weld filler material in the work stations was not

10 CFR 50.69 Discussion

Applying Appendix B & Part 21 - Augmented
Quality, Along with Risk and Procurement
Requirements



Definitions & Terms in 10 CFR 50.69

RISC-1: Safety-Related SSCs that perform safety significant functions.

RISC-2: Nonsafety-related SSCs that perform safety significant functions.

RISC-3: Safety-related SSCs that perform low safety significant functions.

RISC-4: Nonsafety-related SSCs that perform low safety significant functions.

□ Alternative Treatment Requirements:

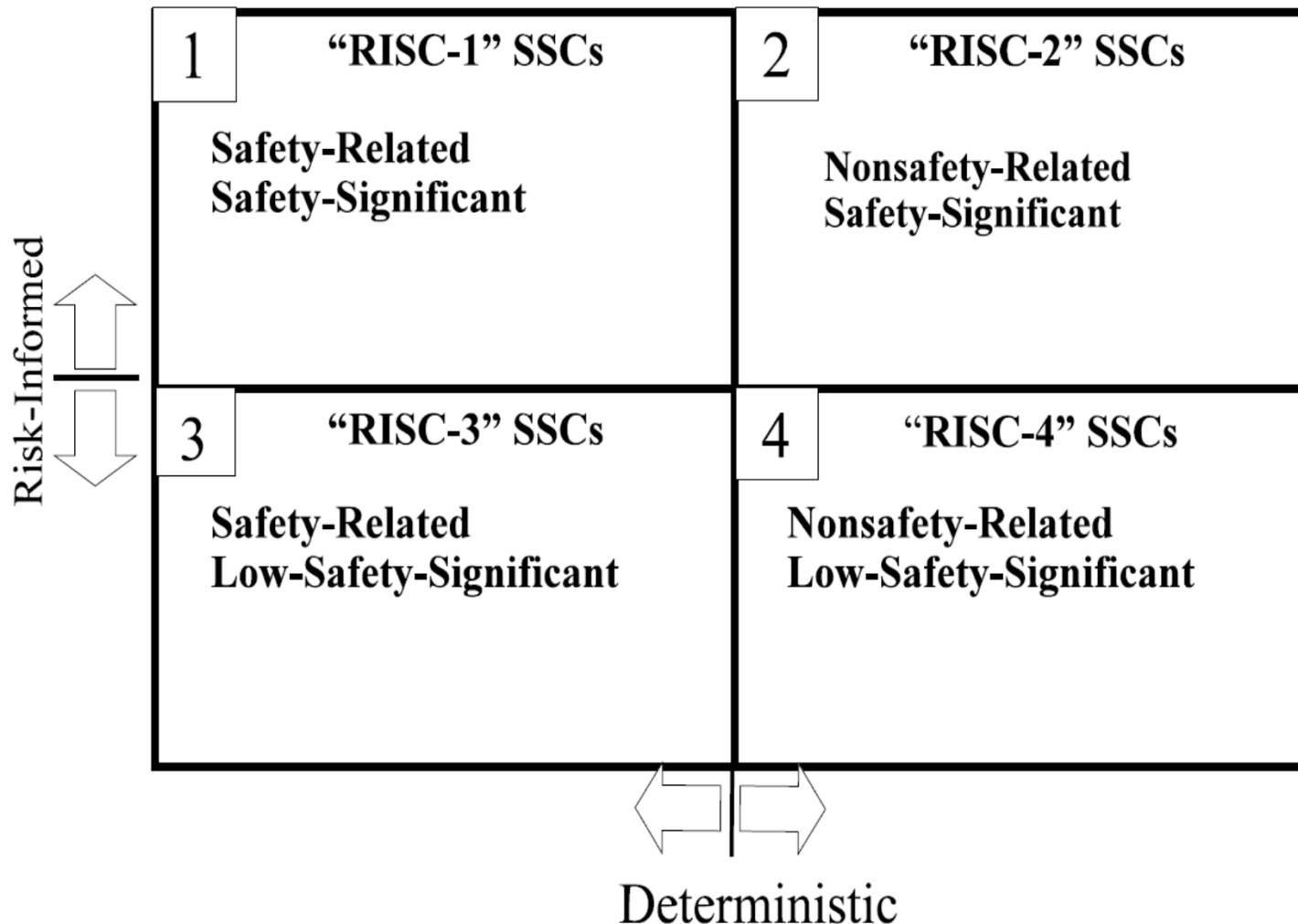
RISC 1&2: treatment being applied to these SSCs to ensure that it supports the key assumptions in the categorization process that relate to their assumed performance.

RISC 3&4: treatment of RISC-3 SSCs must be consistent with the categorization process. Inspection and testing, and corrective action shall be provided for RISC-3 SSCs (Reasonable confidence, that RISC-3 SSCs remain capable of performing their safety-related functions under design basis conditions, including seismic conditions and environmental conditions and effects

Definitions & Terms in the Federal Register (FR)

- Treatment: As a general term refers to activities, processes, and/or controls that are performed or used in the design, installation, maintenance, and operation of SSCs as a means of:
 - Specifying and procuring SSCs that satisfy performance requirements;
 - Verifying over time that performance is maintained;
 - Controlling activities that could impact performance; and
 - Providing assessment and feedback of results to adjust activities as needed to meet desired outcomes.
- Treatment includes, but is not limited to, quality assurance, testing, inspection, condition monitoring, assessment, evaluation, and resolution of deviations.
- The distinction between “treatment” and “special treatment” is the degree of NRC specification as to what must be implemented for particular SSCs or for particular conditions.
- Reasonable Confidence: A somewhat reduced level of confidence as compared with the relatively high level of confidence provided by the current special treatment requirements.

Four Risk-Informed Safety Class (RISC) Categories



RISC-1

1

“RISC-1” SSCs

**Safety-Related
Safety-Significant**

FR Discussion on RISC-1:

§50.69(d)(1) does not require licensees or applicants to evaluate the application of special treatment requirements to RISC-1 SSCs. The special treatment requirements remain intact and unchanged...

- Reg Guide 1.201
 - ▣ RISC-1 SSCs are safety-related SSCs that the risk-informed categorization process determines to be significant contributors to plant safety.
 - ▣ Licensees must continue to ensure that RISC-1 SSCs perform their safety-significant functions consistent with the categorization process, including those safety-significant functions that go beyond the functions defined as safety-related for which credit is taken in the categorization process.

RISC-2

2

“RISC-2” SSCs

Nonsafety-Related Safety-Significant

FR Discussion on RISC-2:

It is not the intent of §50.69(d)(1) to simply extend special treatment Requirements such as Appendix B to RISC-1 and RISC-2 beyond design basis functions.

- RISC-2 SSCs are those that are defined as nonsafety-related, although the risk-informed categorization process determines that they are significant contributors to plant safety on an individual basis.
- The NRC staff recognizes that some RISC-2 SSCs **may not have existing special treatment requirements.**
- As a result, **the focus for RISC-2 SSCs is on the safety-significant functions for which credit is taken in the categorization process.**

RISC-3

3

“RISC-3” SSCs

Safety-Related Low-Safety-Significant

FR Discussion on RISC-3: Fracture Toughness, Voluntary Consensus Standards, §50.59 Applicability, Exemption from special treatment for qualification methods for environmental conditions and effects and seismic conditions, Corrective Actions.

- RISC-3 SSCs are those that are defined as safety-related, although the risk-informed categorization process determines that they are not significant contributors to plant safety.
- **Special treatment** requirements are **removed** for RISC-3 SSCs and **replaced** with **high-level requirements**.
- These **high-level requirements** are intended to provide sufficient regulatory treatment, such that these SSCs are still expected to perform their safety-related functions under design-basis conditions, albeit at a reduced level of assurance compared to the current special treatment requirements.
- §50.69 does not allow these RISC-3SSCs to lose their functional capability or be removed from the facility.

RISC-4

4

“RISC-4” SSCs

Nonsafety-Related Low-Safety-Significant

- RISC-4 SSCs are those that are defined as nonsafety-related, and that the risk-informed categorization process determines are not significant contributors to plant safety.
- Section 50.69 does not impose alternative treatment requirements for these RISC-4 SSCs.

As with the RISC-3 SSCs, changes to the design bases of RISC-4 SSCs must be made in accordance with current applicable design change control requirements (if any), such as those set forth in 10 CFR 50.59

Treatment Requirements

The final rule applies treatment requirements to SSCs commensurate with their safety significance.

□ **RISC-1 and RISC-2**

- For SSCs determined by the IDP to be safety significant (*i.e.*, RISC-1 and RISC-2 SSCs), § 50.69 maintains the current regulatory requirements (*i.e.*, it does not remove any requirements from these SSCs) for special treatment. These current requirements are adequate for addressing design basis performance of these SSCs. Additionally, § 50.69(d)(1) requires that sufficient treatment be applied to support the credit taken for these SSCs for beyond design basis events.
- In some cases, licensees might need to enhance the treatment applied to RISC-1 or RISC-2 SSCs to support the credit taken in the categorization process, or conversely adjust the credit for performance of the SSC in the categorization process to reflect actual treatment practices and/or documented performance capability. In addition, § 50.69(e) requires monitoring and adjustment of treatment processes or categorization decisions as needed based upon operational experience.

Treatment Requirements

□ RISC-3

- Section 50.69(d)(2) imposes requirements that are intended to maintain RISC-3 SSC design basis capability.
- § 50.69(d)(2) requires that licensees or applicants ensure with reasonable confidence that RISC-3 SSCs remain capable of performing their safety-related functions under design basis conditions, including seismic conditions and environmental conditions and effects throughout their service life.
- § 50.69(d)(2) contains **inspection, testing**, and **corrective action** requirements, and in addition requires that the treatment of RISC-3 SSCs be consistent with the categorization process. The requirements are performance-based and give licensees the flexibility to implement treatment that they have determined is needed, commensurate with the low safety significance of the SSCs in order to provide reasonable confidence that their safety-related functional capability is maintained.

Treatment Requirements



□ RISC-4

- Section § 50.69 does not impose any new treatment requirements on RISC-4 SSCs. Instead, RISC-4 SSCs are simply removed from the scope of any applicable special treatment requirements identified in § 50.69(b)(1).
- Requirements applicable to RISC-4 SSCs not removed by § 50.69(b)(1) continue to apply.
- Through the application of § 50.69, RISC-3 and RISC-4 SSCs are removed from the scope of the specific special treatment requirements listed in § 50.69(b)(1).

Reporting Requirements under Part 21 and §50.55(e)

- RISC-1 SSCs **ARE** subject to the reporting requirements in Part 21 and §50.55(e) because of their high safety significance.
- RISC-2 SSCs are **NOT** subject to the reporting requirements in Part 21 and §50.55(e) because they are **NOT** safety related.
- RISC-3 are **NOT** subject to the reporting requirements in Part 21 and §50.55(e) because of their low safety significance.
- RISC-4 SSCs continue to be beyond the scope of, and **NOT** subject to, Part 21 and 50.55(e).
- ** Thus, a vendor who supplied a safety-related component to a licensee that was subsequently classified by the licensee as RISC-3 would no longer be legally obligated to comply with Part 21 or § 50.55(e) reporting requirements.



References

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- ▣ Rosemount Nuclear Instruments (IR): Agencywide Documents Management System (ADAMS) Accession No. ML20024G416
- ▣ Westinghouse IR: ADAMS Accession No. ML20035E477