UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
OFFICE OF NEW REACTORS
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
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NRC REGULATORY ISSUE SUMMARY 2017-####
DISPOSITION OF INFORMATION RELATED TO THE TIME PERIOD THAT SAFETY-RELATED STRUCTURES, SYSTEMS, OR COMPONENTS ARE INSTALLED

ADDRESSEES

All holders of and applicants for an operating license or construction permit for a nuclear power reactor under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities."

All holders of and applicants for a power reactor early site permit, combined license, standard design approval, or manufacturing license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." All applicants for a standard design certification, including such applicants after initial issuance of a design certification rule.

All holders of and applicants for an independent spent fuel storage installation license under 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste."

All permanently shut down power reactors with spent fuel in spent fuel pools.

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to reiterate existing requirements related to dispositioning information pertaining to the capability of safety-related structures, systems, and components (SSCs) to perform their safety functions in nuclear power plants. This RIS reinforces the obligations of nuclear power plant licensees to maintain safety-related SSCs in accordance with 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," the licensee's NRC-approved quality assurance (QA) program, and the licensee's operability/functionality determination process.

This RIS also addresses instances where a licensee becomes aware of information[1] pertaining to the time period that a safety-related SSC is installed that may impact its ability to perform its

[1] Examples of "information" include but are not limited to vendor service advisories, NRC generic communications, and operating experience. The various sources of information should be treated with equal importance until the screening process has been completed.

safety function(s). Licensees should determine if the information is applicable[2] to the facility. Information that licensees have determined applicable to the facility should be dispositioned in accordance with their NRC-approved QA program, corrective action program, and operability/functionality determination process, as appropriate, and in accordance with their procedures.

This RIS requires no specific action or written response on the part of an addressee.

BACKGROUND INFORMATION

In NUREG-0737, "Clarification of TMI [Three Mile Island] Action Plan Requirements,"[3] the NRC staff states that TMI Task Action Plan Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff" (NUREG-0660), requires "all involved in the assessment of operating experience to review information from a variety of sources." Licensees should also prioritize such information based on its safety significance. Further, as a result of NRC Generic Letter (GL) 83-28, Supplement 1, "Required Actions Based on Generic Implications of Salem ATWS Events,"[4] and GL 90-03, "Relaxation of Staff Position in Generic Letter 83-28, Item 2.2, Part 2, 'Vendor Interface of Safety-Related Components,'"[5] licensees established programs to ensure that vendor information for safety-related SSCs is complete. These programs were established, in part, to ensure that vendor information is properly evaluated for its effect on safety-related equipment.

Safety-related SSCs installed in a commercial nuclear power plant must conform to the requirements of the licensee's NRC-approved QA program and other NRC requirements. Appendix B to 10 CFR Part 50 establishes QA requirements for the design, manufacture, construction, and operation of safety-related SSCs. Part 50, Appendix B, Criterion XVI, "Corrective Action," states that "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected." When a licensee becomes aware of information that indicates a condition adverse to quality may exist, they must follow their programs and procedures if any apply. These include but are not limited to the licensee's corrective action program and NRC-approved QA program.

In addition to the NRC-approved QA program, licensees have corrective action programs and processes to make operability/functionality determinations on SSCs. Each licensee's NRC-approved QA program, corrective action program, and operability/functionality determination process encompass the treatment of safety-related SSCs, 10 CFR 50.2 design bases information, and substantial supporting design bases information.

As described in Appendix B to NEI 97-04, "Design Bases Program Guidelines," which was endorsed by Regulatory Guide 1.186, "Guidance and Examples for Identifying 10 CFR 50.2 Design Bases," dated December 2000, 10 CFR 50.2 design bases information includes the bounding conditions under which structures, systems, and components must perform their

[2] Although it is not a regulatory requirement, some licensees have established an information screening process to determine applicability. Licensees that do not have an established screening process would use the thresholds of their NRC-approved QA program, corrective action program, and operability/functionality process to determine if the information should be dispositioned by these programs or processes.
[3] Agencywide Documents Access and Management System (ADAMS) Accession No. ML051400209
[4] ADAMS Accession No. ML031210064
[5] ADAMS Accession No. ML031140578

design functions. Appendix B to NEI 97-04 further states, in part, that "Underlying 10 CFR 50.2 design bases is substantial supporting design information. Supporting design information includes other design inputs, design analyses, and design output documents." This information includes both NRC-docketed information and information retained by the licensee.

SELECTED REGULATIONS

Several requirements ensure that safety-related SSCs will perform their safety functions, including, but not limited to:

- 10 CFR 50.34, "Contents of applications; technical information," 10 CFR 52.79, "Contents of applications; technical information in final safety analysis report," and 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."

- 10 CFR 50.36, "Technical specifications."

- 10 CFR 50.65; "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." An acceptable approach for complying with the maintenance rule is described in NUMARC 93-01, Revision 4A, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,"[6] which was endorsed through NRC Regulatory Guide (RG) 1.160, Revision 3, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."[7]

- Updated final safety analysis report discussions of conformance with 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," specifically General Design Criterion (GDC) 1, "Quality Standards and Records," and GDC 4, "Environmental and Dynamic Effects Design Bases."

- 10 CFR 50.49, "Environmental qualification of electric equipment important to safety for nuclear power."

- 10 CFR 50.54, "Conditions of licenses."

- Applicable Codes and Standards approved for incorporation by reference in 10 CFR 50.55a, "Codes and standards."

- 10 CFR 54.37, "Additional Records and Recordkeeping Requirements," paragraph (b)[8], for those plants that have entered the period of extended operation. Licensees are responsible for performing scheduled component replacements as part of their aging management program as a result of license renewal.

[6] ADAMS Accession No. ML11116A198
[7] ADAMS Accession No. ML113610098
[8] RIS 2007-16, Revision 1, "Implementation of the Requirements of 10 CFR 54.37(b) for Holders of Renewed Licenses," (ADAMS Accession No. ML100250279), clarifies guidance for holders of renewed licenses on implementing the requirements of 10 CFR 54.37(b)

DISCUSSION

When a licensee becomes aware of information that could affect the ability of a safety-related SSC to continue to perform its safety function(s)[9], they should determine if the information is applicable[10] to the facility. Information that licensees have determined applicable to the facility should be dispositioned in accordance with their NRC-approved QA program, corrective action program, and operability/functionality determination process, as appropriate, and in accordance with their procedures. These programs are collectively established to ensure that: (1) a technically defensible determination is made regarding the continued ability of the SSC to perform its safety function(s) (i.e., operability/functionality); (2) corrective actions, if required, are established; and (3) any corrective actions are completed in a timeframe commensurate with their safety significance.

In the specific case where a licensee becomes aware that a safety-related SSC has been installed longer than the time period specified in the plant's licensing basis documentation, the licensee must assess, in accordance with their procedures, whether the SSC can continue to be relied on to perform its intended safety function(s) consistent with its licensing basis and applicable NRC requirements. Making this determination prior to exceeding the time period documented in the licensing bases avoids the potential need to disposition a nonconforming condition.

NRC Inspection Manual Chapter (IMC) 0326, "Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety,"[11] defines a nonconforming condition as "a condition of an SSC that involves a failure to meet the CLB [current licensing basis] or a situation in which quality has been reduced because of factors such as improper design, testing, construction, or modification." IMC 0326 also provides guidance for NRC staff to review operability/functionality determinations once a degraded or nonconforming condition has been identified. For SSCs that are controlled by the plant's technical specifications, licensees must consider operability as required by their technical specifications.

Section 50.65 of 10 CFR (i.e., "the maintenance rule") is performance-based and, as a result, does not require corrective action until the performance or condition of an SSC fails to meet licensee-established goals or criteria. While compliance with the provisions of the maintenance rule is required, this does not relieve licensees of the need to comply with other applicable regulations, NRC-approved program requirements, and regulatory commitments.

Through ongoing inspection and operating experience reviews, NRC staff has identified instances in which licensees did not appropriately disposition relevant information. The NRC issued Information Notice 2012-06, "Ineffective Use of Vendor Technical Recommendations,"[12] to inform addressees of operating experience regarding ineffective use of vendor recommendations at U.S. nuclear power plants. One of the events discussed in the IN was

[9] The safety function(s) of safety-related SSCs are described in the plant's licensing basis

[10] Although it is not a regulatory requirement, some licensees have established an information screening process to determine applicability. Licensees that do not have an established screening process would use the thresholds of their NRC-approved QA program, corrective action program, and operability/functionality process to determine if the information should be dispositioned by these programs or processes.

[11] ADAMS Accession No. ML13274A578

[12] ADAMS Accession No. ML112300706

determined to be risk significant, resulting in a white inspection finding. This event involved a dual-unit trip and a subsequent emergency diesel generator (EDG) failure. The licensee attributed the EDG failure, in part, to a time delay relay that had been in service longer than the vendor documentation recommended.

In that case, the licensee removed the requirement for periodic replacement of the time delay relay, but failed to implement the preventative maintenance monitoring that was intended to replace the required periodic replacement of the relay. The NRC concluded that the licensee was in violation of Technical Specification 5.4.1, "Administrative Controls," which requires that written procedures shall be established, implemented, and maintained.

NRC staff reviewed five years of operating experience (2007–2011) related to the performance of SSCs at nuclear power plants. In its review and analyses, NRC staff identified failures of safety-related components that had been installed in the plant for extended periods of time. In one case, the staff noted that the licensee had extended an SSC's installed time period without technical justification. These and other observations are documented in "IOEB [NRC's Operating Experience Branch] Analysis Team Study on Component Aging—Insights from Inspection Findings and Reportable Events."[13]

SUMMARY OF ISSUE

In summary, this RIS reiterates the obligations of nuclear power plant licensees to maintain safety-related SSCs in accordance with 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," the licensee's NRC-approved QA program, and the licensee's site-specific operability/functionality determination process.

When a licensee becomes aware of information that could affect the ability of a safety-related SSC to continue to perform its safety function(s), they should determine if the information is applicable[14] to the facility. Information that licensees have determined applicable to the facility should be dispositioned in accordance with their NRC-approved QA program, corrective action program, and operability/functionality determination process, as appropriate, and in accordance with their procedures. These programs are collectively established to ensure that: (1) a technically defensible determination is made regarding the continued ability of the SSC to perform its safety function(s) (i.e., operability/functionality); (2) corrective actions, if required, are established; and (3) any corrective actions are completed in a timeframe commensurate with their safety significance.

In the specific case where a licensee becomes aware that a safety-related SSC has been installed longer than the time period specified in the plant's licensing basis documentation, the licensee must assess, in accordance with their procedures, whether the SSC can continue to be relied on to perform its intended safety function(s) consistent with its licensing basis and applicable NRC requirements. Making this determination prior to exceeding the time period documented in the licensing bases avoids the potential need to disposition a nonconforming condition.

[13] ADAMS Accession No. ML13044A469

[14] Although it is not a regulatory requirement, some licensees have established an information screening process to determine applicability. Licensees that do not have an established screening process would use the thresholds of their NRC-approved QA program, corrective action program, and operability/functionality process to determine if the information should be dispositioned by these programs or processes.

BACKFITTING AND ISSUE FINALITY DISCUSSION

This RIS discusses the requirements of 10 CFR Part 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," licensees' NRC-approved QA programs, and other existing regulations.

While the RIS discusses a licensee's obligation to follow their NRC-approved QA program, corrective action program, operability/functionality determination process, and applicable procedures, this RIS does not require any action or response by any addressee. Thus, this RIS does not represent backfitting as defined in 10 CFR 50.109(a)(1), 10 CFR 72.62, and is not otherwise inconsistent with any issue finality provision in 10 CFR Part 52. Therefore, the NRC did not prepare a backfit analysis for this RIS or further address the issue finality criteria in 10 CFR Part 52.

FEDERAL REGISTER NOTIFICATION

The NRC published a notice of opportunity for public comment on this RIS in the Federal Register (81 FR 30571) on May 17, 2016. The NRC staff received six comment submissions from five commenters. The NRC staff considered all comments, including two comment submissions that were received after the close of the comment period, as it was practicable to do so. These comments resulted in changes to the RIS. The disposition of these comments, and the resulting changes to the RIS are discussed in the publicly available memorandum responding to these comments, available in ADAMS at Accession No. ML17066A230.

CONGRESSIONAL REVIEW ACT

This RIS is not a rule as defined in the Congressional Review Act (5 U.S.C. §§ 801-808).

Paperwork Reduction Act Statement

This RIS does not contain any new or amended collections of information subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing collections of information were approved by the Office of Management and Budget, approval numbers 3150-0011, 3150-0151, and 3150-0155.

PUBLIC PROTECTION NOTIFICATION

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

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Note: NRC generic communications may be found on the NRC public Web site, http://www.nrc.gov, under NRC Library/Document Collections.

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