U.S. NUCLEAR REGULATORY COMMISSION

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GUIDANCE FOR TECHNOLOGY-INCLUSIVE RISK-INFORMED CHANGE EVALUATION

A. INTRODUCTION

Purpose

This regulatory guide (RG) describes an approach that the staff of the U.S. Nuclear Regulatory Commission (NRC) finds acceptable for using a technology-inclusive risk-informed change evaluation process for changes to a facility described in final safety analysis reports (as updated). Subject to the clarifications in Section C of this RG, this RG endorses the methodology described in Nuclear Energy Institute (NEI) 22-05, Revision 0, "Technology Inclusive Risk Informed Change Evaluation (TIRICE), Guidance for the Evaluation of Changes to Facilities Utilizing NEI 18-04 and NEI 21-07," issued January 2024 (Ref. 1), as an acceptable alternative to using the criteria in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.59, "Changes, tests, and experiments." Plants licensed using the methodology in NEI 18-04 and NEI 21-07 will have a licensing basis that is derived from a probabilistic risk assessment to a greater extent than if those plants were licensed under the existing regulatory frameworks in 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities" (Ref. 2.), and 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants" (Ref. 3). Therefore, the criteria in 10 CFR 50.59, which were developed to reflect a licensing basis developed under the 10 CFR Parts 50 and 52 frameworks, may not readily apply to those plants. Consequently, this guidance document addresses an area of regulation where special circumstances may warrant departure from some, or parts of some, regulations, such as 10 CFR 50.59. Ultimately, the licensee is responsible for preparing such exemption requests. As of the date of this RG, the NRC is developing an optional, performance-based, technology-inclusive regulatory framework for licensing nuclear power plants designated as 10 CFR Part 53, "Licensing and Regulation of Advanced Nuclear Reactors" (RIN 3150-AK31). The NRC's expectation is that the final version of that rule will contain an equivalent regulation to 10 CFR 50.59 that would be flexible enough to accommodate multiple approaches to changing a licensing basis and, therefore, use of the methodology described in this RG would be compatible with that regulation without exemptions. Thus, the NRC anticipates that this RG may be updated after the promulgation of this regulation to address the evaluation of changes specific to the licensing processes in the 10 CFR Part 53 framework.

Applicability

This RG applies to the holders of an operating license issued under 10 CFR Part 50 or a combined license issued under 10 CFR Part 52 for a non-light water reactor for which the licensing application was prepared using the guidance in NEI 18-04, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development" (Ref. 4), as endorsed in RG 1.233, Revision 0, "Guidance for a Technology-Inclusive, Risk-Informed, and Performance-Based Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors" (Ref. 5), and NEI 21-07, "Technology Inclusive Guidance for Non-Light Water Reactors, Safety Analysis Report Content for Applicants Using the NEI 18-04 Methodology" (Ref. 6), as endorsed in RG 1.253, Revision 0, "Guidance for a Technology-Inclusive Content-of-Application Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors" (Ref. 7).

Applicable Regulations

- 10 CFR Part 50 regulations for licensing production and utilization facilities.
    - 10 CFR 50.59 contains requirements for the process by which licensees, under certain conditions, may make changes to their facilities and procedures as described in the final safety analysis report (FSAR) (as updated), and conduct tests or experiments not described in the FSAR (as updated), without obtaining a license amendment pursuant to 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit."
    - 10 CFR 50.90 contains the requirements for applicants requesting an amendment to a license or permit under 10 CFR Part 50 or 10 CFR Part 52.
    - 10 CFR 50.12 "Specific exemptions," contains the requirements for applicants requesting an exemption from a regulation under 10 CFR Part 50.
- 10 CFR Part 52 governs the issuance of early site permits, standard design certifications, combined licenses, standard design approvals, and manufacturing licenses for nuclear power plants.
    - 10 CFR 52.7, "Specific exemptions," contains the requirements for applicants requesting an exemption from a regulation under 10 CFR Part 52.
    - 10 CFR 52.98, "Finality of combined licenses; information requests," contains provisions for holders of a combined license for evaluating changes to their facilities and procedures as described in the FSAR (as updated) and conduct tests or experiments not described in the FSAR (as updated), which include references to 10 CFR 50.59.
    - The Appendices to 10 CFR Part 52 for certified designs include Section VIII, "Processes for Changes and Departures," that provides the process by which applicants and holders of combined licenses may, under certain conditions, make changes to the Tier 2 information for their facilities and procedures as described in the plant-specific Design Control Document (as updated), without prior NRC approval using a process that includes the criteria from 10 CFR 50.59.

Related Guidance

- NEI 18-04, Revision 1, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development."

- NEI 21-07, Revision 1, "Technology Inclusive Guidance for Non-Light Water Reactors, Safety Analysis Report Content for Applicants Using the NEI 18-04 Methodology."

- NEI 96-07, Revision 1, "Guidelines for 10 CFR 50.59 Implementation" (Ref. 8), provides industry guidance on the implementation of 10 CFR 50.59.

- RG 1.233, Revision 0, "Guidance for a Technology-Inclusive, Risk-Informed, and Performance-Based Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors," contains the NRC's endorsement of the Licensing Modernization Project (LMP) methodology in NEI 18-04 for selecting licensing-basis events; classifying structures, systems, and components (SSCs); and assessing the adequacy of defense in depth.

- Interim Staff Guidance (ISG) DANU-ISG-2022-01, "Review of Risk-Informed, Technology-Inclusive Advanced Reactor Applications—Roadmap," dated March 2024 (Ref. 9), provides guidance to facilitate the preparation of licensing applications for non-light water reactor (non-LWR) technologies.

- RG 1.253, Revision 0, "Guidance for a Technology-Inclusive Content-of-Application Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors," contains the NRC's endorsement of the guidance related to contents of applications in NEI 21-07 for applicants using the methodology described in NEI 18-04.

- RG 1.187, Revision 3, "Guidance for Implementation of 10 CFR 50.59, 'Changes, Tests, and Experiments'" (Ref. 10), contains the NRC's endorsement of the guidance in NEI 96-07.

- RG 1.247 (For Trial Use), "Acceptability of Probabilistic Risk Assessment Results for Non-Light-Water Reactor Risk-Informed Activities" (Ref. 11), contains the NRC's endorsement, with exceptions and for trial use, of the guidance provided in American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) RA-S-1.4-2021, "Probabilistic Risk Assessment Standard for Advanced Non-Light Water Reactor Nuclear Power Plants" (Ref. 12).

Purpose of Regulatory Guides

The NRC issues RGs to describe methods that are acceptable to the staff for implementing specific parts of the agency's regulations, to explain techniques that the staff uses in evaluating specific issues or postulated events, and to describe information that the staff needs in its review of applications for permits and licenses. Regulatory guides are not NRC regulations and compliance with them is not required. Methods and solutions that differ from those set forth in RGs are acceptable if the applicant provides sufficient basis and information for the NRC staff to verify that the alternative methods comply with the applicable NRC regulations.

Paperwork Reduction Act

This RG provides voluntary guidance for implementing the mandatory information collections in 10 CFR Parts 50 and 52 that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et. seq.). These information collections were approved by the Office of Management and Budget (OMB), under control numbers 3150-0011 and 3150-0151, respectively. Send comments regarding this information collection to the FOIA, Library, and Information Collections Branch, Office of the Chief Information Officer, Mail Stop: T6-A10M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001or by email to Infocollects.Resource@nrc.gov, and to the OMB reviewer at: OMB Office of Information and Regulatory Affairs (3150-0011 and 3150-0151), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street, NW, Washington, DC 20503.

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.

B. DISCUSSION

Reason for Issuance

This RG endorses, subject to the clarifications in Section C of the RG, NEI 22-05 as one acceptable alternative to using the criteria in 10 CFR 50.59 for evaluating changes under the special circumstances introduced when a plant is licensed using the guidance in NEI 18-04 and NEI 21-07. The licensee would be responsible for preparing any necessary requests for an exemption from specific requirements in 10 CFR 50.59 and related proposed license condition to support this alternative.

Background

The NRC is reviewing applications for a new generation of non-LWRs and preparing associated guidance related to the design, licensing, and operation of such facilities. These efforts have included the development of several key guidance documents. Some important activities are related to the LMP, which was a cost-shared initiative led by nuclear utilities and supported by the U.S. Department of Energy (DOE). The LMP provides a technology-inclusive, risk-informed, and performance-based methodology to inform the licensing of non-LWRs. The LMP activities led to the publication and submittal of NEI 18-04 and its subsequent endorsement in RG 1.233. The methodology described in NEI 18-04 is different enough from those used for the current fleet of LWRs to warrant a distinct construct of safety analysis reports for applications under 10 CFR Parts 50 and 52. Guidance related to those portions of safety analysis reports directly related to the LMP methodology is provided in NEI 21-07, which the NRC staff endorsed in RG 1.253. Guidance for the content of applications in those portions of a safety analysis report that are not directly supported by the LMP methodology are addressed in other guidance documents. At the time of the publication of this RG, those guidance documents are described in interim staff guidance DANU-ISG-2022-01, "Review of Risk-Informed, Technology-Inclusive Advanced Reactor Applications—Roadmap."

Following the issuance of the guidance for important safety analysis methodologies in RG 1.233 and contents of applications in RG 1.253, the LMP-related series of guidance documents is being extended to include the evaluation of changes after a plant enters operations. An industry led and DOE supported project was initiated and it led to the publication and submittal of NEI 22-05. The guidance in NEI 22-05 builds from both (1) the available guidance in NEI 96-07 for evaluating changes under 10 CFR 50.59 and (2) the methodology described in NEI 18-04 and contents of applications described in NEI 21-07. The development of the guidance in NEI 22-05 and this RG provide criteria for evaluating changes that are relevant to the key parts of the licensing basis and content of applications associated with safety analysis reports developed using the guidance in NEI 18-04 and NEI 21-07.

The NRC staff acknowledges that the methodology for developing licensing basis information described in NEI 18-04 and RG 1.233 and the related organization of safety analysis reports described in NEI 21-07 and RG 1.253 differs from earlier guidance developed primarily for light-water reactors. The technology-inclusive nature of the newer guidance, the increased role of probabilistic risk assessments, and the increased use of performance-based versus prescriptive standards challenge the applicability and usefulness of the change evaluation process included in 10 CFR 50.59 and addressed in guidance documents such as NEI 96-07 and RG 1.187. The staff notes that the difficulty in applying the change evaluation process in 10 CFR 50.59 to non-LWRs licensed using the approaches in NEI 18-04 and NEI 21-07 may present special circumstances that could warrant following the alternative approach in NEI 22-05. As noted above, the licensee would be responsible for preparing any necessary requests for an exemption from specific requirements in 10 CFR 50.59 and related proposed license condition to support this approach.

The NRC staff notes that the timing of guidance development for non-LWRs is such that NEI 22-05 does not reflect the issuance of RG 1.253, which endorsed NEI 21-07. RG 1.253 does not include any exceptions, clarifications, or additions to the content of NEI 21-07 that would require changes to NEI 22-05 or its endorsement in this RG. Future revisions to NEI documents and related RGs may provide opportunities to update various references.

Consideration of International Standards

The International Atomic Energy Agency (IAEA) works with member states and other partners to promote the safe, secure, and peaceful use of nuclear technologies. The IAEA develops Safety Requirements and Safety Guides for protecting people and the environment from harmful effects of ionizing radiation. This system of safety fundamentals, safety requirements, safety guides, and other relevant reports reflects an international perspective on what constitutes a high level of safety. To inform its development of this RG, the NRC staff considered IAEA Safety Requirements and Safety Guides pursuant to the Commission's International Policy Statement (Ref. 13) and Management Directive and Handbook 6.6, "Regulatory Guides" (Ref. 14).

The following IAEA Safety Requirement and Guide was considered in the development of this RG:

- IAEA Specific Safety Requirements No. SSR-2/2, "Safety of Nuclear Power Plants: Commissioning and Operation" (Ref. 15).

Documents Discussed in Staff Regulatory Guidance

This RG endorses the use of one or more codes or standards developed by external organizations, and other third-party guidance documents. These codes, standards and third-party guidance documents may contain references to other codes, standards or third-party guidance documents ("secondary references"). If a secondary reference has itself been incorporated by reference into NRC regulations as a requirement, then licensees and applicants must comply with that standard as set forth in the regulation. If the secondary reference has been endorsed in an RG as an acceptable approach for meeting an NRC requirement, then the standard constitutes a method acceptable to the NRC staff for meeting that regulatory requirement as described in the specific RG. If the secondary reference has neither been incorporated by reference into NRC regulations nor endorsed in an RG, then the secondary reference is neither a legally binding requirement nor a "generic" NRC approved acceptable approach for meeting an NRC requirement. However, licensees and applicants may consider and use the information in the secondary reference, if appropriately justified, consistent with current regulatory practice, and consistent with applicable NRC requirements.

C. STAFF REGULATORY GUIDANCE

The guidance in NEI 22-05, Revision 0, provides an acceptable method for evaluating changes to plant design and procedures described in safety analysis reports for plants licensed using the guidance in NEI 18-04 and NEI 21-07, subject to the following.

1. The following clarifications related to Section 1, "Introduction," of NEI 22-05 are provided:

   Sections 1.3, "Purpose and Scope," and 4.1, "Applicability," define the scope of NEI 22-05 as being for operating licenses issued under 10 CFR Part 50 and combined licenses issued under 10 CFR Part 52 and excludes other licenses, certifications, and approvals under 10 CFR Part 52, such as early site permits and design certifications. While the process for proposing changes to design certifications is rightfully excluded from NEI 22-05, the NRC staff notes that a design certification application could use the methodology from NEI 18-04 and the organizational structure from NEI 21-07. A combined license that references such a design certification evaluates changes under 10 CFR 52.63, which references 10 CFR 50.59 for the evaluation of departures from the design that do not involve a change to the design as described in the rule certifying the design (i.e., Tier 2 information). Therefore, holders of or applicants for a combined license referencing a design certification that used NEI 18-04 and NEI 21-07 would be within the scope of the NEI 22-05 guidance.

   Section 1.4.4, "Relationship of this Guidance to 10 CFR 50.2 Design Bases," states that NEI 22-05 addresses changes to both 10 CFR 50.2 design bases and supporting design information contained in Updated Final Safety Analysis Reports. The section refers to NEI 97-04, Appendix B, "Guidance and Examples for Identifying 10 CFR 50.2 Design Bases" (Ref. 16), for additional information on "design basis." The NRC staff cautions that the cited guidance explaining the relationships between design basis, content of applications, and 10 CFR 50.59 reflects analysis methods used for light water reactors, regulations applicable to light water reactors (e.g., 10 CFR 50.62, "Requirements for reduction of risk from anticipated transient without scram (ATWS) events for light-water-cooled nuclear power plants," and 10 CFR 50.63, "Loss of all alternating current power"), and other issues and terminology that differ from the approaches described in NEI 18-04, NEI 21-07, and NEI 22-05. For example, as used in NEI 22-05, the term "design basis" refers to the safety-related SSCs fulfilling functions within the deterministic analyses for design basis accidents, while the scope of SSCs addressed in NEI 97-04 is somewhat broader and includes non-safety related SSCs such as risk-significant SSCs relevant to beyond design basis accidents. Nevertheless, the staff notes that special treatment requirements for non-safety related SSCs are addressed in NEI 22-05 by providing specific criteria for evaluating plant changes affecting the broader set of licensing basis events. The staff notes that additional measures related to maintaining the reliability and availability of risk-significant SSCs are expected to be addressed in more detail in future guidance. The purpose of this clarification is to emphasize that the related discussions in Section 3.4 and the actual criteria provided in Section 4 of NEI 22-05 are specific to the methodology from NEI 18-04 and the organizational structure of NEI 21-07.

2. The following clarification related to Section 3, "Definitions and Applicability of Terms," of NEI 22-05 is provided:

   The explanation for "Safety Analysis" in Section 3.12 is especially important because it limits the scope of other key terms such as "Methods of Evaluation" in Section 3.9 to those related to the facility's capability to withstand or respond to design basis accidents. The NRC staff finds this construct to be acceptable for evaluating changes to determine if NRC approval is needed because

Section 4.3 of NEI 22-05 contains criteria for evaluating plant changes that address issues related to both design basis accidents and to the relevant events categories other than design basis accidents. However, other controls, such as a reliability assurance program, will be needed to ensure that the capabilities and reliabilities of SSCs important to other licensing basis events are maintained and that changes are evaluated using other criteria in Section 4 of NEI 22-05. The staff expects that additional guidance will be prepared for maintaining probabilistic risk assessments, monitoring plant performance, evaluating changes in SSCs and procedures, and related impacts on the capabilities and availabilities of SSCs that are designated as non-safety related with special treatment.

3. The following clarification related to Section 4, "Implementation Guidance," of NEI 22-05 is provided:

   Section 4.1.5, "Changes to Approved Fire Protection Programs," discusses the evaluation of changes to an NRC-approved fire protection program in the context of existing plants that have the standard fire protection license condition incorporated into their license and utilize the license condition to evaluate changes to the fire protection program in place of the criteria in 10 CFR 50.59. While that discussion accurately reflects some past practices and relationships, the NRC staff notes that for recently licensed and future plants, the NRC views the criteria in 10 CFR 50.59 as sufficient to evaluate changes to fire protection programs and no longer identifies the fire protection license condition as necessary. This change in approach is discussed in Revision 4 to RG 1.189, "Fire Protection for Nuclear Power Plants" (Ref. 17), which states that for plants licensed under 10 CFR Part 52, the standard fire protection license condition does not apply and that the change process for a combined license is described in 10 CFR 52.98, which incorporates by reference the change processes in 10 CFR Part 50, including 10 CFR 50.59. The staff notes that for non-LWR plants that do not have the fire protection license condition incorporated into their license and that have internal fires properly integrated into the PRA and supporting analyses, the process and evaluation criteria in NEI 22-05 may support assessing changes to the fire protection program to determine if NRC approval of a change is needed. Internal fires are a significant topic within ASME/ANS RA-S-1.4-2, "Probabilistic Risk Assessment Standard for Advanced Non-Light Water Reactor Nuclear Power Plants," that the NRC endorsed for trial use in RG 1.247. Of note, NEI 21-07 discusses the handling of internal plant hazards such as internal fires, internal floods, high energy line breaks, and internally generated missiles or other "area events" that could affect SSCs performing PRA safety functions. The staff notes that Section 4.3.4 of NEI 22-05 provides an example of an evaluation of a change related to internal flooding, which is an internal or "area hazard" within the methodologies described in NEI 18-04 and NEI 21-07 and would be similar to how a change related to internal fires might be evaluated in this context.

4. The following clarification related to Appendix B, "Rationale for Change Control Criteria for Reactors Using NEI 18-04," to NEI 22-05 is provided:

   Appendix B, "Rationale for Change Control Criteria for Reactors Using NEI 18-04," provides an explanation of the nine evaluation criteria in Section 4 of NEI 22-05 and the thought process used by the authors of the report, including a crosswalk to the evaluation criteria in 10 CFR 50.59. While Appendix B to NEI 22-05, Revision 0 provides useful insights into the development of the evaluation criteria, the NRC staff makes no specific findings on the rationale used to develop the evaluation criteria in NEI 22-05.

D. IMPLEMENTATION

Licensees generally are not required to comply with the guidance in this regulatory guide. If the NRC proposes to use this regulatory guide in an action that would constitute backfitting, as that term is defined in 10 CFR 50.109, "Backfitting," and as described in NRC Management Directive 8.4, "Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests" (Ref. 18); affect the issue finality of an approval issued under 10 CFR Part 52; or constitute forward fitting, as that term is defined in Management Directive 8.4, then the NRC staff will apply the applicable policy in Management Directive 8.4 to justify the action. If a licensee believes that the NRC is using this regulatory guide in a manner inconsistent with the discussion in this Implementation section, then the licensee may inform the NRC staff in accordance with Management Directive 8.4.

REFERENCES [1]

These references indicate the versions of the documents available at the time of issuance of this RG. Licensees or applicants using this RG should check all referenced documents to verify that no change has occurred since the issuance of the RG.

1. Nuclear Energy Institute (NEI), NEI 22-05, Revision 0, "Technology Inclusive Risk Informed Change Evaluation (TIRICE), Guidance for the Evaluation of Changes to Facilities Utilizing NEI 18-04 and NEI 21-07," Washington, DC, January 2024. (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24032A237)[2]

2. *Code of Federal Regulations* (CFR), "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title 10, "Energy."[3]

3. CFR, "Licenses, Certifications, and Approvals for Nuclear Power Plants," Part 52, Chapter I, Title 10, "Energy."

4. NEI, NEI 18-04, Revision 1, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development," Washington, DC, August 2019. (ML19241A472)

5. Nuclear Regulatory Commission (NRC), RG 1.233, Revision 0, "Guidance for a Technology-Inclusive, Risk-Informed, and Performance-Based Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors," Washington, DC, June 2020. (ML20091L620)

6. NEI, NEI 21-07, Revision 1, "Technology Inclusive Guidance for Non-Light Water Reactors, Safety Analysis Report Content for Applicants Using the NEI 18-04 Methodology," Washington, DC, February 2022. (ML22060A190)

7. NRC, RG 1.253, Revision 0, "Guidance for a Technology-Inclusive Content-of-Application Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors," Washington, DC, March 2024. (ML23269A222)

8. NEI, NEI 96-07, Revision 1, "Guidelines for 10 CFR 50.59 Implementation," Washington, DC, November 2000. (ML003771157)

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[1] Publicly available NRC published documents are available electronically through the NRC Library on the NRC's public website at https://www.nrc.gov/reading-rm/doc-collections/ and through the NRC's ADAMS at https://www.nrc.gov/reading-rm/adams.html. For problems with ADAMS, contact the Public Document Room (PDR) staff at 301-415-4737 or (800) 397-4209, or email PDR.Resource@nrc.gov. The PDR, where you may also examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

[2] Publications from the NEI are available at their website: http://www.nei.org/ or by contacting their headquarters at Nuclear Energy Institute, 1776 I Street NW, Washington DC 20006-3708, Phone: 202-739-800, Fax: 202-785-4019.

[3] The *Code of Federal Regulations* may be obtained electronically from the U.S. Government Publishing Office at https://www.govinfo.gov/app/collection/cfr/.

9. NRC, Interim Staff Guidance (ISG) DANU-ISG-2022-01, "Review of Risk-Informed, Technology-Inclusive Advanced Reactor Applications—Roadmap," Washington, DC, March 2024. (ML23277A139)

10. NRC, RG 1.187, Revision 3, "Guidance for Implementation of 10 CFR 50.59, 'Changes, Tests, and Experiments,'" Washington, DC, June 2021. (ML21109A002)

11. NRC, RG 1.247 (For Trial Use), "Acceptability of Probabilistic Risk Assessment Results for Non-Light-Water Reactor Risk-Informed Activities," Washington, DC, March 2022. (ML21235A008)

12. American Society of Mechanical Engineers (ASME), ASME/ANS RA-S-1.4-2, "Probabilistic Risk Assessment Standard for Advanced Non-Light Water Reactor Nuclear Power Plants," New York, NY, February 2021.[4]

13. NRC, "Nuclear Regulatory Commission International Policy Statement," Federal Register, Vol. 79, No. 132, July 10, 2014, pp. 39415–39418.

14. NRC, Management Directive 6.6, "Regulatory Guides," Washington, DC, May 2, 2016. (ML18073A170)

15. International Atomic Energy Agency (IAEA), Specific Safety Requirements No. SSR-2/2, "Safety of Nuclear Power Plants: Commissioning and Operation," Vienna, Austria, 2016.[5]

16. Appendix B to NEI 97-04, Revision 1, "Guidance and Examples for Identifying 10 CFR 50.2 Design Bases," Washington, DC, November 2000. (ML003771698)

17. NRC, RG 1.189, Revision 4, "Fire Protection for Nuclear Power Plants," Washington, DC, May 2021. (ML21048A441)

18. NRC, Management Directive 8.4, "Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests," Washington, DC, September 20, 2019. (ML18093B087)

[4] Copies of ASME standards may be purchased from ASME, Two Park Avenue, New York, New York 10016-5990; telephone: (800) 843-2763. Purchase information is available through the ASME Web-based store at http://www.asme.org/Codes/Publications/.

[5] Copies of IAEA documents may be obtained through their website: www.iaea.org/ or by writing the International Atomic Energy Agency, P.O. Box 100 Wagramer Strasse 5, A-1400 Vienna, Austria.