

**NUCLEAR REGULATORY COMMISSION**

**[NRC-2022-0074]**

**Draft Interim Staff Guidance: Review of Risk-Informed, Technology Inclusive  
Advanced Reactor Applications - Roadmap**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Draft guidance; request for comment.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is soliciting public comment on its draft Interim Staff Guidance (ISG) DANU-ISG-2022-01, “Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications – Roadmap.” The purpose of this proposed ISG is to provide guidance to assist the NRC staff in determining whether an application for a non-light water reactor (non-LWR) design that uses the Licensing Modernization Project (LMP) process meets the minimum requirements for construction permits, operating licenses, combined licenses, manufacturing licenses, standard design approval, or design certifications.

**DATES:** Submit comments by July 10, 2023. Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

**ADDRESSES:** You may submit comments by any of the following methods; however, the NRC encourages electronic comment submission through the **Federal rulemaking website**.

- **Federal rulemaking website:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2022-0074**. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: [Stacy.Schumann@nrc.gov](mailto:Stacy.Schumann@nrc.gov). For

technical questions, contact the individual listed in the “For Further Information Contact” section of this document.

- **Mail comments to:** Office of Administration, Mail Stop: TWFN-7-A60M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Program Management, Announcements and Editing Staff.

For additional direction on obtaining information and submitting comments, see “Obtaining Information and Submitting Comments” in the SUPPLEMENTARY INFORMATION section of this document.

**FOR FURTHER INFORMATION CONTACT:** Joseph Sebrosky, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-1132, email: Joseph.Sebrosky@nrc.gov.

**SUPPLEMENTARY INFORMATION:**

**I. Obtaining information and Submitting Comments**

A. Obtaining Information

Please refer to Docket ID **NRC-2022-0074** when contacting the NRC about the availability of information for this action. You may obtain publicly available information related to this action by any of the following methods:

- **Federal Rulemaking Website:** Go to <https://www.regulations.gov> and search for Docket ID **NRC-2022-0074**.

- **NRC’s Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select “Begin Web-based ADAMS Search.” For problems with ADAMS, please contact the NRC’s Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov). For the convenience of the

reader, instructions about obtaining materials referenced in this document are provided in the “Availability of Documents” section.

- **NRC’s PDR:** You may examine and purchase copies of public documents, by appointment, at the NRC’s PDR, Room P1 B35, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. To make an appointment to visit the PDR, please send an email to [PDR.Resource@nrc.gov](mailto: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.

#### B. Submitting Comments

The NRC encourages electronic comment submission through the **Federal rulemaking website** (<https://www.regulations.gov>). Please include Docket ID **NRC-2022-0074** in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at <https://www.regulations.gov> as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

## II. Background

The NRC anticipates the submission of advanced power-reactor applications within the next few years based on preapplication engagement initiated by several prospective applicants. Because many of these designs are non-LWRs, the NRC is developing technology-inclusive, risk-informed, performance-based guidance to support the development and review of these non-LWR applications. The proposed guidance will facilitate the development and review of non-LWR applications for construction permits or operating licenses under part 50 of title 10 of the *Code of Federal Regulations* (10 CFR), “Domestic Licensing of Production and Utilization Facilities,” or combined licenses, manufacturing licenses, standard design approval, or design certifications under 10 CFR part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants.” The NRC is developing a rule to amend 10 CFR parts 50 and 52 (RIN 3150-AI66). The NRC staff notes this proposed ISG may need to be updated to conform to changes to 10 CFR parts 50 and 52, if any, adopted through that rulemaking. Further, as of the date of this draft ISG, 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 intends to revise this proposed guidance as a part of the ongoing rulemaking for 10 CFR part 53.

To standardize the development of content of a non-LWR application, the staff focused on two activities: the Advanced Reactor Content of Application Project (ARCAP) and the Technology-Inclusive Content of Application Project (TICAP). The ARCAP is an NRC-led activity that is intended to result in guidance for a complete non-LWR application for review under 10 CFR part 50 or 10 CFR part 52, and which the staff would update, as appropriate, pending the issuance of the 10 CFR part 50 and

10 CFR part 52 rulemaking as previously mentioned in this notice, or if the Commission issues a final 10 CFR part 53 rule. As a result, the ARCAP is broad and encompasses several industry-led and NRC-led guidance document development activities aimed at facilitating a consistent approach to the development of application documents.

The TICAP is an industry-led activity that is focused on providing guidance on the appropriate scope and depth of information related to the specific portions of the safety analysis report that describe the fundamental safety functions of the design and document the safety analysis of the facility using the LMP-based approach. The LMP-based approach is described in Regulatory Guide (RG) 1.233, “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,” (ADAMS Accession No. ML20091L698).

### **III. Request for Comment**

The ARCAP draft ISG titled “Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications – Roadmap” (ARCAP Roadmap ISG) that is the subject of this *Federal Register* notice (FRN) for which the staff is seeking comment, was developed to provide a general overview of the information that should be included in a non-LWR application. The ARCAP Roadmap ISG also provides a review roadmap for the NRC staff with the principal purpose of ensuring consistency, quality, and uniformity of NRC staff reviews. The ARCAP Roadmap ISG includes references to eight other ARCAP draft ISGs and a TICAP draft regulatory guide (DG) that are the subject of separate FRNs requesting comment on these guidance documents. Information regarding the eight other ARCAP draft ISGs and the TICAP DG can be found in the “Availability of Documents” section of this FRN. The ARCAP Roadmap ISG also refers

to a wide variety of NRC-issued, approved, or endorsed documents and the NRC is requesting comment on this proposed ISG's use of those documents.

Additionally, the staff is issuing for public comment a draft regulatory analysis. The staff developed a regulatory analysis to assess the value of issuing or revising a regulatory guide as well as alternative courses of action.

The NRC staff is not seeking public comment on the italicized text found in ARCAP Roadmap ISG, Appendix C, "Construction Permit Guidance." The italicized text found in Appendix C is applicable to both light water reactors (LWR) and non-LWRs and is based on guidance found in DNRL-ISG-2022-01, "Safety Review of Light-Water Power Reactor Construction Permit Applications," (ADAMS Accession No. ML22189A099). The staff sought public comment on this LWR Construction Permit (CP) ISG as documented in the *Federal Register* on December 14, 2021 (86 FR 71101) and May 6, 2022 (87 FR 27195). The final ISG was issued on November 14, 2022 (87 FR 68202). Details regarding the status of the LWR CP ISG can be found at <https://www.regulations.gov> under Docket ID NRC-2021-0162.

In addition, the staff plans to update the ARCAP Roadmap ISG upon completing other documents under development and listed in ARCAP Roadmap ISG, Appendix D. The staff is not requesting comment on any of those documents at this time. The NRC staff will request comment on the documents in Appendix D to the extent normal NRC processes call for publication of any one of these documents for public comment.

#### **IV. Availability of Documents**

The table in this notice provides the document description, ADAMS accession number, and, if appropriate, the docket identification number referencing the request for public comment on supporting documents associated with the document that is the subject of this FRN.

<b>Document Description</b>	<b>ADAMS Accession No.</b>	<b>Regulations.gov Docket ID No.</b>
Draft Interim Staff Guidance DANU-ISG-2022-01 “Advanced Reactor Content of Application Project, ‘Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications – Roadmap.’”	ML22048B546	NRC-2022-0074
Draft Interim Staff Guidance DANU-ISG-2022-02, “Advanced Reactor Content of Application Project Chapter 2, ‘Site Information.’”	ML22048B541	NRC-2022-0075
Draft Interim Staff Guidance DANU-ISG-2022-03, “Advanced Reactor Content of Application Project Chapter 9, ‘Control of Routine Plant Radioactive Effluents, Plant Contamination and Solid Waste.’”	ML22048B543	NRC-2022-0076
Draft Interim Staff Guidance DANU-ISG-2022-04, “Advanced Reactor Content of Application Project Chapter 10, ‘Control of Occupational Dose.’”	ML22048B544	NRC-2022-0077
Draft Interim Staff Guidance DANU-ISG-2022-05, “Advanced Reactor Content of Application Project Chapter 11, ‘Organization and Human-System Considerations.’”	ML22048B542	NRC-2022-0078
Draft Interim Staff Guidance DANU-ISG-2022-06, “Advanced Reactor Content of Application Project Chapter 12, ‘Post-Construction Inspection, Testing, and Analysis Program.’”	ML22048B545	NRC-2022-0079
Draft Interim Staff Guidance DANU-ISG-2022-07, “Advanced Reactor Content of Application Project, ‘Risk-informed Inservice Inspection/Inservice Testing.’”	ML22048B549	NRC-2022-0080
Draft Interim Staff Guidance DANU-ISG-2022-08, “Advanced Reactor Content of Application Project, ‘Risk-Informed Technical Specifications.’”	ML22048B548	NRC-2022-0081
Draft Interim Staff Guidance DANU-ISG-2022-09, “Advanced Reactor Content of Application Project, ‘Risk-informed Performance-based Fire Protection Program (for Operations).’”	ML22048B547	NRC-2022-0082
DG-1404, “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.”	ML22076A003	NRC-2022-0073
Regulatory Analysis for ARCAP ISGs	ML23093A099	NRC-2022-0074

## **V. Backfitting, Forward Fitting, and Issue Finality**

DANU-ISG-2022-01, if finalized, would not constitute backfitting as defined in 10 CFR 50.109, “Backfitting,” and as described in Management Directive (MD) 8.4,

“Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests”; constitute forward fitting as that term is defined and described in MD 8.4; or affect the issue finality of any approval issued under 10 CFR part 52. The guidance would not apply to any current licensees or applicants or existing or requested approvals under 10 CFR part 52, and therefore its issuance cannot be a backfit or forward fit or affect issue finality. Further, as explained in DANU-ISG-2022-01, applicants and licensees would not be required to comply with the positions set forth in DANU-ISG-2022-01.

Dated: May 22, 2023.

For the Nuclear Regulatory Commission.

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Steven T. Lynch, Chief,  
Advanced Reactor Policy Branch,  
Division of Advanced Reactors and  
Non-Power Production and Utilization  
Facilities,  
Office of Nuclear Reactor Regulation.