**[7590-01-P]**

**NUCLEAR REGULATORY COMMISSION**

**[NRC-2020-0072]**

# Design Review Guide for Instrumentation and Controls for Non-Light-Water Reactor Reviews

**AGENCY:** Nuclear Regulatory Commission.

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

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is soliciting public comment on its draft Design Review Guide (DRG): Instrumentation and Controls for Non-Light-Water Reactor (non-LWR) Reviews. This DRG provides guidance for the NRC staff to use in reviewing the Instrumentation and Controls (I&C) portions of applications for advanced non-LWRs within the bounds of existing regulations. The guidance supports NRC's Non-LWR Vision and Strategy, Implementation Action Plan Strategy 3, which involves developing: (1) guidance for flexible regulatory review processes for non-LWRs within the bounds of existing regulations; and (2) a new non-LWR regulatory framework that is risk-informed and performance-based, and that features NRC staff's review efforts commensurate with the demonstrated safety performance of non-LWR technologies.

**DATES:** Submit comments by **[INSERT DATE 75 DAYS FROM DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. 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 before this date.

**ADDRESSES:** You may submit comments by any of the following methods:

- **Federal Rulemaking Web Site:** Go to https://www.regulations.gov and search for Docket ID **NRC-2020-0072**. Address questions about NRC docket IDs in Regulations.gov to Jennifer Borges; telephone: 301-287-9127; e-mail: Jennifer.Borges@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:** Jordan Hoellman, Office of Nuclear Reactor Regulation, telephone: 301-415-5481, e-mail: Jordan.Hoellman2@nrc.gov, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001.

**SUPPLEMENTARY INFORMATION:**

## I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID **NRC-2020-0072** 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 Web Site:** Go to https://www.regulations.gov and search for Docket ID **NRC-2020-0072**.

- **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 e-mail to pdr.resource@nrc.gov. The Design Review Guide (DRG): Instrumentation and Controls for Non-Light-Water Reactor Reviews is available in ADAMS under Accession No. ML20045D302.

B. Submitting Comments

Please include Docket ID **NRC-2020-0072** 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

This DRG guidance leverages the Small Modular Reactor Design-Specific Review Standard Chapter 7 framework while factoring in the lessons learned from new reactor reviews. This guidance supports the NRC's Vision and Strategy document entitled "Safely Achieving Effective and Efficient Non-Light Water Reactor Mission Readiness" (ADAMS Accession No. ML16356A670), and the "Non-LWR Vision and

Strategy Near-Term Implementation Action Plans" (ADAMS Accession No. ML17165A069). Specifically, the guidance discussed herein supports Implementation Action Plan Strategy 3, which involves developing: (1) guidance for flexible regulatory review processes for non-LWRs within the bounds of existing regulations; and (2) a new non-LWR regulatory framework that is risk-informed and performance-based, and that features NRC staff's review efforts commensurate with the demonstrated safety performance of non-LWR technologies. This DRG also factors in the principles in Draft Regulatory Guide (DG)-1353, "Guidance for Technology-Inclusive, Risk-Informed, and Performance-Based Approach to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors" (ADAMS Accession No. ML18312A242). DG-1353 endorses the methodology in Nuclear Energy Institute 18-04, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development" (ADAMS Accession No. ML19241A472), with clarifications and points of emphasis.

This DRG provides guidance for the NRC staff responsible for the review of the I&C portion of license applications to help determine whether: (1) the applicant has demonstrated that there is reasonable assurance that the plant is designed to adequately protect public health and safety and the environment; and (2) the design complies with the applicable regulatory requirements. Some advanced reactor reviews will use a core review team approach and the I&C topics will be addressed as part of the staff's collaborations on the overall plant design and associated programmatic controls. This DRG supports the I&C-related reviews as part of such a core review team approach or a more traditional matrix-type review of applications.

The NRC staff guidance discussed herein is a proactive way to further modernize the I&C safety review of advanced non-LWR applications by making it technology-inclusive, risk-informed, and performance-based.

Dated: April 8, 2020.

For the Nuclear Regulatory Commission.

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