

**NUCLEAR REGULATORY COMMISSION**

**[NRC-2014-0254]**

**Advanced Light-Water Reactor Probabilistic Risk Assessment**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Interim staff guidance; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is issuing Interim Staff Guidance (ISG), DC/COL-ISG-028, "Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application." The purpose of this ISG is to provide guidance for assessing the technical adequacy of the probabilistic risk assessment (PRA) needed for advanced light-water reactor (ALWR) design certification (DC) and combined license (COL) applications. This guidance addresses only the typical conditions for the DC and COL application.

**DATES:** The DC/COL-ISG-028 is available on December 2, 2016.

**ADDRESSES:** Please refer to Docket ID NRC-2014-0254 when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods.

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2014-0254. Address questions about NRC dockets to Carol Gallagher;

telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC’s Agencywide Documents Access and Management System (ADAMS):**

You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select “[ADAMS Public Documents](#)” and then 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](mailto:pdr.resource@nrc.gov). For the convenience of the reader, the ADAMS accession numbers are provided in a table in the “Availability of Documents” section of this document.

- **NRC’s PDR:** You may examine and purchase copies of public documents at the

NRC’s PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

- **NRC’s Public Web Site:** NRC posts its issued staff guidance at

<http://www.nrc.gov/reading-rm/doc-collections/isg>.

**FOR FURTHER INFORMATION CONTACT:** Mark Lintz, Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; telephone: 301-415-4051; email: [Mark.Lintz@nrc.gov](mailto:Mark.Lintz@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Discussion**

The NRC is issuing DC/COL-ISG-028, “Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification

Application and Combined License Application,” to provide specific review guidance for assessing the technical adequacy of the PRA needed for an application for a DC of an ALWR under part 52 of title 10 of the *Code of Federal Regulations* (10 CFR), “Licenses, Certifications, and Approvals for Nuclear Power Plants,” specifically 10 CFR 52.47(a)(27). This ISG will also apply to an application for a COL under 10 CFR 52.79(a)(46). Specifically, this guidance addresses how these applicants can use American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) RA-Sa-2009, “Addenda to ASME/ANS RA-S-2008 Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications,” (the PRA Standard), as endorsed by NRC’s Regulatory Guide (RG) 1.200, Revision 2, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities.”

The NRC staff intends to incorporate DC/COL-ISG-028 into the next revision of RG 1.200, Revision 2; RG 1.206, “Combined License Applications for Nuclear Power Plants;” NUREG-0800, “Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants;” and SRP Chapter 19.0, “Probabilistic Risk Assessment and Severe Accident Evaluation for New Reactors,” as appropriate.

## II. Public Comments

The NRC issued draft DC/COL-ISG-028, “Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application,” in the *Federal Register* on November 26, 2014 (79 FR 70575), for a 60-day comment period. The comment period ended on January 26, 2015. The Commission received 49 comments from the Nuclear Energy Institute (NEI). These comments were addressed and are available in the comment resolution document.

### III. Backfitting and Issue Finality

The NRC is issuing this ISG to assist the NRC staff when assessing the technical adequacy of PRAs submitted as part of ALWR DC and COL applications. Issuance of this ISG does not constitute backfitting as defined in §50.109 of title 10 of the *Code of Federal Regulations* (10 CFR) (the Backfit Rule) or otherwise be inconsistent with the issue finality provisions in 10 CFR part 52. The NRC staff's position is based upon the following considerations.

*1. The ISG positions do not constitute backfitting, inasmuch as the ISG is internal guidance to NRC staff.*

The ISG provides interim guidance to the NRC staff on how to review an application for NRC regulatory approval in the form of licensing. Changes in internal NRC staff guidance are not matters for which either nuclear power plant applicants or licensees are protected under 10 CFR 50.109 or the issue finality provisions of 10 CFR part 52.

*2. Backfitting and issue finality -- with certain exceptions discussed below -- do not protect current or future applicants.*

Applicants are not, with certain exceptions, protected by either the Backfit Rule or any issue finality provisions under 10 CFR part 52. This is because neither the Backfit Rule nor the issue finality provisions under 10 CFR part 52 -- with certain exclusions discussed below -- were intended to apply to every NRC action that substantially changes the expectations of current and future applicants.

The exceptions to the general principle are applicable whenever an applicant references a 10 CFR part 52 license (e.g., an early site permit) or NRC regulatory approval (e.g., a design certification rule) with specified issue finality provisions. The NRC staff does not, at this time,

intend to impose the positions represented in the ISG in a manner that is inconsistent with any issue finality provisions. If, in the future, the NRC staff seeks to impose a position in the ISG in a manner that does not provide issue finality as described in the applicable issue finality provision, then the NRC staff must address the criteria for avoiding issue finality as described in the applicable issue finality provision.

*3. NRC consideration of PRA impacts to address the application of the PRA Standard are outside the scope of matters subject to backfitting protection, and are not a violation of issue finality provisions.*

The NRC consideration of PRA impacts to address the application of the PRA Standard, and an applicant's submission of risk-assessment information needed to support the NRC's assessment of the technical adequacy of the PRA, do not fall within the scope of matters that constitute backfitting. Consideration of PRA impacts to address the application of the PRA Standard falls within the scope of matters protected under issue finality provisions. However, this protection applies only if a COL application references a PRA. Therefore, issuance of this ISG does not constitute a violation or inconsistency of the issue finality provisions applicable to COL applications referencing a PRA.

#### **IV. Congressional Review Act**

This ISG is a rule as defined in the Congressional Review Act (5 U.S.C. 801-808). However, the Office of Management and Budget has not found it to be a major rule as defined in the Congressional Review Act.

## V. Availability of Documents

The documents identified in the following table are available as indicated.

<b>Document Title</b>	<b>ADAMS Accession No.</b>
Interim Staff Guidance-028, "Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application" (Clean Version)	ML16130A468
Interim Staff Guidance-028, "Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application" (Redline Version)	ML16155A055
Interim Staff Guidance-028, Comment Resolution Table	ML16130A466
NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition, Chapter 19.0, Severe Accidents"	ML15089A068
Regulatory Guide 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities"	ML090410014
Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants"	ML070720184

Dated at Rockville, Maryland, this 28th day of November, 2016.

For the Nuclear Regulatory Commission.

/ RA /

Joseph Colaccino, Chief,  
New Reactor Rulemaking and Guidance Branch,  
Division of Engineering Infrastructure and  
Advanced Reactors  
Office of New Reactors.

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**ADAMS Accession No.: ML16176A102**

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