

**NUCLEAR REGULATORY COMMISSION**

**10 CFR Parts 50 and 52**

**[Docket No. NRC-2015-0225]**

**RIN 3150-AJ68**

**EMERGENCY PREPAREDNESS FOR SMALL MODULAR REACTORS AND OTHER NEW  
TECHNOLOGIES**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Draft regulatory basis; public meeting, and request for comment.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is requesting comment on a draft regulatory basis to support a rulemaking that would develop new emergency preparedness (EP) requirements for small modular reactors (SMRs) and other new technologies (ONTs), such as non-light-water reactors (non-LWRs) and medical isotope production facilities. The new EP regulations would be consequence-oriented, performance-based, and technology inclusive to the extent possible, and continue to provide reasonable assurance of adequate protection of public health and safety. The new EP regulations would be applicable to SMR and ONT facilities only. Large light-water reactors (LWRs), fuel cycle facilities, research and test reactors and other non-power, non-commercial, facilities are not in the scope of this rulemaking. The NRC plans to hold a public meeting to promote full understanding of the rulemaking and facilitate public participation.

**DATES:** Submit comments by June 27, 2017. 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:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2015-0225. 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 individuals listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **E-mail comments to:** [Rulemaking.Comments@nrc.gov](mailto:Rulemaking.Comments@nrc.gov). If you do not receive an automatic e-mail reply confirming receipt, then contact us at 301-415-1677.

- **Fax comments to:** Secretary, U.S. Nuclear Regulatory Commission at 301-415-1101.

- **Mail comments to:** Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-001, ATTN: Rulemakings and Adjudications Staff.

- **Hand deliver comments to:** 11555 Rockville Pike, Rockville, MD 20852, between 7:30 a.m. and 4:15 p.m. (Eastern Time) Federal workdays; telephone: 301-415-1677.

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:** Andrew Carrera, Office of New Reactors, telephone: 301-415-1078, e-mail: [Andrew.Carrera@nrc.gov](mailto:Andrew.Carrera@nrc.gov); and Arlon Costa, Office of New

Reactors, telephone: 301-415-6402, e-mail: Arlon.Costa@nrc.gov. Both are staff of the 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-2015-0225 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 <http://www.regulations.gov> and search for Docket ID NRC-2015-0225.

- **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). The draft regulatory basis document is available in ADAMS under Accession No. ML16309A332.

- **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.

## B. Submitting Comments

Please include Docket ID NRC-2015-0225 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 <http://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. Discussion

The NRC is requesting comments on a draft regulatory basis to support a rulemaking that would amend part 50 of title 10 of the *Code of Federal Regulations* (10 CFR), “Domestic Licensing of Production and Utilization Facilities,” and part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” by adopting new EP regulations for SMR and ONT licensees. The specific objectives of this rulemaking effort are to establish new EP requirements for SMR and ONT licensees that will recognize: (1) distance to which planning for initiation of predetermined protective actions is warranted, (2) time-dependent characteristics of potential releases and exposures, and (3) isotopic characteristics of radioactive materials that can potentially be released to the environment.

The scope of the draft regulatory basis includes EP for new SMR and ONT facilities licensed under 10 CFR parts 50 and 52. Under current regulations for large LWR designs, the plume exposure pathway emergency planning zone (EPZ) size is about 10 miles (16 kilometers). However, SMRs and ONTs may have comparatively smaller reactor core size and also include passive design safety features, which result in potential accident releases and offsite radiation dose consequences that are smaller and may be delayed when compared to large LWRs. To account for this difference as compared to large LWRs, the NRC plans to develop a consequence-oriented, performance-based, and technology inclusive approach to EP for these SMR and ONT designs. With the proposed adoption of an approach for these designs where the plume exposure pathway EPZ size is scalable in proportion with potential accident consequences, the potential exists for this EPZ to be contained within the site boundary. The draft regulatory basis, in part, explains why the NRC believes the existing regulations should be updated, revised, and enhanced; presents alternatives to rulemaking; and discusses costs and other impacts of the potential changes.

### **III. Specific Requests for Comments**

The NRC is seeking comments and supporting rationale from the public on the following questions:

*Scope of Draft Regulatory Basis:*

- Is the NRC considering an appropriate approach for each objective described in the draft regulatory basis?
- Section 3 of the draft regulatory basis discusses the regulatory concerns the NRC expects to address through rulemaking. Section 4 presents the intended regulatory changes to address those regulatory concerns, and also discusses alternatives to rulemaking considered by the NRC. Are there other regulatory concerns within or

related to the scope of the rulemaking efforts (see Section 4) that the NRC should consider? Are there other approaches or alternatives the NRC should consider to resolve those regulatory concerns?

- Are there any other alternatives for EP for SMRs and ONTs to address beyond those discussed in the draft regulatory basis that the NRC should consider?
- Are there other EP related issues that the NRC staff should consider in further developing this regulatory basis?
- Is the scope of facilities to be included under the ONT umbrella (see Section 1.1) appropriate or can you suggest additions or deletions?

*Performance-Based Approach:*

- What are the benefits of a performance-based EP approach, other than those described in the draft regulatory basis?
- Should the NRC continue research to establish performance-based criteria specific for SMRs and ONTs in the EP area? Examples of such research that has been performed are discussed in SECY-14-0038, "Performance-Based Framework for Nuclear Power Plant Emergency Preparedness Oversight," (ADAMS Accession No. ML14259A589).
- Is it appropriate to establish combined risk-informed and performance-based criteria, and can you suggest EP areas or methods where they could successfully be implemented?

*Regulatory Impacts:*

- Section 5 of the draft regulatory basis presents the NRC's initial consideration of costs and other impacts for a number of key aspects of the potential regulatory

- changes. This initial assessment is based on limited available data. The NRC is seeking additional data and input relative to expected and/or unintentional impacts from the desired regulatory changes. What would be the potential impacts to stakeholders, such as applicants, licensees, and the public, from implementing any of the desired regulatory changes described in this draft regulatory basis? We are also seeking comments on reasonable cost estimates for implementation of the EP for SMRs and ONTs regulations, including one-time startup cost and annual cost?
- What would the cost be for 10 CFR part 52 licensees to be licensed under the proposed performance-based EP approach? What would be the cost difference between this new EP approach and the current EP approach in 10 CFR part 50?
  - What impacts, other than cost, would result from the rulemaking action under consideration?

#### **IV. Cumulative Effects of Regulation**

The cumulative effects of regulation (CER) describes the challenges that licensees or other impacted entities (such as State agency partners, Tribal and local governments) may face while implementing new regulatory positions, programs, and requirements (e.g., rules, generic letters, backfits, inspections). The CER is an organizational challenge that results from a licensee or impacted entity implementing a number of complex positions, programs, or requirements within a limited implementation period and with available resources (which may include limited available expertise to address a specific issue). The NRC has implemented CER enhancements to the rulemaking process to facilitate public involvement throughout the rulemaking process. Therefore, the NRC is specifically requesting comments on the cumulative effects that may result from this proposed rulemaking. In developing comments on the draft regulatory basis, consider and provide comments on the following questions:

1. In light of any current or projected CER challenges, what should be a reasonable effective date, compliance date, or submittal date(s) from the time the final rule is published to the actual implementation of any proposed requirements, including changes to programs, procedures, and the facility?

2. If CER challenges currently exist or are expected, what should be done to address them? For example, if more time is required for subsequent implementation of the new requirements, what period of time is sufficient?

3. Do other (NRC or other agency) regulatory actions (e.g., orders, generic communications, license amendment requests, and inspection findings of a generic nature) influence the subsequent implementation of the proposed rule's requirements?

4. Are there unintended consequences? Does the draft regulatory basis create conditions that would be contrary to the draft regulatory basis' purpose and objectives? If so, what are the unintended consequences, and how should they be addressed?

## **V. Availability of Documents**

The NRC may post documents related to this rulemaking activity to the Federal rulemaking Web site at <http://www.regulations.gov> under Docket ID: NRC-2015-0225.

The Federal rulemaking Web site allows you to receive alerts when changes or additions occur in a docket folder. To subscribe: (1) navigate to the docket folder (NRC-2015-0225); (2) click the "Sign up for E-mail Alerts" link; and (3) enter your e-mail address and select how frequently you would like to receive e-mails (daily, weekly, or monthly).



## **VI. Plain Writing**

The Plain Writing Act of 2010 (Pub. L. 111-274) requires Federal agencies to write documents in a clear, concise, and well-organized manner. The NRC has written this document to be consistent with the Plain Writing Act as well as the Presidential Memorandum, "Plain Language in Government Writing," published June 10, 1998 (63 FR 31883). The NRC requests comment on this document with respect to the clarity and effectiveness of the language used.

## **VII. Public Meeting**

The NRC plans to hold a public meeting during the public comment period for this notice. The public meeting will provide a forum for the NRC staff to discuss the issues and questions with external stakeholders regarding the draft regulatory basis to add new EP requirements for SMRs and ONTs. The NRC does not intend to provide detailed responses to comments or other information submitted during the public meeting.

The public meeting will be noticed on the NRC's public meeting Web site at least 10 calendar days before the meeting. Stakeholders should monitor the NRC's Public Meeting Schedule Web page for additional information about the public meeting at <http://meetings.nrc.gov/pmns/mtg>.

The NRC will post a notice for the public meeting and may post additional material related to this action to the Federal rulemaking Web site at [www.regulations.gov](http://www.regulations.gov) under Docket ID NRC-2015-0225.

Dated at Rockville, Maryland, this 29th day of March 2017.

For the Nuclear Regulatory Commission.

*/RA/*

Robert K. Caldwell, Acting Director,  
Division of Engineering and Infrastructure  
Office of New Reactors

**ADAMS Accession No: ML16298A075**

**\*via email**

OFFICE	NRO/DEIA/NRGB*	NRO/DEIA/NRGB*	ADM/DAS*	QTE*	NRO/DEIA
NAME	ACarrera	JColaccino	C Bladey (LTerry for)	JDougherty	MMayfield (RCaldwell for)
DATE	10/27/2016	10/28/2016	10/31/2016	11/09/2016	03/29/2017
OFFICE	NRO/DSEA/ARPB*	NSIR/DPR/POB*	NRO/DSEA/ARPB*	OGC *	
NAME	Acosta	CRosales-Cooper	JSegala	MCarpentier	
DATE	10/27/2016	10/09/2016	11/14/2016	12/06/2016	

**OFFICIAL RECORD COPY**