[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[NRC-2025-0098]

Level 3 Probabilistic Risk Assessment Project Documentation (Volume 8)

AGENCY: Nuclear Regulatory Commission.

ACTION: Draft report; request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing for public comment a draft report on the Level 3 Probabilistic Risk Assessment (PRA) project; specifically, "Volume 8: Integrated Site Risk, All Hazards, Level 1, Level 2, and Level 3 PRA."

DATES: Submit comments by **October 3, 2025**. 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 https://www.regulations.gov and search for Docket ID **NRC-2025-0098**. Address questions about Docket IDs in Regulations.gov to Bridget Curran; telephone: 301-415-1003; email: Bridget.Curran@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: Alan Kuritzky, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-1552; email: Alan.Kuritzky@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID **NRC-2025-0098** 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-2025-0098**.
- **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, at 301-415-4737, or by email to 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:** The PDR, where you may 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.

B. Submitting Comments

The NRC encourages electronic comment submission through the **Federal rulemaking website** (https://www.regulations.gov). Please include Docket ID **NRC-2025-0098** 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. Discussion

As directed in SRM-SECY-11-0089, “Options for Proceeding with Future Level 3 Probabilistic Risk Assessment (PRA) Activities,” the staff is conducting a full-scope multi-unit site Level 3 PRA (Level 3 PRA project) that addresses all internal and external hazards; all plant operating modes; and all reactor units, spent fuel pools (SFPs), and dry cask storage. The reference site for this study contains 2 four-loop Westinghouse pressurized water reactors with large dry containments. The objectives of the Level 3 PRA project are to (1) develop a Level 3 PRA, generally based on current state-of-

practice methods, tools, and data, that (a) reflects technical advances since the last NRC-sponsored Level 3 PRAs (NUREG-1150), which were completed over 30 years ago, and (b) addresses scope considerations that were not previously considered (e.g., low-power and shutdown risk, multi-unit risk, other radiological sources); (2) extract new insights to enhance regulatory decision making and to help focus limited NRC resources on issues most directly related to the agency's mission to protect public health and safety; (3) enhance PRA staff capability and expertise and improve documentation practices to make PRA information more accessible, retrievable, and understandable; and (4) demonstrate technical feasibility and evaluate the realistic cost of developing new Level 3 PRAs.

The work performed under this project is being documented as a multi-volume report. The current Level 3 PRA project report (Volume 8) describes the analyses and results for the integrated site risk (ISR) task. The Level 3 PRA project ISR task is a site-specific analysis that consists of the following high-level steps: sitewide dependency assessment; multi-unit (MU) Level 1, Level 2, and Level 3 PRA; and ISR analysis. Multi-unit core damage frequencies (MUCDFs) were developed for all identified multi-unit initiating events (MUIEs). The total MUCDF was approximately 10 percent of the total single-unit core damage frequency, with seismic events being the largest contributors to MU risk. Due to computational challenges, MU Level 2 and Level 3 analyses were limited to two MUIEs: weather-related losses of offsite power and a large seismic event. The study found that MU consequences for these MUIEs were small compared to the single-unit results. For the final ISR step, a single illustrative scenario was identified that involved potential sitewide dependencies between the reactors and the spent fuel pools and was risk-significant to both the spent fuel pools and the reactors: a large seismic event. Risk results for the illustrative ISR scenario are reported for several consequence

metrics, including individual latent cancer fatality risk, collective total effective dose risk, and economic cost. Regardless of the consequence metric, the risk estimated for the illustrative ISR scenario was calculated to be low as compared to the MU and single-source (i.e., single-unit reactor or SFP) results.

III. Availability of Documents

The documents identified in the following table are available to interested persons through ADAMS, as indicated.

DOCUMENT DESCRIPTION	ADAMS ACCESSION NO.
SRM-SECY-11-0089, "Options for Proceeding with Future Level 3 Probabilistic Risk Assessment (PRA) Activities," dated September 21, 2011	ML112640419
Level 3 PRA Project, Volume 8: Integrated Site Risk, All Hazards, Level 1, Level 2, and Level 3 PRA (draft for public comment), published August 2025	ML25149A043

Dated: July 31, 2025.

For the Nuclear Regulatory Commission.

/RA/

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