POLICY ISSUE
(Information)

December 23, 2024 SECY-24-0105

FOR: The Commissioners

FROM: Craig Erlanger, Director
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SUBJECT: ANNUAL UPDATE ON THE STATUS OF THE EMERGENCY PREPAREDNESS PROGRAM

PURPOSE:

The purpose of this paper is to provide the Commission with an assessment of the U.S. Nuclear Regulatory Commission's (NRC's) emergency preparedness (EP) program for fiscal year (FY) 2024. This paper does not address any new commitments or resource implications.

DISCUSSION:

For FY 2024, the EP program's activities continued to lead and support agency readiness for the licensing and oversight of new technologies and implementation of innovative approaches to engage key stakeholders. In conducting its work, the staff continued to actively support pre-application engagements, high-priority rulemaking efforts, and guidance development to support efficient regulation of current and future technologies.

Operating Reactor Fleet

The staff made strides in the development and implementation of significant programmatic enhancements in EP for the current operating fleet. These enhancements support the agency's commitment to efficient regulation using risk-informed decision-making for licensing and oversight.

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Notable examples of accomplishments that increased reliability and clarity of EP for the operating fleet include:

- Completed a successful pilot for a new performance indicator to support transition from the Alert and Notification System performance indicator to the Emergency Response Facility and Equipment Readiness performance indicator. This proactive initiative reinforces reliability by facilitating early testing and implementation to support licensees and State organizations' transition from sirens to a modern Integrated Public Alert and Warning System (IPAWS). The staff assessed the results of the pilot by reviewing the Performance Indicator data which showed the successful demonstration of a seamless transition of those plants that were already using IPAWS. The new performance indicator will be in effect for the second quarter of FY 2025.

- Continued to revise the EP finding significance determination process risk-informed methodology as stated in SRM-SECY-22-0089 (Agencywide Documents Access Management System Accession No. ML23040A378). Completion of revised procedures and implementation of the new significance determination process and associated training for EP inspectors is planned for calendar year (CY) 2025.

- Completed the review of a major license amendment request to implement common emergency plans for multiple sites for efficient fleet emergency plan management. This is an example of the staff implementing innovative, evidence-based proposals and engaging stakeholders effectively to complete its licensing reviews.

- Continued the on-going review of proposed changes to the emergency plan for the Palisades Nuclear Plant in support of its planned restart. Routinely engaged with stakeholders and partner agencies such as the Federal Emergency Management Agency (FEMA) to ensure that offsite organizational responsibilities are considered in the staff's review.

- Leveraged frequent public stakeholder engagements with industry working groups to complete the technical reviews of two Nuclear Energy Institute (NEI) white papers that proposed enhanced emergency action level schemes and remote response approaches for certain emergency plan functions. Staff intends to make a final endorsement decision of the white papers in CY 2025.

Advanced Reactors and Technologies

Staff supported agency progress in advanced reactor licensing and related high-priority rulemakings. The EP program focused on several activities, including early pre-licensing engagements with potential advanced reactor and new technology applicants and stakeholders. The staff continued to meet the requirements in the Nuclear Energy Innovation and Modernization Act (NEIMA), to use risk-informed and performance-based evaluation techniques to incorporate efficiencies into the licensing process. The staff are well-positioned to implement new requirements in the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act of 2024.

Notable examples of accomplishments in increasing efficiency, clarity, and reliability for advanced reactors and new technologies for EP include:

- Continued to implement the new technology inclusive EP rule in the recently codified Title 10 of the *Code of Federal Regulations* (10 CFR) section 50.160, "Emergency preparedness for small modular reactors, non-light water reactors, and non-power production or utilization facilities," through multiple licensing and pre-application activities. The staff is actively engaged in EP topical report reviews, licensing reviews, and pre-submittal discussions implementing the new rule.

- Supported the issuance of the proposed Part 53 rule, "Risk-Informed, Technology Inclusive Regulatory Framework for Advanced Reactors" (89 FR 86918; October 31, 2024) that enhances the use of risk-informed and performance-based evaluation techniques, including for EP. The proposed rule leverages the EP framework in 10 CFR 50.160.

- Supported the draft proposed rule on the Regulatory Framework for Fusion Machines. Staff engaged stakeholders on EP issues related to fusion and developed draft guidance for EP with the rulemaking.

- Modernized the EP training and qualification program to enable staff to further develop technical skills for efficient licensing and inspection of advanced technologies.

Stakeholder Collaboration and International Engagement

Staff proactively engaged with FEMA and other agencies within the Department of Homeland Security (DHS) to ensure robust EP licensing and oversight. Staff also leveraged opportunities in committee memberships, conferences, outreach activities with Federal, Tribal Nations, and State partners to harmonize collaboration and stakeholder engagements related to EP and incident response.

Notable examples of building stakeholder confidence through collaboration and international engagements include:

- Continued to collaborate with several Federal and State government organizations in planning the multi-agency Cobalt Magnet-25 incident response exercise. The large-scale exercise is scheduled for March 2025.

- Signed a memorandum of understanding between DHS/FEMA and the NRC regarding radiological emergency response planning and preparedness (ML24184A043) that establishes a framework for cooperation between the agencies. Staff further instituted the charter for a new FEMA-NRC Tribal working group that was formed to develop policies to engage with Tribal Nations about existing and advanced nuclear facilities. Staff also signed a first-of-a-kind memorandum of agreement with FEMA to institute cross-agency personnel detail assignments that support policy activities of mutual interest.

- Led and supported several efforts within the Federal Radiological Preparedness Coordinating Committee (FRPCC), including developing a new FRPCC charter and FY 2025 work plan, launching a potassium iodide subcommittee to evaluate Federal recommendations for existing and new reactors, and leading interagency preparedness for advanced reactors. Staff also initiated and obtained unanimous approval from the FRPCC to partner with DHS to develop guidance for State, Local, Tribal, and Territorial governments for use in emergency planning for advanced reactors.

- Published a novel interagency report providing insights on effective use of heating, ventilating, and air-conditioning systems during a radiological emergency (ML24250A059). Staff collaborated with the DHS Science and Technology Directorate, and the National Urban Security Technology Laboratory to publish the report.

- Collaborated with interagency subject matter experts for EP and radiological safety on topics including the use of artificial intelligence in EP, the emergence of fusion machines, and outreach to Tribal Nations. Staff also engaged stakeholders at the Conference of Radiation Control Program Directors, the National Radiological Emergency Preparedness Conference, the Department of Energy's Emergency Management Symposium, and the Health Physics Society annual meeting.

- Hosted a semi-annual tri-lateral meeting with the United Kingdom's Office for Nuclear Regulation and Canada's Canadian Nuclear Safety Commission focused on regulating small modular reactors and other new technologies. Staff presented on risk-informed, performance-based EP approaches to various groups including the Nuclear Energy Agency within the Organization for Economic Co-operation and Development, the National Council on Radiation Protection and Measurements, and International Atomic Energy Agency (IAEA). Staff supported the first IAEA consultancy meeting on emergency preparedness and response for small modular reactors. Staff also served as lead on various domestic and international committees, including IAEA's Emergency Preparedness and Response Standards Committee and as competent authority to the IAEA's Incident and Emergency Centre.

CONCLUSION:

The NRC's EP program satisfied priorities in FY 2024 that directly supported the NRC's mission and strategic plan. The staff demonstrated leadership in the safe licensing and oversight of operating reactors and the anticipated deployment of advanced reactor technologies. The EP program's activities consistently aligned with the NRC's Principles of Good Regulation and proactively considered innovative approaches and collaboration with stakeholders to influence results. The EP program is well-positioned to continue supporting agency policy and direction to license advanced technologies while maintaining the effective oversight and licensing activities for existing licensees. The staff is actively working to address the provisions of the ADVANCE Act. The staff will continue to seek out, foster, and build collaborative partnerships to support effective EP activities.

COORDINATION: The Office of the General Counsel reviewed this paper and had no legal objections.

Craig Erlanger Signed by Erlanger, Craig on 12/23/24

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SUBJECT: ANNUAL UPDATE ON THE STATUS OF THE EMERGENCY PREPAREDNESS PROGRAM, DATED: DECEMBER 23, 2024

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