



# **POLICY ISSUE**

## **(Information)**

December 29, 2022

SECY-22-0115

**FOR:** The Commissioners

**FROM:** Mirela Gavrilas, Director  
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**SUBJECT:** ANNUAL UPDATE ON THE STATUS OF THE EMERGENCY  
PREPAREDNESS AND INCIDENT RESPONSE PROGRAM

**PURPOSE:**

The purpose of this paper is to provide the Commission with the results of the annual assessment of the U.S. Nuclear Regulatory Commission's (NRC) emergency preparedness (EP) and incident response (IR) programs for fiscal year (FY) 2022. This paper does not address any new commitments or resource implications.

**SUMMARY:**

This paper provides the staff's annual overview of the EP and IR programs for FY 2022. This self-assessment analyzed the objectives and outcomes of the priority work for the year that ensured the successful accomplishment of the mission. Specifically, the paper discusses staff retention, recruitment and development; interagency and international activities; innovation and the use of technology; evidence-based/risk-informed decision making; and results-driven focus areas. The assessment concluded that the EP and IR programs continue to be reliable and effective.

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## DISCUSSION:

The staff assesses the agency's EP and IR programs on an annual basis to ensure alignment with the NRC's strategic security and safety goals. The NRC staff provided the last annual update in November 2021.<sup>1</sup>

### Staff Development, Recruitment, and Retention

Building expertise in EP and IR across all levels of the organization was a priority in FY 2022 due to the significant attrition rates in the preceding years. In FY 2020 and FY 2021, the percentage of employees greater than 60 years of age was higher in the Office of Nuclear Security and Incident Response's (NSIR) Division of Preparedness and Response (DPR) than across the agency. As a result, the staff took actions to pro-actively manage anticipated attrition through aggressive hiring and by enabling opportunities for knowledge management and career development. Throughout FY 2022, DPR filled 13 vacancies, supported 21 rotations, and through creative and persistent hiring efforts expects to be fully staffed by the second quarter of FY 2023.

DPR strategically supported developmental assignments to build coalitions, capabilities and share innovative ideas with NRC offices and regions and interagency partners, as well as developed information technology expertise. The DPR director served a rotation in NRC Region III and a regional branch chief was an acting DPR deputy director. An Office of the Chief Information Office executive and an Office of Nuclear Reactor Regulation branch chief served as acting DPR deputy directors to build information technology competencies and research hybrid IR capabilities in use across government. Additionally, two Region IV staff members rotated to DPR to shadow a senior staff member with responsibilities for Headquarters Operations Center (HOC) information technology readiness. Seeking diversity and regional expertise, a female senior resident inspector was selected for a permanent branch chief position. With respect to interagency partnerships, DPR is in the final stages of signing a memorandum of agreement with the Federal Emergency Management Agency (FEMA) to share staff in a rotational capacity, and one IR staff member completed a 6-month assignment to the National Nuclear Security Administration. This resulted in staff development and mutual awareness of IR and information technology capabilities between the two agencies to include radiological monitoring/assessment, radiological assistance, and aerial monitoring, while supporting a regional assignee for their backfill.

In collaboration with staff from multiple NRC offices, DPR conducted the agency's first virtual hiring session in support of the agency's hiring initiative (#HIRENRC!) to fill EP specialist vacancies. There were 548 registered participants and 120 attendees. The staff provided an overview of the NRC, employee benefits, equal employment opportunity and diversity programs, NRC culture, and EP specialist job functions. This novel approach will be used by #HIRENRC! to plan additional sessions to support future agency hiring needs. As a result of this success, two subsequent job postings in DPR received more candidates than previous postings.

Hiring for Headquarters Operations Officers (HOO) is historically difficult and given the nature of shift work, the position has seen especially high attrition (over 20% annually). With the internal

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<sup>1</sup> SECY-21-0092 (Agencywide Documents and Management System (ADAMS) Accession No. ML21274A015), "Annual Update on the Status of Emergency Preparedness and Incident Response Programs' Activities"

applicant pool declining over the last few years, the staff took specific and proactive actions such as over hiring and using the direct hire process to maintain the HOO rotor. This year the staff hired four HOOs, while three HOOs and three Headquarters Emergency Response Officers completed the qualification program. Staff also sought to expand the HOO backup pool, which is a ready cadre of employees who, despite moving to other positions for career development, are willing and able to serve in the event of HOO absences. By the end of FY 2022, seven staff were included in the pool, resulting in a larger than normal capacity that enabled coverage for all HOO shifts. Additionally, implementation of a group leader position helped to support this dynamic and complicated working environment. This new position provides the leadership that ensures that new HOOs qualify quickly, realigns resources when there is attrition, and enables HOOs to contribute to (additional) mission work such as licensing actions and transformation initiatives.

### Innovation and Use of Technology

The staff made a concerted and strategic effort to seek opportunities and tools to enhance the information technology interface and ability to bolster the efficiency of the IR program. By building capacity in the program and leveraging the creativity of our people, the agency can best ensure our mission essential function in the national response framework is achieved.

The agency will be making impactful decisions regarding the HOC in FY 2023, and the staff focused efforts this year to plan for the use of the HOC. With an impending lease expiration for 3WFN and the HOC being the primary NRC tenant in 3WFN, staff from multiple offices and across business lines partnered with DPR to review, evaluate, and envision updates to the current IR requirements (space, technologies, and processes) based on mission and business drivers for the HOC. The process assessed and planned the optimization of remote functions, examined the integration of technology to produce efficiencies in productivity, and developed requirements for space planning while considering current and future agencywide multi-purpose use of the HOC. To ensure funding for mission-critical systems that provide communication and data sharing platforms and allow the retention of knowledge for this very specialized system, the staff updated the 5-year Operations Center Information Management System contract (\$13M) that included a provision for a subject matter expert to ensure key personnel can swiftly develop solutions to meet HOC information technology needs.

In collaboration with the Office of Nuclear Reactor Regulation and Office of the Chief Information Office to build upon the staff's risk-analysis to enable more efficient event notifications under Title 10 of the *Code of Federal Regulations* (10 CFR) 50.72, "Immediate notification requirements for operating nuclear power reactors," the staff launched Mission Analytics Portal, External (MAP-X), which will allow licensees to electronically submit NRC Form 361, "Event Notification Worksheet." This voluntary electronic form improves organizational effectiveness by simplifying communication and data management.

By conducting 12 joint regional and headquarters exercises and working through the challenges of remote and/or hybrid response resulting from the COVID-19 public health emergency, the staff demonstrated the effectiveness of incorporating Microsoft Teams to support integration of in-person and remote response. This is especially important during the early part of an event and leveraged the agency's increased virtual connection capabilities and flexibilities to enable responders to immediately engage in communication and data sharing. Additionally, a comparison of the event activation at the end of FY 2021 (Hurricane Ida) to FY 2022 (Hurricane

lan) demonstrated improvements with information gathering, coordination, and use of Teams and HOC information technology systems.

### Evidence-Based, Risk-Informed Decision Making, and Results-Driven Focus Areas

As a preparedness and response organization, DPR found that the use of an evidence-based and risk-informed analysis to drive resolution of technical issues ensures priority activities such as rulemakings, support for major licensing activities, and communication results in clear and lasting regulatory outcomes.

DPR made significant contributions to the issuance of rulemaking actions for decommissioning, small modular reactors, and advanced reactors that, if finalized, would result in a modernized EP policy:

- Delivered a risk-informed, technology-inclusive draft final rule<sup>2</sup> to the Commission that would establish an alternative set of EP requirements for small modular reactors and other new technologies that affords the same level of protection for public health and safety as current EP requirements.
- Delivered to the Commission a draft proposed rule on the alignment of existing licensing processes for new reactors that incorporates lessons learned from recent licensing actions to increase the efficiency and consistency of EP licensing and oversight to include, among other things, the commencement of the 8-year exercise cycle following receipt of the 10 CFR 52.103(g) finding.
- Issued and solicited public comments on the integrated nuclear power reactor decommissioning proposed rule,<sup>3</sup> which would provide a graded approach to EP.
- Submitted a recommendation to the Commission to pursue rulemaking to assess in detail a petition for a rulemaking proposal to ensure that the protective actions taken in the event of a general emergency “will most likely do more good than harm,” considering the health hazards of both radiation exposure and the protective actions.

DPR supported multiple licensing business lines and regional inspectors in the completion of several licensing and oversight activities:

- Conducted an analysis for Commission consideration to modify the EP Significance Determination Process with an approach that would provide a consistent risk-informed approach to evaluate the significance of EP inspection findings.<sup>4</sup>
- Began the decennial review of all nuclear power reactor licensees’ evacuation time estimates using the risk-informed guidance<sup>5</sup> developed in FY 2021.
- Supported advanced reactor licensing reviews including the Kairos-Hermes construction permit emergency plan review, the NuScale topical report on emergency planning zone sizing methodology, and pre-submittal audit for the Abilene Christian University Research Reactor construction permit application.

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<sup>2</sup> SECY-22-0001 (ADAMS Accession No. ML21200A055), “Final Rule: Emergency Preparedness Requirements for Small Modular Reactor and Other New Technologies”

<sup>3</sup> ["Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning"](#)

<sup>4</sup> SECY-22-0089 (ADAMS Accession No. ML22189A201), “Recommendation for Enhancing the Emergency Preparedness Significance Determination Process for the Reactor Oversight Process”

<sup>5</sup> NUREG/CR-7002 (ADAMS Accession No. ML21013A504), “Criteria for Development of Evacuation Time Estimate Studies”

- Used a risk-informed analysis in a paper for Commission consideration that will enable a licensee to relocate its common emergency operations facility to better support response programs.<sup>6</sup>

Finally, the staff sought to enhance communications and coordination in incident response by developing processes and incorporating lessons learned from response activities:

- Completed all EP- and IR-related milestones in support of the 10 CFR 52.103(g) finding for Southern Nuclear Operating Company Inc., Vogtle Electric Generating Plant, Unit 3, including development of a technology-neutral process for emergency responses data system implementation, setup, and testing protocol<sup>7</sup> to enable a reliable data connection between AP1000 designs and the NRC.
- Updated the NRC's continuity of operations program and pandemic plans and procedures to reflect lessons learned from the COVID-19 public health emergency and the FY 2021 continuity of operations exercise and conducted for the FY 2022 Eagle Horizon exercise using these insights.
- Built stronger coalitions with the Offices of Public Affairs and Congressional Affairs through conduct of exercises and training sessions to ensure modern communication approaches are used and effective communication is conducted with the public, Congress, and the White House.
- Based on lessons learned from the Hurricane Ida activation and response, the HOOs have demonstrated enhanced ownership of the activation process and effectively led decisionmakers to prompt and effective activation decisions in seven decision-maker calls.<sup>8</sup>

### **Interagency and International Partnerships**

The staff sought to strengthen relationships and technical positions with interagency partners and international colleagues to advance NRC policy development. In particular, the staff further strengthened the relationship with FEMA and strategically influenced international policy in advanced reactor and EP and response, most notably with France.

#### **Interagency**

- Coordinated key messages and a joint U.S. position with FEMA<sup>9</sup> on hazard assessment, emergency planning zone methodology, and offsite EP and response during an International Atomic Energy Agency (IAEA) meeting on Next Generation Reactors.
- Presented with other Federal agencies, including FEMA, at the National Radiological Emergency Preparedness Conference.
- Participated in several interagency policy committees to influence national-level policies in safety, security, and response.
- Presented on "Risk-Informed Protective Action Strategies" and "Performance-Based EP and Planning for Small Modular Reactors and Other New Technologies" during the annual Conference of Radiation Control Program Directors.

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<sup>6</sup> SECY-22-0090 (ADAMS Accession No. ML22265A133), "Duke Energy Request to Relocate the Emergency Operations Facility"

<sup>7</sup> NUREG-1394 (ADAMS Accession No. ML22244A081), "Emergency Response Data System Implementation, Rev. 2"

<sup>8</sup> In addition to activation for Hurricane Ian, six unusual events were declared in FY 2022.

<sup>9</sup> ADAMS Accession No. ML21288A484, "Hazard Assessment to Risk-Inform Emergency Preparedness"

- Progressed on an update to the 2015 FEMA/NRC memorandum of understanding, expected in FY 2023.<sup>10</sup>
- Developed a joint FEMA/technical hazards division and NSIR/DPR strategic plan.
- Developed an NRC/FEMA memorandum of agreement for an interagency detail.
- Conducted intentional outreach with FEMA, the Environmental Protection Agency, and the National Nuclear Security Administration senior leaders, including at the office director level.
- Sought insights on virtual and hybrid response policies and approaches with several interagency partners.

### International

- Hosted a foreign assignee from Argentina and continued active participation in the IAEA Standards Committee for Emergency Preparedness.
- Conducted three convention exercises with the IAEA Incident and Emergency Center that demonstrated our collective ability to exchange technical information in an event, including observation of an exercise at the United Arab Emirates.
- In support of two treaties,<sup>11</sup> participated with the Office of Public Affairs in the Competent Authorities meeting and met with counterparts at the IAEA Incident and Emergency Center.
- With France, observed a nuclear plant exercise, participated in a multiday technical exchange with Institut de Radioprotection et de Sûreté Nucléaire on the advancement of information technology, response tools, and communications capabilities, met with the Nuclear Energy Agency and the French Nuclear Safety Authority to discuss advanced reactor EP, built a coalition and influenced the outcomes of the Nuclear Energy Agency-Organisation for Economic Co-operation and Development initiative on non-radiological health impacts in support of NRC policies to do more good than harm, as well as partner on policies for emergency planning for small modular reactor and other new technologies, and engaged in the Nuclear Energy Agency's working group on non-radiation health effects.
- Strengthened communication and consensus building with Canada and the United Kingdom to coordinate on small modular reactor and emergency planning zone stance by proactively sharing key messages through a trilateral discussion in advance of the IAEA International Conference on the Development of Preparedness for National and International Emergency Response and the IAEA technical meeting on Next Generation Reactors and EP and response.
- Facilitated a trilateral workshop with the Canadian Nuclear Safety Commission and the United Kingdom's Office of Nuclear Regulation that provided a forum for sharing regulatory perspectives with a focus on advanced reactors and small modular reactors.

### CONCLUSION:

The NRC's EP and IR programs satisfied priorities in FY 2022 that directly supported the NRC's mission and strategic plan. The staff continues to demonstrate its ability to maintain a stable and predictable EP program, as well as a reliable and effective IR program. Furthermore, the staff

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<sup>10</sup> Currently undergoing review by both agencies, but will include revisions to address the sharing of information for new license applications, etc.

<sup>11</sup> Convention on Early Notification of a Nuclear Accident and Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

continues to maintain and enhance the NRC's readiness to respond to events at licensee facilities and to support international emergencies. The NRC is capable of fulfilling its responsibilities in the national response structure.

COORDINATION:

The Office of the General Counsel reviewed this package and has no legal objection.

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ANNUAL UPDATE ON THE STATUS OF THE EMERGENCY PREPAREDNESS AND INCIDENT RESPONSE PROGRAM DATED: December 29, 2022

**ADAMS Accession No: ML22332A403**

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