

## **Fiscal Year 2020 Significant Accomplishments**

**Objective 1:** Ensure the adequacy of the U.S. Nuclear Regulatory Commission's (NRC) capabilities to respond to accidents and ensure radiation safety for safety or security events at licensed facilities by maintaining the readiness of the Headquarters Operations Center (HOC) and response organizations in the incident response (IR) program.

The NRC conducted six reactor licensee emergency preparedness (EP)/IR table-top exercises, one full virtual response exercise, one limited virtual response exercise to support the development and implementation of the Incident Response Reorganization Project (IRRP), and two international-focused virtual exercises with the International Atomic Energy Agency (IAEA).

- Tabletop 1 - Region 4 & HQ: 2/18/2020
- Tabletop 2 - Region 1 & HQ: 2/19/2020
- Tabletop 3 - Region 3 & HQ: 2/24/2020
- Tabletop 4 - Regions 2, 3, & HQ: 2/27/2020
- Tabletop 5 - Region 2 & HQ: 3/3/2020
- Tabletop 6 - Region 1 & HQ: 3/10/2020
- Full Virtual Response - Perry Exercise: 9/15/2020
- Limited Virtual response exercise - North Anna Exercise: 8/18/2020
- International Exercise 1 - The IAEA Convention on Early Notification of a Nuclear Accident Exercise (ConvEx) 2a: 5/19/2020
- International Exercise 2: - The IAEA ConvEx 2b: 8/25/2020

In late 2019, the Federal Emergency Management Agency (FEMA) conducted its Biennial Continuity Assessment of the NRC's Continuity of Operations (COOP) program to evaluate its ability to meet the requirements in the Federal Continuity Directive 1.<sup>1</sup> On June 2020, the NRC received its results in which it received a high comprehensive capability score. The staff continues to gather and evaluate lessons learned from the agency's response to the coronavirus disease 2019 (COVID-19) public health emergency (PHE) and plans to incorporate updates, as appropriate, in future NRC COOP and Pandemic Plans updates.

**Objective 2:** Ensure safety and security considerations are appropriately integrated and reflected in EP licensing activities and communicate expectations to applicants.

The NRC staff appropriately integrated safety and security considerations and risk-informed decisions through the conduct of and meeting all milestones for numerous EP licensing activities. Significant activities included:

- Supported licensing efforts to consolidated and/or eliminate redundant EP-related ITAAC, as well as re-evaluation of EP-related targeted ITAAC to relieve regulatory burden on licensee and inspection burden on Region 2 for the licensing of Vogtle Electric Generating Plant Unit 3.

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<sup>1</sup> U.S. Department of Homeland Security, Federal Emergency Management Agency Federal Continuity Directive 1, "Federal Executive Branch National Continuity Program and Requirements," issued January 17, 2017 (ADAMS Accession No. ML17263A481)

- Completed technical review of EP aspects and development of final safety evaluation report in support of the Commission approval of the NuScale Design Certification.
- Supported acceptance review of EP aspects of proposed Oklo Power Custom Combined License Application.
- Commission approval of decommissioning-related exemptions from EP requirements for the Three Mile Island Nuclear Station.
- Approval of license amendment requests to provide risk-informed enhancements to licensee emergency response organization staffing.
- On May 14, 2020 and September 2, 2020, the NRC staff issued a letter and an addendum,<sup>2</sup> respectively, to the nuclear industry regarding a process for licensees to efficiently request exemption from certain EP requirements (i.e., conduct of onsite biennial EP exercises) to support licensee actions taken to address the COVID-19 PHE.

**Objective 3:** Maintain and further risk-inform a stable and predictable EP regulatory infrastructure for licensing, oversight, and rulemaking.

The NRC staff achieved this objective through its interactions with Federal, State, Tribal, and local organizations, the nuclear industry, and members of the public to assess any necessary change in approach to the EP program, in keeping with the Principles of Good Regulation.

The staff maintains a predictable EP regulatory infrastructure by ensuring that milestones for licensing actions, as described in Objective 2, and rulemakings are met or exceeded. On May 12, 2020, the staff published the Emergency Preparedness for Small Modular Reactor (SMR) and Other New Technologies (ONT) proposed rule and draft regulatory guidance in the *Federal Register* for public comment. A public meeting was held on June 24, 2020, and the staff has conducted outreach on several occasions with members of the Federal Radiological Preparedness Coordinating Committee to enable common understanding of the proposed rule.

Consistent with the NRC's policy on the use of potassium iodide (KI) in emergency preparedness and response, the NRC continues to work with States on an ongoing basis to replenish KI supplies for use as a supplement to public protective actions within the 10-mile emergency planning zones (EPZ) around nuclear power plants. In fiscal year (FY) 2020, the NRC completed the ordering and distribution of approximately 10.6 million KI tablets to replenish the KI stockpiles for 15 States that were due to expire between December 2019 and April 2020. Currently all orders for States requesting replenishment have been placed. The next KI replenishment is not expected until CY 2024.

Additionally, as part of the continuing efforts to maintain and risk-inform EP regulatory infrastructure and oversight of the EP program, the staff implemented numerous initiatives during this time period, to include:

- The NRC staff, working with industry, developed new performance indicator (PI) criteria to meet the regulatory requirements for conducting periodic EP program reviews at a 24-month frequency as allowed by 10 CFR 50.54(t)(1)(ii). The staff will include the PI criteria in an upcoming revision to Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," currently under development.
- The NRC staff received and reviewed several Reactor Oversight Process (ROP) and EP FAQs (2020-02 and 20-04) related to current emergency plan (EPlan) communications

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<sup>2</sup> ADAMS Accession Nos. ML20120A003 and ML20223A152, respectively.

- systems and future enhancements for crediting automated notifications in the ROP Drill and Exercise Participation PI.
- The NRC staff re-imagined the EP inspector qualification training program and revised the week-long course to consist of focused EP programmatic advanced modules. The revised program includes a comprehensive systematic approach to the oversight of EP.
- The NRC staff created an online, self-paced course on NRC EP fundamentals. Upon completion of the course, NRC staff and other Federal employees will have a high-level familiarity of NRC's EP program and requirements for commercial nuclear power plants.
- In support of the lessons learned 10 CFR Parts 50 and 52 rulemaking effort, staff developed a draft regulatory basis for several areas within the new reactor EP licensing process, including clarification of the requirements for a new reactor to conduct an exercise on a site with an operating reactor, EPlan change applicability during the licensing process, and clarification on siting criteria and FEMA consultation.
- To better risk-inform the regulations and guidance for protective action strategies, Office of Nuclear Security and Incident Response (NSIR) staff initiated a study with the Office of Research under user need request NSIR-2017-002 to examine the non-radiological health impacts of evacuations and relocations. The results of this study will be published in a NUREG/CR in early CY 2021. This study will directly support the staff in its evaluation of a petition for rulemaking (PRM-50-123) received on June 1, 2020, to address protective actions during a General Emergency. Specifically, the petitioner requests the NRC amend its regulations and guidance to ensure that protective actions "do more good than harm." On August 31, 2020, the PRM<sup>3</sup> was issued for public comment.

**Objective 4:** Identify enhancements to the EP and IR programs.

In FY 2020, the NRC staff identified, made significant progress on, or fully implemented enhancements to the EP and IR programs.

*EP Program*

On December 23, 2019, the staff issued in the *Federal Register* Revision 2 of NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"<sup>4</sup>, the overarching guidance document for EP. This revision better aligns the NRC's radiological EP programs with FEMA's Comprehensive Emergency Management programs, modernizes the guidance, and incorporates 40 years of lessons learned in EP since the original guidance was published in 1980.

The staff is working to provide timely approaches for the use of new technologies. As an example, the staff is reviewing State and licensee proposals to implement the Integrated Public Alert and Warning System (IPAWS). The staff completed its reviews of two IPAWS applications for use as a primary method in an alert and notification system (ANS) (Wolf Creek and South Texas Project). This initiative is an example of an effective partnership with FEMA, as consideration of the use of IPAWS in ANS schemes is an area in which the agencies' roles intersect.

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<sup>3</sup> 85 FR 53690; Regulations.gov: ID NRC-2020-0155-0003

<sup>4</sup> ADAMS Accession No. ML14246A519

### Incident Response Program

- Incident Response Reorganization Project (IRRP): The IRRP focuses on continued development of enhancements that will better align the IR program with other agencies', implement lessons learned from the Incident Response Exercise Program, and provide transformative improvements that will reduce inefficiencies while concentrating on the IR program's core mission of event assessment and information sharing. The planned changes, expected to be fully implemented in November 2020, provide for a more flexible and scalable response organization and incorporate many components from the Incident Command System, a standard in many Federal, State, and local response organizations. Specifically, in FY 2020, the staff developed response team procedures, conducted general response and team position specific training, and conducted exercises as described in Objective 1 to support the final implementation of the Incident Response IRRP. In addition, the staff implemented the new IRRP communications processes in its response to Hurricanes Isaias and Laura. As a result of the training on these new processes, the agency was well-postured to maintain its response capabilities during PHE restrictions. There has been increased alignment on response functions between headquarters and regional offices, and the Incident Response Program will continue to better utilize resources going forward.
- Incident Response Entity Requirements Review (IRER): The staff established the IRER working group and an Executive Steering Committee to review, evaluate, and update the current incident response requirements (such as space, technologies, and processes) based on mission and business drivers for the HOC, the regional IR Centers, and Sensitive Compartmented Information Facilities. The staff developed a comprehensive list of recommendations to implement virtual incident response capabilities, reassess space requirements, design and management, and leveraged existing agency resources.
- Continuity of Operations (COOP) and Pandemic Plans: The NRC reviewed and updated its Pandemic Plan in March 2020 and completed its annual update of the NRC's COOP Plan in June 2020. The review involved streamlined and clarified roles and responsibilities for NRC pandemic planning, as well as further integration of COOP and pandemic planning information and efficiencies in the review processes for future annual revisions. The staff also completed an update to Management Directive 6.2, "Continuity of Operations Program," on March 2020 that further clarifies agency and office-level roles and responsibilities for implementing the NRC COOP program.

The staff re-evaluated the agency's need for various operational mobile communications to continue to meet Federal requirements. The staff identified the requirements, made recommendations to meet the requirements, and then implemented the changes. These changes resulted in clarifying roles and responsibilities for maintaining and operating the equipment, enhanced maintenance, and improved operational readiness via integration with existing operational processes.

**Objective 5:** Become a modern, risk-informed regulator through development of EP and IR Key Results (KR) that support the agency's transformational Objective and Key Results (OKR) framework.

In FY 2020, NSIR developed the following OKRs that support the agency's OKR framework:

Transformation KR 1: Deliver impactful solutions that meet the near-term goals identified in the Transformation Roadmap and the FY 2020 Office Transformation Plans by September 30, 2020.

- NSIR Objective: Develop framework for risk-informed NSIR activities
- NSIR KR: Develop a concept for technology-neutral licensing structure for EP for SMRs/ONTs

The NRC staff's activities are discussed in detail in Objective 3.

Transformation KR 2: Free staff time to support better quality and more timely decision-making by each office improving at least three processes, either programmatic or corporate.

- NSIR Objective: Invest in innovation by using up to 10% of fiscal year resources to optimize licensing, rulemaking, oversight, and/or administrative processes by identifying changes to reduce, eliminate, or modify activities that are inefficient or not necessary to support the NSIR mission. This includes making timelier, more high-quality and Be riskSMART regulatory decisions and pursuing changes that could ultimately lead to both near- and long-term gains.
- NSIR KR: Streamline technological aspects of business processes to enhance efficiency.

To support this KR, initiatives included:

- replacement of the video conferencing system in the HOC Ready Room with the Office of the Chief Information Officer's overall solution for conferencing rooms
- upgrading of projectors to LED obviating need for lamp replacement, and replaced remaining laptops in HOC with thin clients
- reworking the Enterprise Wide Contract project for IT which minimized overall expenses.
- enhancing the staff's use of electronic document reviews and their online presence to increase efficiency and reduce travel costs.

While not specifically defined in the NSIR KR, but in support of the office Objective, one of NSIR's transformational activities included the need to better leverage NRC's interagency and international partners. As part of the NRC's enterprise risk management, the staff has identified the potential risks associated with FEMA's differing perspectives on several matters, including the EPZ sizing for advanced reactor designs and in the reduction of offsite EP requirements during decommissioning. The staff has also engaged FEMA with respect to licensee biennial onsite and offsite exercise exemptions prompted by the COVID-19 PHE. FEMA is working closely with State and local officials to assess any impact of COVID-19 response on radiological emergency preparedness including the conduct of response capabilities assessments to document FEMA evaluations. The NRC staff has been working closely with FEMA to address their concerns with the NRC exemption process. The NRC staff and management continue to maintain a highly professional relationship with FEMA peers. The staff continues interactions with FEMA and other Federal partners on risk-informing EPZ sizing. The NRC will continue to focus on presenting the NRC's views to all stakeholders and will continue to work to reach common ground with FEMA, consistent with the NRC's Principles of Good Regulation, where opportunities are present.