



POLICY ISSUE **(Information)**

October 31, 2018

SECY-18-0109

FOR: The Commissioners

FROM: Brian E. Holian
Office of Nuclear Security and Incident Response

SUBJECT: ANNUAL UPDATE ON THE STATUS OF EMERGENCY
PREPAREDNESS AND INCIDENT RESPONSE PROGRAMS'
ACTIVITIES

PURPOSE:

The purpose of this paper is to update the Commission on the U.S. Nuclear Regulatory Commission (NRC) emergency preparedness (EP) and incident response (IR) programs' significant accomplishments and activities for fiscal year (FY) 2018, and to provide an assessment of the NRC's EP and IR programs with a focus on current and projected activities. This paper does not address any new commitments or resource implications.

BACKGROUND:

In the staff requirements memorandum to SECY-07-0182, "Semi-Annual Update on the Status of Emergency Preparedness Activities," dated December 21, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML073550647), the Commission provided the following direction:

The annual paper should become more of a self-assessment and communication tool, perhaps summarizing accomplishments and providing a status on improvement initiatives within our EP programs. Such an assessment should be coordinated with and not overlap the Reactor Oversight Process self-assessment of the EP cornerstone, and should be designed to aid the staff in effecting continuous and coordinated improvements to the overall EP program, as well as to inform the Commission and the public of progress.

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Consistent with the Commission's direction, this paper provides a summary of FY18 accomplishments, FY19 priorities, and a self-assessment aligned with the NRC's strategic security and safety goals. The paper also describes ongoing improvements consistent with the NRC's transformation and improvement initiatives.

DISCUSSION:

Emergency Preparedness Program

The objective of the EP program is to ensure that nuclear power plant licensees are capable of implementing adequate measures to protect public health and safety in the event of a radiological emergency. As a condition of their licenses, licensees of nuclear power plants must develop and maintain emergency plans that meet comprehensive NRC EP requirements.

During FY18, the staff's work in EP focused to a significant extent on licensing and rulemaking activities related to decommissioning, small modular reactors (SMRs), and other new technologies (ONTs). The NRC continues to review amendment and exemption requests to change emergency plans as plants enter decommissioning. In light of the number of licensees deciding to permanently cease operations, and at the direction of the Commission, the staff has undertaken rulemaking to amend the regulations related to decommissioning of production and utilization facilities, including those governing EP. Specifically, the staff issued a regulatory basis document in November 2017 (ADAMS Accession No. ML17215A010) and delivered a proposed rule to the Commission for approval in May 2018 (SECY-18-0055, ADAMS package number ML18012A019). The proposed rule provides a technical basis and a regulatory framework for a graded approach to EP commensurate with the decrease in radiological risk over time at a decommissioning facility. The proposed rule is generally consistent with EP exemptions that have been approved for nuclear power plants in decommissioning.

The staff is also developing a proposed rule for EP for SMRs and ONTs to facilitate the licensing and operation of future types of facilities. The proposed rule is based on a risk-informed and performance-based approach that would provide for an alternative EP regulatory framework for SMR and ONT applicants and licensees that would continue to ensure reasonable assurance that adequate protective measures can and would be implemented in a radiological emergency. The proposed rule is scheduled to be submitted to the Commission in October 2018.

The enclosure provides a summary of the significant FY18 accomplishments in the EP program and FY19 planned activities.

Incident Response Program

The mission of the IR program is to rapidly respond to safety- or security-related events involving NRC-licensed facilities and materials. The IR program also monitors activities that are integrated into the overall NRC capabilities for the response to radiological incidents and emergencies involving facilities and materials regulated by the NRC or an Agreement State. An inherent aspect of this mission is the NRC's ability to maintain coverage of its Primary

Mission Essential Function (event response), as outlined in the NRC's Continuity of Operations Plan. Under Federal guidelines (e.g., Presidential Policy Directive 8, "National Preparedness;" the National Response Framework; and the Nuclear/Radiological Incident Annex to the Response and Recovery Federal Interagency Operational Plans), the NRC will coordinate with other Federal, State, and local emergency response organizations in response to various types of domestic events. The Headquarters Operations Center (HOC) and the regional incident response centers (IRC) will disseminate information and coordinate response activities depending on where a radiological event occurs and serve as the coordination and communication hubs for the NRC. Depending on the significance and nature of an event, the HOC and IRCs are staffed with NRC specialists to evaluate event information, independently assess the potential impact on public health and safety, and evaluate possible recovery strategies.

The NRC routinely participates in interagency working groups and policy coordinating committees to coordinate and provide perspectives on the NRC's interests, within the national framework, specifically with respect to roles and responsibilities during radiological incidents.

During FY18, the staff's work in IR largely focused on implementation of improvements to the operations officers program, participation in the National Level Exercise/Eagle Horizon 2018 (NLE/EH2018), and implementation of NRC hurricane response lessons-learned.

The enclosure provides a summary of the significant FY18 accomplishments and FY19 planned activities in the IR program.

Self-Assessment

The NRC's EP and IR programs and activities continue to align with the agency's strategic security and safety goals. The NRC's FY18 EP and IR programs' performance was assessed using the following four objectives:

- 1) Ensure the NRC emergency response capabilities for safety or security events at licensed facilities by maintaining the readiness of the HOC and response organizations in the IR Program.
- 2) Ensure safety and security considerations are appropriately integrated and reflected in EP licensing activities and communicate expectations to applicants.
- 3) Maintain a stable and predictable EP regulatory infrastructure for licensing, oversight, and rulemaking.
- 4) Identify enhancements to the effectiveness and efficiency of the EP and IR programs' support to accomplish the NRC's mission.

Objective 1 is associated with the event response and training product lines. Successful demonstration of objective 1 is reflected in the staff maintaining response team qualifications and HOC/IRC response availability; annual participation in EP/IR response exercises that involve a wide array of Federal, State, and local authorities; and overall maintenance of cooperative intergovernmental relationships to ensure NRC roles and responsibilities are considered in national resilience programs. Activities that demonstrate successful implementation of objective 1

include: maintaining 98-percent of designated responders fully qualified for the various IR teams by conducting three evaluated reactor licensee EP/IR exercises each year; participating in the NLE/EH2018; and interagency coordination on the review of the 2018 National Preparedness Report. In addition, based on lessons-learned from the 2017 hurricane season, the NRC coordinated with the Federal Emergency Management Agency (FEMA) to revise Inspection Manual Chapter (IMC) 1601, "Communication and Coordination Protocol for Determining the Status of Offsite Emergency Preparedness." This revision clarified roles and responsibilities for NRC and FEMA. The NRC has implemented this revised IMC for the 2018 hurricane season, and will continue to assess its effectiveness.

Objectives 2 and 3 are associated with the licensing, oversight, and rulemaking product lines. Successful demonstration of both objectives is reflected in the staff's ability to complete technical evaluations of EP submittals for fuel cycle facilities, operating reactors, new reactors, and non-power reactors; and technical reviews of licensees' EP exemption requests and license amendment requests associated with existing emergency plans and emergency action level scheme changes for permanently defueled decommissioning sites. All of these licensing actions exceeded the 85-percent timeliness and quality licensing action NRC wide performance indicator. 100-percent of the NSIR EP licensing actions for fuel cycle facilities, operating reactors, new reactors, and non-power reactors were completed ahead of schedule. Successful performance is also reflected in recent rulemaking activities such as submitting to the Commission for approval the decommissioning proposed rule package discussed above, and timely development of the EP for SMRs and ONTs proposed rule package.

Objective 4 includes accomplishment of, or progress on, numerous improvement initiatives. During FY18, as noted above, the staff submitted or substantially completed work on two proposed rules intended to improve both effectiveness and efficiency of EP-related licensing activities. The first revision in over 30 years to NUREG-0654/FEMA-REP-1, the overarching guidance document for EP, will be issued in the near term. The NRC and FEMA updated this guidance document in 2012 to reflect current regulations (including the 2011 NRC EP final rule) and to integrate nearly 35 years of lessons-learned in the EP program. One important aspect of this revision is that it will demonstrate better alignment between the radiological EP programs and the Comprehensive Emergency Management Programs or "all-hazards" programs. This enhancement will help ensure that the NRC and licensee programs remain reflective of broader emergency-management concepts that would be employed if there were a nuclear power plant incident with off-site radiological consequences. In addition, the NRC initiated a focused self-assessment on the significance determination process (SDP) for EP-related licensee performance deficiencies, with the objective of determining whether improvements can or should be made to the SDP. The staff expects the assessment to be completed in February 2019 and the results will be summarized in the annual ROP self-assessment SECY paper.

Summary and FY19 Priorities

Overall, the EP and IR programs either have implemented, or are implementing, numerous improvements to already-strong processes and programs. The staff considers both programs to be effective; however, future improvements are possible.

In the IR area, the NRC is developing enhancements to how it responds to events. These improvements are aimed at clarifying responsibilities, simplifying processes, and minimizing duplication that exists in the current organization. The planned changes would provide for a more flexible and scalable response organization, incorporating many components from the Incident Command System, standard in many Federal, State, and local response organizations. In

addition, improvements have been or are being made in various aspects of the 24/7 Headquarters Operations Officer (HOO) function, including improved communication with and among the HOOs; enhanced integration with the Regional Continuity of Operations site; and innovative staffing approaches to help ensure the HOO function is always fully staffed. In addition, the IR staff has worked closely with FEMA, States, and Indian Tribal organizations to effectively enhance communications and response coordination efforts during radiological emergency preparedness (REP) exercises. Such efforts included enhanced outreach and support activities, in coordination with FEMA and State emergency response organizations.

FY19 priorities for EP and IR, which are discussed in more detail in the enclosure, include:

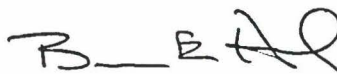
- Continued improvement in effectiveness of NRC's partnership with FEMA on EP and IR
- Implementation of improvements in the EP significance determination process, in close consultation with cognizant region staff and stakeholder feedback
- Continued timely progress in completing decommissioning and SMR/ONT rulemakings
- Timely support for decision-making on licensing documents, including exemption requests for decommissioning reactors, requests to consolidate or relocate emergency operations facilities, and applications for Consolidated Interim Storage Facilities (Holtec International and Interim Storage Partners, LLC)
- Timely, high-quality support for NRC decision-making on the Clinch River Early Site permit
- Timely support for the EP activities being monitored by the Vogtle Readiness Group for the new reactors at the Vogtle site
- Progress in implementing improvements to the NRC's IR process
- Continued improvements in integration of Headquarters and Regional Operations Officer functions
- Continued emphasis on NRC outreach activities with State and Indian Tribal communities with respect to REP programs

CONCLUSION:

The NRC's EP and IR programs have accomplished several activities in FY18 that were in direct support of the NRC's mission and strategic plan. The staff continues to demonstrate an ability to develop and implement a stable and predictable EP program for licensing, oversight, and regulatory infrastructure. Further, the staff continues to participate in IR activities that help to maintain cooperative intergovernmental relationships to ensure that NRC roles and responsibilities are considered and reflected in national resiliency programs, and to ensure the NRC is able to fulfill its responsibilities in the national response structure. In the coming year, the staff will focus on enhancing the NRC and FEMA working relationship, supporting EP-related licensing and rulemaking activities, processing EP decommissioning exemption requests, and continuing to improve the HOO/ROO integration of functions.

COORDINATION:

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

A handwritten signature in black ink, appearing to read "B. E. Holian". The signature is written in a cursive style with a horizontal line under the first name.

Brian E. Holian
Office of Nuclear Security
and Incident Response

Enclosure:
As stated

SUBJECT: ANNUAL UPDATE ON THE STATUS OF EMERGENCY PREPAREDNESS AND INCIDENT RESPONSE PROGRAMS' ACTIVITIES

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Emergency Preparedness Program

The following sections provide an update on the significant fiscal year 2018 (FY18) accomplishments and FY19 planned activities in the emergency preparedness (EP) program. In each of the EP activities described below, the U.S. Nuclear Regulatory Commission (NRC) staff conducted significant government-to-government interactions with the Federal Emergency Management Agency (FEMA).

Emergency Preparedness Decommissioning Reviews

In FY18, the staff completed the review of license amendment requests for the Oyster Creek Nuclear Generating Station (Oyster Creek) and Palisades Nuclear Plant to reduce emergency response organization staffing under the existing regulatory requirements, prior to requested exemptions being granted, based on the permanent transfer of all spent fuel from the reactor vessel to their respective spent fuel pools. Similar amendment requests are also being reviewed for the Pilgrim Nuclear Power Station (Pilgrim) and Three Mile Island, Unit 1 (TMI).

In FY18, the Commission approved specific exemptions from certain EP requirements for the Fort Calhoun Station and Oyster Creek. The exemptions (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML17298A976 and ML18198A449, respectively) were based on the reduced spectrum of credible accidents that can occur at these permanently defueled sites. The exemptions also removed the requirement for the licensees to ensure formal offsite radiological EP plans are maintained.

On July 3, 2018, Entergy Nuclear Operations, Inc. (Entergy) submitted a request for exemptions from portions of Title 10 of *the Code of Federal Regulations* (10 CFR) 50.47 and Appendix E to 10 CFR Part 50 for Pilgrim (ADAMS Accession No. ML18186A635), which is expected to permanently shut down no later than June 1, 2019. In addition, the staff expects to receive a similar request for specific exemptions from certain EP requirements for TMI in December 2018.

Emergency Response Organization (ERO) Staffing and Augmentation Submittals

As part of the industry's continuing efforts to seek greater program efficiencies, in FY18 the staff saw a significant increase in proposed changes to licensee ERO on-shift and augmentation staffing levels and augmentation response times. The staff is currently evaluating submittals for eight Exelon Generation Company, LLC (Exelon) sites, which will align ERO staffing and response under the Exelon Standardized Emergency Plan model. The Exelon submittals also seek NRC approval to remove support positions currently identified in respective site plans, but not required for minimum staffing for emergency response facility activation, which will allow licensees greater flexibility to adjust support staff in the respective implementing procedures, and implement changes without prior NRC approval under 10 CFR 50.54(q)(3).

To facilitate licensee considerations on potential changes to ERO staffing and augmentation times, the staff—in letters to the Nuclear Energy Institute, as well as NextEra and Entergy, dated June 12, 2018 (ADAMS Accession No. ML18157A116 (package))—provided alternate guidance based on the proposed Table B-1, "Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies," that a licensee may voluntarily consider prior to the formal issuance of Revision 2 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Plans and Preparedness in Support of Nuclear

Enclosure

Power Plants.” A licensee will still be required to adhere to 10 CFR 50.54(q) when revising their ERO staffing plans. In FY19, the staff expects a heightened interest in licensees submitting emergency plan changes to implement the enhancements to Table B-1.

Emergency Operations Facility Consolidations/Relocations Requiring Commission Approval

In FY18, the staff evaluated licensee submittals seeking greater program efficiencies by relocating or consolidating their emergency operations facilities (EOFs). These submittals required Commission approval in accordance with Section IV.E.8.b of Appendix E to 10 CFR Part 50, based on these proposed facilities being located more than 25 miles from the nuclear power reactor site.

In the SRM to SECY-18-0013, “Southern Nuclear Operating Company Request to Relocate the Existing Commission-Approved Consolidated Emergency Operations Facility,” (ADAMS Accession No. ML17277A289) the Commission approved the relocation of a consolidated EOF for the Edwin I. Hatch Nuclear Plant – Units 1 and 2, Joseph M. Farley Nuclear Plant – Units 1 and 2, and Vogtle Electric Generating Plant – Units 1, 2, 3 and 4. In addition, in SECY-18-0080, “Dominion Energy Virginia Request to Consolidate the Emergency Operations Facilities for North Anna and Surry Power Stations” (ADAMS Accession No. ML18135A239), the staff requested Commission approval for the relocation of the near-site EOFs for the Surry Power Station – Units 1 and 2, and the North Anna Power Station – Units 1 and 2, to a consolidated EOF, referred to as the Corporate Emergency Response Center. The staff is also expecting to receive a submittal in 2018 from Exelon to relocate the existing near-site EOF for the Calvert Cliffs Nuclear Power Plant – Units 1 and 2 to the existing Exelon Mid-Atlantic Consolidated EOF, currently approved by the Commission for Limerick Generating Station – Units 1 and 2, Peach Bottom Atomic Power Station – Units 2 and 3, and TMI – Unit 1.

Interactions with Federal and State Agencies

Revision 2 to NUREG-0654/FEMA-REP-1

NUREG-0654/FEMA-REP-1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” is a key joint NRC and FEMA guidance document originally issued in November 1980. Both agencies use the document to evaluate the adequacy of radiological emergency plans and preparedness. The NRC evaluates the performance of applicants and licensees, and FEMA evaluates the performance of State, local, and Tribal governments within the emergency planning zones surrounding nuclear power plants.

In 2012, the NRC and FEMA began a major effort to update NUREG-0654/FEMA-REP-1 to reflect current regulations (including the 2011 NRC EP final rule) and to integrate nearly 35 years of lessons-learned in the EP program. One important aspect of the revision of this document is that it will demonstrate better alignment between the radiological EP programs and the Comprehensive Emergency Management Programs or “all-hazards” programs, which are set forth in the National Preparedness Doctrine and supported by the National Preparedness System. This enhancement will help ensure that the NRC and licensee programs remain reflective of broader emergency-management concepts that would be employed if there were a Nuclear Power Plant incident with off-site radiological consequences.

In 2015, the NRC and FEMA achieved a major project milestone by jointly issuing draft Revision 2 of NUREG-0654/FEMA-REP-1 for a 135-day public comment period. The staff received 631 comments from 32 external stakeholders. NRC staff, in coordination with FEMA, adjudicated each comment and revised the document as appropriate. The NUREG has received final concurrence from both agencies, and is currently being reviewed by the Office of Management and Budget in accordance with the Congressional Review Act. The staff expects to issue Revision 2 of NUREG-0654/FEMA-REP-1 by the end of December 2018.

Communication and Coordination Protocol for Determining the Status of Offsite Emergency Preparedness Inspection Manual Chapter 1601 Revision

Inspection Manual Chapter (IMC) 1601, "Communication and Coordination Protocol for Determining the Status of Offsite Emergency Preparedness" (ADAMS Accession No. ML18093A372), was revised in coordination with FEMA to address lessons-learned from Hurricanes Harvey and Irma. The revision focused on: enhancing communications and coordination at the regional level between the NRC and FEMA; ensuring alignment with FEMA's Standard Operating Guide (SOG), "Assessment of Offsite Emergency Preparedness Infrastructure and Capabilities Following an Incident in the Vicinity of a U.S. Nuclear Regulatory Commission-Licensed Nuclear Power Plant"; clarifying NRC authorities regarding requiring a reactor shutdown or precluding a start-up due to deficiencies in offsite infrastructure and response capabilities; and integrating IMC-1601 actions with Incident Response Procedure (IRP) 240, "Natural Phenomena" (ADAMS Accession No. ML16125A314), to avoid redundancy and potential conflicting actions. A joint NRC, FEMA, and industry table-top exercise was conducted on April 12, 2018, to validate proposed changes to both IMC-1601 and FEMA's SOG. The revision to IMC-1601 was implemented on July 1, 2018, and communicated to internal and external stakeholders. Revision to IRP-240, which addresses NRC's internal response to such events, is discussed under the IR section of this enclosure. Staff will continue interactions with FEMA to address lessons-learned from recent hurricanes.

Rulemaking Activities

Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning Rulemaking

In a staff requirement memorandum (SRM) dated December 30, 2014 (ADAMS Accession No. ML14364A111), associated with SECY-14-0118, "Request by Duke Energy Florida, Inc., for Exemptions from Certain Emergency Planning Requirements," dated October 29, 2014 (ADAMS Accession No. ML14219A444), the Commission directed the staff to proceed with an integrated rulemaking on power reactor decommissioning and to consider a graded approach to EP. The Office of Nuclear Security and Incident Response (NSIR) staff worked with the Office of Nuclear Regulatory Research to develop a technical basis for a graded approach to EP, commensurate with the decrease in radiological risk over time during decommissioning. A draft regulatory basis document was issued in the *Federal Register* (FR) for a 90-day public comment period on March 15, 2017 (82 FR 13778), and a public meeting was held May 8–10, 2017, to discuss the draft regulatory basis and obtain feedback from stakeholders. A regulatory basis document was published on November 20, 2017 (ADAMS Accession No. ML17215A010). The staff submitted the proposed rule package, SECY-18-0055, "Proposed Rule: Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning (RIN 3150-AJ59)," to the Commission on May 7, 2018. The proposed rule and associated guidance will be published in the FR for a 75-day public comment period. The

final rule is expected to be submitted to the Commission for vote in 2019.

Emergency Preparedness for Small Modular Reactors and Other New Technologies Rulemaking

In SECY-16-0069, "Rulemaking Plan on Emergency Preparedness for Small Modular Reactors (SMR) and Other New Technologies [ONT]," dated May 31, 2016 (ADAMS Accession No. ML16020A388), the staff requested Commission approval of the schedule for a planned rulemaking on EP for SMRs and ONTs and provided an estimate of the resources required for the completion of this rulemaking. In SRM-SECY-16-0069, "Staff Requirements – SECY-16-0069 – Rulemaking Plan on Emergency Preparedness for Small Modular Reactors and Other New Technologies" (ADAMS Accession No. ML16174A166), the Commission approved the staff's proposed plan and schedule. The staff developed a draft regulatory basis, which was issued in the *Federal Register* for a 75-day public comment period on April 13, 2017 (82 FR 17768), and a regulatory basis, which was issued in the FR on November 15, 2017 (ADAMS Accession No. ML17206A265; 82 FR 52862). The staff developed the draft proposed rule package, which includes the associated draft guidance document, during FY18. The staff met with the Advisory Committee on Reactor Safeguards on August 22, 2018, to discuss the proposed rule package. The proposed rule package is scheduled to be provided to the Commission for approval in October 2018. The proposed rule will be published in the FR for a 75-day public comment period. The final rule is scheduled to be submitted to the Commission for vote in spring of 2020.

Regulatory Guide Development for 10 CFR 50.54(t)

The regulations in 10 CFR 50.54(t) provide licensees the option to conduct focused reviews of their EP programs either annually or at least once every 24 months. If a licensee chooses to adopt the 24-month EP program review option, the licensee must, at least every 24 months, conduct an assessment of performance indicators or review its EP program in response to a change in personnel, procedures, equipment or facilities that potentially could adversely affect EP. This 24-month program review option was an amendment to the Final Rule (April 28, 1999, 64 FR 14814), "Frequency of Reviews and Audits for Emergency Preparedness Programs, Safeguards Contingency Plans, and Security Programs for Nuclear Power Reactors."

To promote a consistent application of the regulations, the staff is developing a regulatory guide to provide acceptable performance indicators for licensees that choose to adopt the 24-month EP program review option provided in 10 CFR 50.54(t)(1)(ii). A public meeting was conducted on July 10, 2018, with the objective of explaining the background of the Final Rule and the plans for moving forward with the guidance document development, including stakeholder involvement. The guidance document is scheduled for publication in September 2019.

Incident Response Program

The following sections provide an update on the significant FY18 accomplishments and FY19 planned activities in the incident response (IR) program.

Key Improvements in Operations Officers Program

During FY18, NSIR's Division of Preparedness and Response (DPR) chartered the Headquarters Operations Center (HOC) Working Group, co-chaired by management and the National Treasury Employees Union, to assess the current Headquarters Operations Officers/Regional Operation Officers (HOO/ROO) shift scheduling process, and to make recommendations for improvements. The working group was formed based on the lessons-learned during the pilot HOO/ROO integration in FY17, and was tasked with specific goals which included (1) efficient resource sharing; (2) maintaining proficiency of staff to support the HOO function; (3) ensuring NSIR and regional counterparts provide mutual support during staffing challenges; and (4) addressing HOO/ROO quality of life issues. In order to address efficient resource sharing, the HOC Working Group recommended an approach that allows for better integration of ROO resources into the HOO shift schedule while reducing the number of overtime shifts that the HOOs would have otherwise covered. This change recommendation was incorporated into a revision of the Operations Center Scheduling Guidance procedure. To clarify expectations for this resource sharing, NSIR formalized the process with its Regional Continuity of Operations site to outline the nature and extent of the resources to be shared between the offices. This effort during FY18 to integrate the ROOs has significantly alleviated HOC staffing challenges observed during FY17. The HOC Working Group subsequently refocused on additional quality of life issues of importance to the HOOs and ROOs.

In addition, staffing for the HOC was the subject of an evaluation by the Office of the Inspector General (OIG) (OIG-18-A-16, ADAMS Accession No. ML18172A159) during FY18. OIG's objective was to determine whether NRC staffing of the HOC adequately supports necessary response and coordination activities in the HOC. The staff has begun to address the OIG recommendations from the report and will continue to do so in FY19. NSIR's ongoing effort, as described above, has already directly addressed some of the specific recommendations in the OIG report.

A related initiative involving consultative services from a firm well versed in safety culture evaluations resulted in a report on opportunities for NSIR to continue to enhance communication and other aspects of safety culture in the HOC. NSIR is developing actions to address the issues identified.

Continuity of Operations (COOP) Annual Update

During FY18, NRC successfully conducted several significant activities related to its COOP program, including a biennial National Level Exercise and FEMA evaluation. NRC management and staff participated in the National Level Exercise/Eagle Horizon 2018 (NLE/EH2018), which focused primarily on fulfilling COOP requirements for a full-scale relocation event. NLE/EH2018 included participation from over 100 NRC senior managers and staff from Headquarters (HQ) and all four NRC Regions, along with 262 other participating organizations including Federal, State, local, and private industry stakeholders. NRC successfully met all NLE/EH2018 interagency and internal objectives, which included a focus on employee accountability, communication with all stakeholders, and validating COOP roles and responsibilities. The

exercise also identified several lessons-learned that the staff plans to incorporate into the next annual COOP plan update, such as enhancing internal processes related to employee accountability and communication with licensees, and rapidly identifying subject matter expertise during a COOP event. The NRC received highly favorable COOP program and exercise evaluations from FEMA. The NRC staff also completed its annual review and approval of the NRC's COOP program, which clarified staff roles and responsibilities related to incident response coordination during a COOP event. The NRC's program received the highest possible score in every category for its COOP program, and 15 of 17 top evaluated scores for the NLE/EH2018 exercise.

NRC Hurricane and Incident Response Preparedness

During late 2017, the NRC's emergency response organization maintained situational awareness of the three major hurricanes (Harvey, Irma, and Maria) that struck the US or US territories. The NRC focused on the hurricanes' effects on NRC-regulated facilities and worked with other Federal, State, local, and international agencies to share information and coordinate response. In FY18, Region II and HQ released a combined after-action report (ADAMS Accession No. ML18003A505) to capture important similarities and lessons-learned across all three hurricanes. These lessons-learned were incorporated into IRP 240, "Natural Phenomena." The changes that were incorporated included integrating additional IMC-1601 actions to improve coordination with FEMA; increasing use of internal NRC resources by including the NRC's External Hazards Center of Excellence, which includes the NRC's meteorologists and enhanced standardized deployment checklists to support NRC employees responding locally and to State emergency operation centers; and adding a "Sample Severe Weather Management Brief Outline." This addition updated the existing outline used during the actual events, to enhance communication within the NRC and in turn with external Federal, State, and local agencies.

During FY18, NSIR/DPR's Coordination Branch built upon an effort begun in FY17 to examine structural challenges in the IR program. A combined regional and HQ working group developed a proposed concept to restructure the IR program to ensure that the program will support the NRC's priorities in real-world circumstances. The project, "Incident Response Reorganization Project," focuses on aligning IR functions and mission, improving command and control during response, minimizing duplicative response efforts, and incorporating key concepts and lessons-learned from other Federal and State response programs, including elements of the National Incident Management System/Incident Command System. Staff continues in developing enhancements and aligning with management on next steps.