UNITED STATES
NUCLEAR REGULATORY COMMISSION
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OFFICE OF THE
INSPECTOR GENERAL

June 15, 2015

MEMORANDUM TO: Mark A. Satorius
Executive Director for Operations

FROM: Stephen D. Dingbaum ***/RA/***
Assistant Inspector General for Audits

SUBJECT: AUDIT OF NRC'S EMERGENCY PREPAREDNESS PROGRAM (OIG-15-A-13)

The Office of the Inspector General (OIG) conducted this audit to (1) assess the U.S. Nuclear Regulatory Commission's (NRC) coordination with external stakeholders to support implementation of new emergency preparedness (EP) requirements codified by recent changes to Title 10, Code of Federal Regulations (10 CFR), Parts 50 and 52, and (2) to assess NRC's plans for managing issues that may hinder implementation of the new requirements. OIG found that NRC conducted appropriate outreach with external stakeholders throughout the agency's 2011 EP rulemaking process, and OIG identified no current issues with implementation of the new requirements. Therefore, OIG makes no recommendations. However, future challenges for NRC EP oversight include rulemaking for decommissioned nuclear power plants, which present different safety and security considerations than operating reactors.

BACKGROUND

The objective of EP is to ensure that nuclear power plant operators are capable of implementing measures to protect public health and safety during a radiological emergency. Nuclear power plant operators must develop and maintain EP plans that meet NRC EP regulatory requirements. NRC establishes these requirements through the rulemaking process, which is conducted in accordance with the Administrative Procedure Act (APA)[1] and the agency's internal guidance.[2]

NRC's EP Oversight and the 2011 EP Rule

Following the September 11, 2001, terrorist attacks, NRC required modifications to nuclear power plant EP programs by issuing a Commission security order in 2002.[3] In 2005, NRC also endorsed certain protective measures that licensees could take voluntarily.[4] Finally, in 2011, NRC issued an EP rule that codified elements of both the Commission security order and the voluntary protective measures.[5]

The 2011 EP rule addresses security-related issues such as licensee coordination with offsite response organizations, including local law enforcement, and requires licensees to conduct EP exercises based upon hostile action scenarios.[6] It also addresses issues that are not specific to

[1] 5 U.S.C § 553.

[2] Management Directive 6.3, *The Rulemaking Process*, July 22, 2013.

[3] NRC order EA-02-026, *Order for Interim Safeguards and Security Compensatory Measures.*

[4] Bulletin 2005-02, *Emergency Preparedness and Response Actions for Security-Based Events*, NRC, July 18, 2005.

[5] This rule took effect on December 23, 2011.

[6] NRC defines hostile action as an act toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. NRC inspects nuclear power plant EP exercises on a biennial basis to assess licensees' emergency response capabilities, and licensees are required to conduct at least one EP exercise based on a hostile action scenario during every 8-year exercise cycle.

security, such as backup for alert and notification systems[7] and updates of evacuation time estimates.[8]

EP Responsibilities and Outreach Organizations

The Office of Nuclear Security and Incident Response (NSIR) has overall responsibility for managing NRC's power reactor EP programs. NSIR's Division of Preparedness and Response is responsible for developing emergency preparedness policies, regulations, programs, and guidelines for both currently licensed nuclear reactors and potential new nuclear reactors. The division also coordinates, as appropriate, with other NRC organizations on EP matters, and with Federal agencies including the Federal Emergency Management Agency (FEMA). NRC's four regional offices are responsible for inspecting licensees' EP programs and evaluating licensee staff performance during biennial EP exercises at nuclear power plants. Regional State Liaison Officers also support EP by helping coordinate NRC activities with Federal, State, Tribal, and local government organizations.

NRC's Relationships With External Stakeholders

NRC and FEMA are responsible for guiding licensees and local and State authorities in radiological emergency preparedness. NRC and FEMA regulations and guidance establish the framework for radiological emergency preparedness both at the plant (onsite), and in the area surrounding the plant (offsite). NRC inspects licensee capabilities through observation of EP exercises, during which FEMA assesses offsite response capabilities of State, Tribal, and local authorities. Local and State authorities develop radiological emergency response plans for their jurisdictions. These offsite plans define specific actions that emergency response organizations should take to protect the public in case of emergency at nearby nuclear power plants. Licensees are responsible for managing onsite radiological emergency preparedness and developing

[7] In case of a nuclear power plant emergency, sirens and other means are used to alert nearby populations and notify them of necessary protective actions.

[8] Evacuation Time Estimates (ETE) are used to identify potential evacuation challenges, such as traffic constraints. In the event of a nuclear power plant emergency, ETE help onsite and offsite emergency response managers in making appropriate decisions regarding the protection of the public. The former regulations did not require any review or revision of ETE following a plant's initial licensing.

and maintaining radiological emergency response plans that define specific actions that plant personnel must take to prepare for and respond to a potential incident at the plant.[9]

OBJECTIVES

The audit objectives were to (1) to assess NRC's coordination with external stakeholders to support implementation of new emergency preparedness requirements codified by recent changes to 10 CFR Parts 50 and 52, and (2) to assess NRC's plans for managing issues that may hinder implementation of the new requirements.

AUDIT RESULTS

OIG found that NRC conducted appropriate outreach with external stakeholders throughout the agency's 2011 EP rulemaking process, and OIG identified no current issues with implementation of the new requirements. Therefore, OIG makes no recommendations. However, future challenges for NRC EP oversight include rulemaking for decommissioned nuclear power plants, which present different safety and security considerations than operating reactors.

What Is Required

Regulation and Rulemaking Requirements

NRC informs the public of its rulemaking activities through *Federal Register* notices,[10] and by posting rulemaking documents online in the

[9] Under NRC regulations, licensees are also responsible for recommending protective actions to be taken by State and local authorities during a radiological emergency.

[10] The APA generally requires that an agency publish a notice of proposed rulemaking for most rules in order to provide an interested person with notice of the proceeding and an opportunity to comment on the contemplated action before the agency issues the rule in final form. See 5 U.S.C. § 553 for details.

Agencywide Documents Access and Management System and Regulations.gov Web sites. Additionally, NRC is required by law to accept public comments on proposed rules.[11] NRC considers public comments when drafting and justifying final regulations. In publicizing a final rule, NRC must include its response to each significant public comment that is within the scope of the rulemaking. NRC's practice has been to provide an explanation as to why a comment is not considered significant or within the scope of the rulemaking.

During the preparation of a rule, NRC staff may elect to conduct one or more public meetings to obtain public input. Meeting topics may range from a specific regulatory issue or a portion of the regulations that the NRC proposes to amend, to specific preliminary proposed rule language under consideration at either the proposed or final rule stage.

What We Found

NRC Conducted Extensive Outreach With External Stakeholders

In an effort to conduct a rulemaking that was transparent and open to stakeholder participation, NRC conducted extensive outreach with external stakeholders by various means throughout all phases of the 2011 EP rulemaking process. These outreach activities included public meetings, presentations at workshops and conferences, and pilot exercises at nuclear power plants. In addition, NRC analyzed and incorporated public comments in revising draft regulations, and issued supplementary guidance documents to support implementation of the new regulations.

[11] The APA established the "notice and comment" process found in 5 U.S.C. 533 and sets out the requirement to provide the public an opportunity to participate in Federal rulemaking.

Stakeholder Meetings

During the early stages of the 2011 EP rulemaking, NRC staff engaged external stakeholders to gather their input and to inform them of progress in the development of the new EP requirements. For example, NRC staff met with members of State, Tribal, and local governments as well as nuclear power industry representatives on multiple occasions between 2005 and 2008. In addition, NRC staff posted draft rule language on the Internet to solicit public comments, and subsequently hosted two public meetings to discuss the draft rule language.

NRC also coordinated its external outreach efforts with FEMA, and jointly conducted 11 public meetings in 6 different cities throughout June 2009. NRC held an additional public meeting at its headquarters in September 2009. At these meetings, NRC described proposed EP requirements and associated onsite EP guidance documents, and answered questions from participants.

NRC also met routinely with FEMA staff to address issues of mutual interest and to keep them informed of NRC EP activities. These meetings allowed NRC and FEMA to collaborate on rulemaking and guidance issues, and to ensure regulatory consistency.

Workshops and Conferences

NRC staff made presentations at workshops and conferences attended by representatives of industry, Federal, State, and local authorities. Workshops addressed issues like designing hostile action-based scenarios and capturing lessons learned. NRC also made presentations on EP regulatory developments at annual meetings of the National Radiological Emergency Preparedness Conference before and after issuance of the final rule in 2011.

Pilot Exercises

Hostile action-based exercises were piloted at each nuclear power plant prior to implementation of the 2011 EP rule. Pilot exercises included a tabletop and physical drill/exercise components. Additionally, a working group was created to document significant lessons-learned from hostile

action-based drills and communicate this information to licensees and applicable State and local response organizations.

Public Comments

NRC analyzed public comments and incorporated them into the final rule as appropriate. NRC received a total of 94 submittals and, from these submittals, 687 individual comments were identified. Unanswered stakeholder comments and questions were recorded by NRC staff, and NRC and FEMA responded jointly to those questions and comments.

Guidance

NRC issued multiple supplementary guidance documents to facilitate implementation of the 2011 EP rule. NRC revised existing guidance and provided new guidance for the new requirements shortly before new EP regulations took effect in December 2011. NRC also reviewed and endorsed portions of advisory guidance developed by the nuclear power industry for use by licensees. Together, these documents helped communicate in a timely manner NRC's regulatory intent and acceptable means for complying with regulatory obligations.

Future Challenges

Future Challenges for NRC's EP Oversight at Nuclear Power Plants

Decommissioned nuclear power plants present future challenges for NRC's EP oversight. Four nuclear power plants, with a combined total of five reactors, have shut down since 2012.[12] The Commission has approved each licensee's request for certain exemptions from current EP regulations, which do not differentiate EP requirements at plants that have shut down from EP requirements at operating plants. The Commission has acknowledged a need for new regulations focused on unique requirements of decommissioned nuclear power plants, which present different safety and security considerations than operating plants. During this audit, staff were awaiting Commission direction to start a new EP

[12] The Kewaunee, Crystal River, and Vermont Yankee plants each had one operating reactor prior to closure; the San Onofre plant had two operating reactors prior to closure.

rulemaking for decommissioned nuclear power plants, and told auditors that NRC had created a lessons-learned working group to support these rulemaking efforts.

AGENCY COMMENTS

An exit conference was held with the agency on June 9, 2015. Prior to this meeting, after reviewing a discussion draft, agency management provided supplemental information that has been incorporated into this report, as appropriate.

SCOPE AND METHODOLOGY

The audit reviewed NRC's activities related to the EP program with an emphasis on the development, coordination, and implementation of the new EP regulations under the 2011 EP rulemaking. OIG conducted this performance audit from February 2015 through May 2015 at NRC headquarters in Rockville, Maryland. Internal controls related to the audit objective were reviewed and analyzed. Throughout the audit, auditors were aware of the possibility of fraud, waste, or abuse in the program.

To address the audit objective, OIG reviewed and analyzed pertinent Federal regulations and guidance, NRC policies and procedures, and inspection reports. Guidance reviewed included the following:

- Government Accountability Office Standards for Internal Control in the Federal Government.
- 10 CFR Parts 50 and 52.
- Inspection Manual Chapter 0609, Appendix B, *Emergency Preparedness Significance Determination Process.*

- Inspection Manual Chapter 1601, *Communication and Coordination Protocol for Determining the Status of Offsite Emergency Preparedness.*

- Inspection Procedures 71114, *Reactor Safety—Emergency Preparedness.*

- Regulatory Guidance (RG) 1.219, *Guidance on Making Changes to Emergency Plans For Nuclear Power Reactors*.

- Management Directive 6.3, *The Rulemaking Process*, July 22, 2013.

- NSIR/DPR-ISG-01, *Interim Staff Guidance Emergency Planning for Nuclear Power Plants.*

- NRC Bulletin 2005-02, *Emergency Preparedness and Response Actions for Security-Based Events.*

- NRC's Principles of Good Regulation.

- NUREG/CR-7002, *Criteria for Development of Evacuation Time Estimate Studies.*

- Nuclear Energy Institute 99-01, *Methodology for Development of Emergency Action Levels.*

- Nuclear Energy Institute 10-05, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities.*

- Nuclear Energy Institute 06-04 Appendix A, *Recommended Drill and Exercise Objectives.*

OIG interviewed NRC staff based at headquarters and at each of NRC's four regional offices. These interviews included EP program staff and EP inspectors, as well as Regional State Liaison Officers who engage Federal, State, Tribal and local counterparts on EP issues. In addition, OIG interviewed a Nuclear Energy Institute representative to gather an industry perspective on NRC's EP program and implementation of the 2011 EP rule. During this audit, OIG observed a hostile action-based EP

exercise at Turkey Point Nuclear Generating Station. Furthermore, OIG analyzed hostile action-based EP exercise scenarios developed by licensee personnel for three nuclear power plants, EP inspection reports and findings, and NRC reviews of licensee requests to exempt decommissioned nuclear power plants from certain requirements of current EP regulations.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The audit was conducted by Beth Serepca, Team Leader; Paul Rades, Audit Manager; Ziad Buhaissi, Senior Auditor; and Jenny Cheung, Auditor.