

POLICY ISSUE INFORMATION

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SECY-12-0139

FOR: The Commissioners

FROM: James T. Wiggins, Director
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SUBJECT: ANNUAL UPDATE ON THE STATUS OF EMERGENCY
PREPAREDNESS ACTIVITIES

PURPOSE:

To update the Commission on the U.S. Nuclear Regulatory Commission's (NRC's) emergency preparedness (EP) program activities. This paper does not address any new commitments or resource implications.

BACKGROUND:

In the Staff Requirements Memorandum (SRM) responding to SECY-05-0010, "Recommended Enhancements of Emergency Preparedness and Response at Nuclear Power Plants in the Post-9/11 Environment," the Commission directed the staff to provide a semiannual report on important EP activities (see Agencywide Documents Access and Management System [ADAMS] Accession No. ML051250012). In SECY-07-0182, "Semi-Annual Update on the Status of Emergency Preparedness Activities," dated October 19, 2007, the staff requested the Commission approve a change in the frequency of this report from semiannual to annual. In the SRM to SECY-07-0182, dated December 21, 2007, the Commission approved the request and provided the following direction (ADAMS Accession No. ML072500323):

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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 ROP self-assessment of the EP cornerstone, and should be designed to aid the staff in effecting continuous and coordinated improvements to the overall emergency program, as well as to inform the Commission and public of progress.

SECY-11-0146, "Annual Update on the Status of Emergency Preparedness Activities" provides the staff's fiscal year (FY) 2011 status of the EP program (ADAMS Accession No. ML112101486).

In FY2012, the staff coordinated its assessment activities with those involving the EP cornerstone as part of the ROP annual self-assessment documented in SECY-12-0055, "Reactor Oversight Process Self-Assessment for Calendar Year 2011" (ADAMS Accession No. ML12053A201). The staff's efforts to improve and enhance the EP program focused on the effectiveness of EP inspection procedures and the amended EP regulations.

DISCUSSION:

The NRC's EP program provides reasonable assurance that licensees can and will take adequate protective measures in the event of a radiological emergency at a nuclear power plant to reduce possible radiation doses to members of the public, and to ensure effective emergency response by the agency. In summary, significant EP program accomplishments include publication of the new EP rule and associated guidance, development of an approach to address Fukushima Near Term Task Force recommendations specific to the EP functional area, and the introduction of a scalable approach for the emergency planning zone for small modular reactors (SMRs). The following paragraphs summarize key activities that led to these accomplishments as well as others, that collectively demonstrate the effectiveness of the EP program.

Status of Key Activities

EP Rulemaking and Guidance Development

The NRC achieved the first major revision to the regulatory framework for EP by publishing the EP rule in the *Federal Register* on November 23, 2011 (76 FR 72560), which became effective December 23, 2011. In 2011, the NRC also published the following four guidance documents in support of the EP rule:

- (1) NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies" (ADAMS Accession No. ML11329A053)
- (2) Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors" (ADAMS Accession No. ML102510626)
- (3) NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3 "Guidance for Protective Action Strategies" (ADAMS Accession No. ML113010596)

(4) NSIR/DPR-ISG-01, “Interim Staff Guidance – Emergency Planning for Nuclear Power Plants” (ADAMS Accession No. ML113010523)

In response to lessons learned and in connection with the new EP rule, the staff reviewed and revised eight EP inspection procedures as well as the basis for the significance determination process contained in Inspection Manual Chapter 0609, Appendix B, “Emergency Preparedness Significance Determination Process.” The NRC and the Federal Emergency Management Agency (FEMA) jointly held five public meetings related to the EP rule and associated guidance. The NRC staff also participated in several FEMA workshops held with State and local agencies to address site-specific implementation questions.

Revision of NUREG-0654/FEMA-REP-1, Rev. 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants”

In SECY-06-0200, “Results of the Review of Emergency Preparedness Regulations and Guidance,” dated September 20, 2006, the staff identified high-, medium-, and low-priority EP rule change initiatives (ADAMS Accession No. ML061910707). The EP rule addressed the 12 high-priority initiatives described in the SECY paper, and the staff plans to further explore the remaining medium- and low-priority EP rulemaking initiatives through the revision of NUREG-0654/FEMA-REP-1, Rev.1. A joint FEMA-NRC multiyear initiative to author the revision began in FY 2012 and will continue through the end of calendar year (CY) 2016. The agencies held two public meetings (one in Kansas City, Missouri, and one at NRC headquarters in Rockville, Maryland) to obtain stakeholder input on the scope of topics for the revision.

Risk-Informed, Performance-Based EP

The NRC staff continued to develop a technical basis for a more risk-informed and performance-based regulatory approach for nuclear power plant EP programs. The focus areas for this initiative are exercise scenarios, emergency action levels (EALs), and offsite programs. The staff is attempting to quantify the benefit of EP programs, to risk-inform EALs, and to apply a performance-based approach to offsite EP programs. However, because of higher priority work associated with the response to the Near-Term Task Force (NTTF) recommendations concerning the Fukushima event, the agency has deferred the completion of this work to 2013. In CY 2013, the staff plans to submit a SECY paper to the Commission which will discuss a proposed regulatory structure, options, and estimated resources for the performance-based rulemaking.

Emergency Planning and Preparedness Framework for SMRs

On October 28, 2011, Office of Nuclear Security and Incidence Response (NSIR) staff, in coordination with staff from the Office of New Reactors (NRO), issued SECY-11-0152, “Development of an Emergency Planning and Preparedness Framework for Small Modular Reactors,” to inform the Commission of the staff’s activities in this area (ADAMS Accession No. ML112570439). To promote further discussion with stakeholders, the staff indicated support for a “scalable approach” to the size of the emergency planning zone (EPZ). Under such an approach, the size of the EPZ would be commensurate with offsite dose considerations associated with the size and source term of the SMR.

The staff engaged stakeholders on their views with respect to EP for SMRs at the Federal Radiological Preparedness Coordinating Committee meeting, the winter American Nuclear Society meeting, and the National Radiological Emergency Preparedness conference, and will continue stakeholder outreach on this topic. In recent interactions, stakeholders have expressed an interest for the staff to develop a technology-neutral, dose-based EP framework that takes into account the SMR modular design and its collocation with industrial processes to determine the appropriate size of the EPZ. The specific areas of focus are staff positions regarding new policies or revised regulations for the EPZ size, protective action guidelines, and guidance for a graded approach to specific 10 CFR Part 50 EP requirements. The staff informed the stakeholders that the NRC's existing regulatory structure provides the framework for the development of an emergency plan for an SMR. The staff informed industry that future EP work on SMRs will consider the various designs, modularity, and collocation, as well as the size of the EPZ, once an application has been received. The results of the staff's review of an SMR application could serve as the basis for regulatory revisions. The staff anticipates that applicants will file SMR design certification applications in the third and fourth quarters of 2013, and that the nuclear industry could separately submit EP position, topical, and technical papers for NRC review. The staff will provide a status update on these activities in the summer of 2013 as indicated in WITS 201100071, "Office of New Reactors Response to Staff Requirements Memorandum – Briefing on Small Modular Reactors (M110329)."

Other Activities

- **Fukushima Support**

The staff has primarily focused its emergency preparedness activities regarding the Fukushima Dai-ichi response on the Near Term Task Force (NTTF) Recommendation 9.3, concerning communication and staffing. The staff issued 50.54(f) letters to all licensees to better understand the existing capabilities and plans for staffing during an event involving multiple reactor units and regarding the ability of licensees to maintain communications during a prolonged station blackout. The staff will evaluate the responses to these letters in determining the need for further regulatory action. The staff is also focusing its efforts on the Tier 2 NTTF EP recommendations of multiunit dose assessment, equipment and facilities, and training and exercises. The staff provided the program plans for the remaining NTTF Tier 3 EP recommendations in SECY-12-0095, "Tier 3 Program Plans and 6-Month Status Update in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami," dated July 13, 2012 (ADAMS Accession No. ML12208A208).

- **Freedom Of Information Act**

To facilitate the agency response to a Freedom of Information Act (FOIA) request related to the emergency event at the Fukushima Dai-ichi sites, a task force, comprised of subject matter experts, was established. To date the staff has reviewed approximately 200,000 out of an estimated 1,000,000 pages of information, to preclude the inadvertent release of sensitive information. The staff has released approximately 100,000 pages of information to the public. NSIR continues to review this information for either public release or for referral to other Federal agencies, industry, or private entities. The staff is exploring various options to streamline the review process while ensuring that no sensitive information will be released.

- **SOARCA**

The staff intends to use insights from the SOARCA project to refine and enhance the EP program to better evaluate licensees' plans for emergency response actions in the event of a severe accident. This project modeled accidents with the latest plant-specific information. The staff is using SOARCA techniques to model evacuations and to provide risk-informed insights on the contributions of the EP program with respect to avoided population doses.

EP Self-Assessment

The staff conducted a self assessment (enclosed) to evaluate the NRC's EP program in five areas which support the agency's safety goal in its Strategic Plan: (1) managing reviews of licensing requests to ensure safety, (2) sharing information in an accurate and timely manner, (3) engaging external stakeholders, (4) effectively implementing EP, and (5) addressing the risk-informed performance-based EP concept. The results of the self assessment indicate that the staff: (1) successfully maintained an effective EP program for issuing and updating licensing actions, (2) the staffs outreach and communications activities provided accurate and timely information, (3) the staff fostered and maintained effective partnerships with key stakeholders which led to effective engagement of external stakeholders, (4), the issuance of the EP rule led to effective implementation of EP requirements, and (5) the staffs planned activities for the risk informed performance based concept should result in effective execution to risk inform EP.

CONCLUSION:

The staff continues to ensure that adequate protective measures can and will be implemented by licensees through the effective review and inspection of licensees EP programs. In addition, the staff has an effective outreach program in the area of EP. The staff continues its engagement on issues related to EP for small modular reactors and is working to establish the framework for the implementation of the NTTF EP Recommendations.

COORDINATION:

The Office of the General Counsel reviewed this package and has no legal objection. NSIR coordinated the paper with the Office of the Chief Financial Officer for resource implications.

/Marc Dapas RA for/

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Enclosure:
Self-Assessment of the
Emergency Preparedness Program

Self-Assessment of the Emergency Preparedness Program

The self-assessment evaluated the production and efficiency of the U.S. Nuclear Regulatory Commission's (NRC's) emergency preparedness (EP) program in the following areas: (1) managing reviews of licensing requests, (2) sharing information in an accurate and timely way, (3) engaging external stakeholders, (4) implementing EP, and (5) addressing the risk-informed performance-based EP concept. The criteria used to assess the program correlate directly with the agency's Strategic Plan.

Managing Reviews of Licensing Activities

The staff demonstrated the ability to maintain an effective EP licensing program by completing all licensing actions in accordance with agreed-upon schedules. Since the last annual report to the Commission, the agency has processed 21 licensing actions from power reactor and fuel cycle licensees. These documents were of high quality (accurate, thorough, and well organized) such that the Office of New Reactors (NRO) and the Office of Nuclear Reactor Regulation (NRR) could meet their goals and objectives. The Office of Nuclear Security and Incident Response staff has continued to engage NRR staff to promptly discuss and resolve issues related to the quality and timeliness on proposed requests for additional information and safety evaluation inputs.

In the area of new reactor licensing, the staff continued to support the review of two early site permit applications, 13 COL applications, and three design certification reviews. Staff completed all tasks within expected schedule due dates. The agency adjusted some review schedules to accommodate the staff's support of the ongoing Fukushima-related Freedom of Information Act activities; however, the staff will complete work within NRO's project milestones. In addition, the EP rule has the potential to impact four new reactor applications. If these applicants do not receive a COL by December 31, 2013, they would have to amend their applications, which would extend their schedules by a minimum of 6 months. Although the EP rule anticipated this situation, the staff has continually engaged stakeholders to address this challenge. The staff also provided support in the development, issuance, and testimony regarding the review and subsequent issuance of new reactor licenses for Vogtle and Summer.

The staff continued to use the Federal Emergency Management Agency (FEMA)/NRC EP Steering Committee to facilitate interagency dialogue and to coordinate joint activities related to EP licensing actions and the EP rule implementation; to evaluate performance-based offsite EP regulations; and to discuss comments on EP-related NRC-sponsored studies and proposed guidance changes.

Staff has successfully maintained a highly effective EP program for issuing and updating licensing actions.

Accurate and Timely Information Sharing

The staff used both conventional and social media to provide accurate and timely information regarding the NRC EP regulatory program. The staff continued to publish the quarterly EP newsletter to communicate the status of the EP rule and proposed guidance changes and to note opportunities for public participation. The staff also used two public Web sites

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(www.regulations.gov and www.nrc.gov/about-nrc/emerg-preparedness.html) to disseminate information about the EP rule and associated guidance, to perform outreach, and to provide interested stakeholders an avenue to ask questions. Further, a dedicated EP resource mailbox (emergencypreparedness.resource@nrc.gov) received numerous emails providing suggestions related to the Fukushima event and inquiries about public meetings, among other topics. The staff also embraced the agency's use of social media by writing NRC blog posts which announced the EP rule, announced associated public meetings, and discussed hurricane preparedness. The NRC staff also used Twitter to provide updates on EP activities. Additionally, the staff supported the development of both the Fukushima video posted to YouTube and the 9/11 commemoration video.

At the biennial 2012 National Evacuation Conference in New Orleans, LA, the staff discussed the incorporation of evacuation time estimates into evacuation strategies, evacuation time estimates study development and updates, and NRC insights gained from the Fukushima Daiichi emergency. Conference attendees indicated that they would be able to apply information from NRC studies and guidance to other evacuation studies.

Staff public outreach and communication activities have successfully provided accurate and timely information to the public regarding the EP program. This has resulted in an open and transparent program.

Engaging External Stakeholders

The staff continued to engage external stakeholders using multiple methods: participation in national meetings and forums, providing training, enhancing Government-to-Government discussions, and using Web-based technologies to facilitate communication. In coordination with FEMA, the NRC staff participated in five forums which occurred over several days at five geographic locations. These forums updated licensees and the emergency management community on the status of the EP rule, its implementing guidance, and various EP-related initiatives. The staff also participated in eight national meetings, including the National Emergency Management Association (NEMA) Mid-Year and Annual Conferences, the National Radiological Emergency Preparedness (NREP) Conference, the Nuclear Energy Institute (NEI) EP Forum, the Health Physics Society Mid-Year and Annual Meetings, and the American Nuclear Society Winter Meeting. An open forum following the NREP Conference provided an opportunity for further outreach to State stakeholders. NRC personnel also attended and staffed an information booth at the International Association of Emergency Managers (IAEM) Annual Conference to engage local emergency management officials.

The staff provided training at both the Institute of Nuclear Power Operations New EP Manager Seminar, and at the Harvard School of Public Health EP course, and received feedback that this type of grass roots stakeholder involvement was effective in engaging external stakeholders and providing for more in-depth conversations with emergency management professionals.

The staff continued to work with FEMA and the NRC regions on a revision to Manual Chapter 1601, "Communication and Coordination Protocol for Determining the Status of the Offsite Emergency Preparedness Following a Natural Disaster, Malevolent Act, or Extended Plant

Shutdown,” related to communication and coordination with FEMA based on post-Hurricane Irene lessons learned. The staff also provided input on the revision to the FEMA’s Disaster Initiated Review Process.

To further enhance Government-to-Government relations, the staff, in coordination with FEMA, maintained an effective working relationship with the NEMA REP subcommittee to facilitate open dialogue on key EP initiatives. Based on the success with NEMA, the staff is also working with FEMA to establish a comparable IAEM REP subcommittee. The staff’s goal is to leverage the expertise of these organizations and to engage their respective memberships. To that end, the staff hosted the NEMA Chairman and key REP subcommittee members on a tour of the NRC Operations Center to discuss the agency’s incident response activities.

Staff activities have fostered and maintained effective partnerships with key stakeholders involved in NRC activities which have lead to effective engagement of external stakeholders.

Effective Implementation of EP

The staff completed significant rulemaking activities with the publication of the EP rule and joint publication of NRC and FEMA guidance documents. In addition, the staff endorsed NEI 10-05 (Revision 0), “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities” to implement the staffing analysis requirement of the EP rule and Appendix A, “Recommended Drill and Exercise Objectives” of NEI 06-04 (Revision 2), “Conduct of Hostile Action-Based Emergency Response Drill.”

The NRC and FEMA jointly held a series of public meetings (forums) related to the implementation of the EP rule. The staff discussed the basis for the rule and subsequent implementation expectations as well as challenges to ensuring that licensees would develop effective strategies. Stakeholders commented that this early engagement served to ensure consistent implementation, inspection, and predictability of NRC regulations. In addition to maximizing transparency and encouraging external stakeholder participation, EP staff also followed open Government principles in communications within the agency. NSIR staff provided an overview of changes to the EP rule and EP inspection program to NRC staff from each region during the December 2011 annual counterpart meeting. Finally, from February through April 2012, the NRC EP staff participated in FEMA workshops held with State and local agencies to address site-specific implementation questions.

Staff activities which included completing a significant rulemaking and associated guidance, have resulted in the effective implementation of EP requirements.

Risk-Informed, Performance based EP

The staff intends to use state-of-the-art methods (such as the State-of-the-Art Reactor Consequence Analyses project) to risk inform the regulatory oversight of EP, to risk inform EALs, and to risk inform the performance-based offsite responsive evaluation.

Staff planned activities should result in the effective execution of strategies to risk inform EP.