

**POLICY ISSUE
INFORMATION**

October 8, 2013

SECY-13-0110

FOR: The Commissioners

FROM: James T. Wiggins, Director
Office of Nuclear Security and Incident Response

SUBJECT: ANNUAL UPDATE ON THE STATUS OF EMERGENCY
PREPAREDNESS ACTIVITIES

PURPOSE:

To update the Commission on the U.S. Nuclear Regulatory Commission (NRC) emergency preparedness (EP) program activities and provide an assessment of the NRC EP program. 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 (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 a change in the frequency of this report from semiannual to annual (ADAMS Accession No. ML072500323). In the SRM to SECY-07-0182, dated December 21, 2007 (ADAMS Accession No. ML073550647), the Commission approved the request and provided the following direction:

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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 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.

SECY-12-0139, "Annual Update on the Status of Emergency Preparedness Activities," provides the staff's assessment of the fiscal year (FY) 2012 status of the EP program (ADAMS Accession No. ML12188A587).

DISCUSSION:

The NRC EP program provides reasonable assurance that adequate measures can and will be taken to mitigate plant events and reduce possible radiation doses to members of the public. The staff works to ensure the NRC EP program is integrated with agency safety and security programs, and that the NRC continuously improves its EP and incident response (IR) activities as experience is gained and national EP and IR programs evolve. The following paragraphs summarize the status of key EP program activities.

Rule Implementation

During FY 2013, implementation of the 2011 enhancements to the Emergency Preparedness Rule (76 FR 72560) focused on the requirements for a licensee to demonstrate response to a hostile action-based (HAB) event and to update evacuation time estimates (ETE) and their use in the formulation of protective action recommendations.

Five of nine HAB exercises scheduled for calendar year 2013 have been completed. To date, licensees have demonstrated their ability to respond to an HAB event, to implement their emergency plans in response to the event, and to coordinate onsite security, operations, and emergency response personnel with offsite response organizations. Observations by regional NRC inspectors were collected from each HAB exercise, and useful lessons learned are being developed to inform both the HAB EP inspection process and NRC's response to postulated HAB events. All NRC regional offices participated in at least one HAB exercise. The NRC Headquarters Operations Center provided simulation cells for three of the exercises to date, with full participation scheduled for a future exercise. The staff continues to coordinate HAB EP evaluation activities with the Federal Emergency Management Agency (FEMA) to ensure that onsite and offsite emergency plans facilitate conduct of the HAB exercises. In addition, the staff has participated in industry-sponsored HAB workshops to share insights and expectations with all stakeholders.

The staff is performing a review of licensee ETE updates to ensure consistency with the guidance in NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies" (ADAMS Accession No. ML11329A053). Submittal of ETE updates to the NRC also ensures that ETEs are publicly available in ADAMS. The staff is working to address any issues identified during the reviews; deficiencies will be addressed as part of the Reactor Oversight Process. Documentation of the staff's reviews will be included in a site's quarterly inspection report.

Guidance Development

Revision of NUREG-0654/FEMA-REP-1

An NRC and FEMA working group has been established to revise NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (ADAMS Accession No. ML040420012). The focus of the revision is the criteria by which licensee and offsite response organization EP programs are evaluated for overall adequacy and effectiveness. The working group completed initial drafts of the updated criteria and plans to conduct a series of public meetings with stakeholders to discuss the proposed changes to the criteria and obtain stakeholder feedback. The staff expects that the finished draft will be issued for a 90-day public comment period following completion of the NRC and FEMA internal review and approval processes.

Risk-Informed, Performance-Based Emergency Preparedness

The staff continues its efforts to develop a regulatory regimen that is risk-informed and performance-based for EP. The focus is on the most risk-significant aspects of radiological emergency response for the protection of public health and safety. A SECY paper (notation vote) will be provided to the Commission for consideration in December 2013.

Decommissioning Reactors

Five facilities have recently announced plans to cease operations. Since a decommissioning power reactor retains a Title 10 *Code of Federal Regulations* Part 50 or Part 52 license after permanent shutdown, the staff plans to issue interim staff guidance to assist licensees in developing exemptions requests and to assist the staff in processing exemptions to EP requirements for decommissioning reactors. The staff also plans to develop new inspection procedures specific to EP for decommissioning reactors.

Licensing and Oversight Programs

Licensing

The staff continues to support the Office of New Reactors for EP reviews of combined license applications, early site permit applications, and new reactor designs. In addition, the staff serve as members of the construction reactor oversight process transition working group and the inspection, test, analyses, and acceptance criteria hearing procedures working group. The staff also reviewed applicant responses to address implementation of the revised EP Rule and the Fukushima Near-Term Task Force (NTTF) Tier 1 EP items (staffing and communication). In keeping with the staff's plans as outlined in SECY-11-0152, "Development of an Emergency Planning and Preparedness Framework for Small Modular Reactors," dated October 28, 2011 (ADAMS Accession No. ML112570439), in December 2012, the staff participated in a public meeting with the Nuclear Energy Institute to discuss proposed industry papers addressing source term and EP for small modular reactors. The staff continues to support the Office of Nuclear Reactor Regulation, the Office of Nuclear Material Safety and Safeguards, and the Office of Federal and State Materials and Environmental Management Programs and completed 26 technical evaluations for EP-related licensing requests.

Fukushima Support

The staff completed its assessment of licensee responses to the NRC's March 12, 2012, 50.54(f) letters regarding communications and determined that the completed interim actions, combined with planned long-term enhancements, should help to ensure that licensees can effectively communicate during a station blackout event affecting multiple units. The staff is currently reviewing the licensees' staffing assessments on station blackout coping strategies, including the impact on multiple affected units. Additional program plans were provided to the Commission in COMSECY-13-0010, "Schedule and Plans for Tier 2 Order on Emergency Preparedness for Japan Lessons-Learned" (ADAMS Accession No. ML12339A262). On August 8, 2013, the staff conducted its first in a series of public meetings with interested members of the public and industry representatives to discuss the guidance and subsequent implementation of the Tier 2 NTTF EP recommendations. The staff provided the Commission 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," and plans to begin significant work on these Tier 3 issues in FY 2015.

Honeywell Metropolis Works Facility Emergency Response Plan Evaluation

In response to the events at the Fukushima Dai-ichi site in Japan, the NRC staff inspected the Honeywell facility, in accordance with NRC Temporary Instruction 2600/015 (ADAMS Accession No. ML111030453). The staff identified concerns related to protection of licensed material from a credible seismic event or tornado and with the bounding source terms used by Honeywell as the basis for the facility's emergency response plan. Confirmatory Order EA-12-157 (ADAMS Accession No. ML12289A800) was issued to formalize Honeywell's commitment to remain shut down until adequate corrective actions were taken and those actions verified by the NRC. An interoffice team reviewed Honeywell's extensive plant modifications, safety basis and corrective action plan, and revised emergency response plan. The staff conducted considerable outreach on EP and evaluated an emergency exercise conducted on May 16, 2013, and subsequent recovery table-top on June 5, 2013. Based on Honeywell's completion of the actions in the Confirmatory Order, which included revising the emergency response plan and executing a successful exercise demonstration, and NRC's review and inspection of these actions, authorization to restart full operations was given to the licensee on July 2, 2013.

Outreach

The staff's public outreach and communications activities continue to effectively engage stakeholders using both conventional and social media to ensure an open and transparent program that encourages public involvement. This has been accomplished through the publication of a quarterly EP newsletter, submittal of agency blog posts, and use of the NRC's public Web site to communicate with stakeholders and update them on significant EP-related activities and initiatives. Additionally, the staff provided updates on NRC activities and initiatives at the annual Nuclear Energy Institute EP Forum, the FEMA-sponsored National Radiological Emergency Preparedness Conference and the National Emergency Management Association annual and mid-year conferences. The staff also attended the International Association of Emergency Managers meeting to engage emergency management officials on current NRC initiatives.

Incident Response Issues Related to Emergency Preparedness

The staff continues close coordination with the interagency response community to exercise the recently revised National Response Framework and the associated Federal Interagency Operational Plans to ensure that the NRC's equities are maintained in Federal response activities. Following Hurricane Sandy, the staff assessed that there was a need to enhance the communication and coordination between the NRC and FEMA at the regional level when responding to a natural disaster. The staff held a table-top exercise among NRC Headquarters and Region II, FEMA Headquarters and Region IV, and Florida Power & Light to validate changes to Inspection Manual Chapter 1601, "Communication and Coordination Protocol for Determining the Status of Offsite Emergency Preparedness," (ADAMS Accession No. ML120200174) and FEMA's Disaster Initiated Review Standard Operating Guide, regarding expected roles and responsibilities. The staff is working with FEMA on follow-on activities.

Emergency Preparedness Program Assessment

The staff conducted an assessment (enclosed) to evaluate the NRC EP program against four performance measures: (1) managing reviews of licensing activities to ensure safety, (2) managing rulemakings and supporting regulatory guidance development, (3) sharing information in an accurate and timely manner, and (4) improving NRC preparedness and response. These performance measures are tied to the agency's strategic goal of safety and the organizational excellence strategies of openness and effectiveness. The results of the assessment indicated that the EP program employs effective strategies to meet these performance measures within acceptable execution targets.

CONCLUSION:

The EP program continues to provide reasonable assurance that adequate protective measures can and will be implemented in the event of a radiological emergency. Staff review of licensing activities and inspection of EP programs has been effective. In addition, the staff continues to expand outreach activities and works proactively and collaboratively in the development of EP guidance documents. Program preparedness and response have been improved by incorporating lessons learned through real events, including natural disasters.

COORDINATION:

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

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Office of Nuclear Security and Incident Response

Enclosure:
[Assessment of the Emergency
Preparedness Program](#)

Assessment of the Emergency Preparedness Program

The U.S. Nuclear Regulatory Commission (NRC) emergency preparedness (EP) program was assessed by the staff against four performance measures: (1) managing reviews of licensing activities to ensure safety, (2) managing rulemakings and supporting regulatory guidance development, (3) sharing information in an accurate and timely manner, and (4) improving NRC preparedness and response. These performance measures correlate directly with the agency's Strategic Plan and support the strategic goal of safety and the organizational excellence strategies of openness and effectiveness. The assessment was an evaluation of EP program activities to verify that the staff employed effective strategies to meet these performance measures within identified execution targets.

Managing Reviews of Licensing Activities to Ensure Safety

This performance measure supports the strategic goal of safety. The staff demonstrated an ability to develop, maintain, and implement licensing and regulatory programs in an integrated manner and meet the execution targets of 90-percent timeliness and high quality. Based on this, the EP program is assessed as effective at managing review of EP licensing activities to confirm that they provide an adequate margin of safety consistent with NRC rules and regulations. Significant activities included:

- For new reactors, the staff reviewed EP for the Calvert Cliffs combined license application and developed, in accordance with the schedule, the safety evaluation report. The staff also provided its review of the early site permit application for Public Service Enterprise Group to the Office of New Reactors ahead of schedule; and completed, on schedule, the review of the South Texas Project, and Fermi combined license application revisions to address the revised EP Rule implementation. In addition, the staff developed a license condition to address Fukushima Near Term Task Force Tier 1 EP items (staffing and communication). All work required minimal technical editing.
- The staff evaluated the Honeywell Metropolis Works revised emergency plan and observed the table-top exercise on May 16, 2013, which led, in part, to the authorized restart of the facility on July 2, 2013.
- The staff completed 26 technical evaluations for work requests from the Office of Nuclear Reactor Regulation (NRR), the Office of Nuclear Material Safety and Safeguards (NMSS), and the Office of Federal and State Materials and Environmental Management Programs (FSME). All work required minimal technical editing and was completed on schedule. These requests included the following:
 - three emergency action level scheme upgrades to conform with Revision 5 of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092820314).
 - six individual emergency action level changes to existing licensee schemes.

Enclosure

- two license exemption requests for deferral of biennial EP exercises (Susquehanna and Pilgrim Stations).
- seven exemption requests under the revised EP Rule for currently decommissioned facilities licensed under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, “Domestic Licensing of Production and Utilization Facilities”.
- relocation of the backup emergency operations facility for River Bend Station.
- two site-specific changes to nuclear power plant emergency plans.
- five emergency plan changes for fuel cycle facilities.
- The staff continued to use the Federal Emergency Management Agency (FEMA)/NRC EP Steering Committee to facilitate effective interagency dialogue; to coordinate joint activities related to EP licensing and EP Rule implementation; to evaluate performance-based offsite EP regulations; to discuss comments on EP-related NRC studies; and to manage proposed changes to respective agency and joint guidance documents.

Managing Rulemakings and Supporting Regulatory Guidance Development

This performance measure supports the strategic goal of safety. The staff demonstrated an ability to conduct EP regulatory programs in an integrated manner and use sound science and state-of-the-art methods in establishing risk-informed and performance-based EP regulations. The staff met the execution targets by maintaining and updating the regulatory infrastructure (guidance, inspection procedures, and internal procedures) and coordinating activities with other offices and agencies. Based on this, the EP program is assessed as effective at managing rulemakings and supporting regulatory guidance development to support effective implementation of EP requirements and risk-informed initiatives. Significant activities included:

- As a step toward a risk-informed performance-based EP program, the staff completed development of a methodology to assess the risk significance of EP program elements and performed a proof of concept for two representative sites. The results were published in NUREG/CR-7160, “Emergency Preparedness Significance Quantification Process: Proof of Concept” (ADAMS Accession No. ML13164A285).
- The staff commenced revising NUREG-0654/FEMA-REP-1, Revision 1, “Criteria for Preparation and Evaluation of Emergency Response Plans and Preparedness in Support of Nuclear Power Plants” (ADAMS Accession No. ML040420012). Joint NRC/FEMA writing teams have been established, including headquarters and regional EP staff. This effort will centralize and clarify the criteria regarding State, local, and licensee EP programs.
- The staff provided a range of clarifying responses to EP Rule implementation inquiries using the Emergency Preparedness Frequently Asked Question process.

- The staff endorsed NEI 13-01, “Reportable Action Levels for Loss of Emergency Preparedness Capabilities” (ADAMS Accession No. ML13161A054), which provides clarity regarding reporting requirements contained in 10 CFR 50.72, “Immediate Notification Requirements for Operating Nuclear Power Reactors,” with regard to a major loss of emergency response capability.
- The staff used the Standardized Plant Analysis Risk models to examine the NRC-approved emergency action levels for three nuclear plants. This was the first use of probabilistic risk assessment methods to risk-inform EP oversight activities. The results were published in NUREG/CR-7154, “Risk Informing Emergency Preparedness Oversight: Evaluation of Emergency Action Levels - A Pilot Study of Peach Bottom, Surry and Sequoyah” (ADAMS Accession Nos. ML13031A500 for Vol. 1 and ML13031A501 for Vol. 2).
- The staff provided input and concurrence on an interim staff guidance (ADAMS Accession Nos. ML12156A069 for Part 1 and ML12156A075 for Part 2) for NUREG-1537, “Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors” (ADAMS Accession Nos. ML042430055 for Part 1 and ML042430048 for Part 2). This will assist the staff’s review of license applications for molybdenum-99 production facilities.
- In support of the implementation of the revised EP Rule, the staff reviewed changes to licensee emergency plans and emergency action levels implemented under 10 CFR 50.54(q) to ensure that the changes did not reduce the effectiveness of the emergency plans. In addition, the staff performed reviews of evacuation time estimate updates against the guidance provided in NUREG/CR-7002, “Criteria for Development of Evacuation Time Estimate Studies” (ADAMS Accession No. ML11329A053) for all nuclear power reactor licensees.

Accurate and Timely Information-Sharing

This performance measure supports the organizational excellence strategy of openness. The staff demonstrated an ability to provide accurate and timely information, to provide for meaningful stakeholder involvement, and to enhance awareness and clearly communicate the NRC EP program’s roles, processes, and activities. The staff met the execution targets of ensuring that the NRC’s roles, responsibilities, and perspectives were considered at key outreach activities with opportunity for feedback. In all cases, external interactions have been promptly communicated within the NRC and to regional offices. Based on this, the EP program is assessed as effective at providing accurate and timely information to the Commission, NRC staff, the public, licensees, and other stakeholders about NRC preparedness programs. Significant activities included:

- Stakeholder input on the scope and process for revising NUREG-0654/FEMA-REP-1 was actively solicited and collected through Docket No. FEMA-2012-0026 on <http://www.regulations.gov>. This input was used to inform the joint NRC/FEMA decision-making process for selecting the path forward for revising the document and providing multiple stakeholder involvement opportunities during the revision process.

- The staff coordinated three EP-related sessions at the 2013 Regulatory Information Conference. One session involved engagement of nongovernmental organizations as panelists to discuss the ongoing revision to NUREG-0654/FEMA-REP-1. Another session covered Alert and Notification Systems, including a state-of-the-art demonstration of the Integrated Public and Alert Warning System. The third session covered readiness and challenges of hostile action-based exercises.
- Public meetings were held to discuss (and to elicit fair, timely, and meaningful stakeholder involvement) NRC decision-making for two Performance Indicators (PI): PI Frequently Asked Questions (FAQ) 12-06 was completed to provide additional detail in describing how the accuracy and timeliness criteria for notification for the Drill and Exercise Performance PI is met, and PI FAQ 11-13 was completed to provide the NRC staff perspective on realistic expectations for Alert and Notification System operability after severe weather events. These public meetings communicated the NRC's role, processes, activities, and decisions to the public in plain, clear, and understandable language.
- The staff continued its engagement with stakeholders and participated in a December 2012 public meeting with NEI to discuss proposed industry papers addressing EP for small modular reactors (SMRs). The staff also assisted in the Commission Technical Assistant brief regarding Next Generation Nuclear Plants and a paper to the Commission regarding SMRs and EP.
- The staff's public outreach and communications activities continue to successfully provide accurate and timely information to stakeholders using both conventional and social media to ensure an open and transparent program that encourages public involvement. This was accomplished through the publication of a quarterly EP newsletter, submittal of agency blog posts, and use of the NRC's public Web site to communicate with stakeholders and update them on significant EP-related activities and initiatives.
- The staff provided updates on NRC activities and initiatives at the annual NEI EP Forum and the FEMA-sponsored National Radiological Emergency Preparedness Conference.
- The staff coordinated the development of communication and messaging plans to inform offices, regions, FEMA, and various external stakeholders of the publication of EP-related documents.
- The staff supported FEMA on radiological emergency preparedness activities and initiatives at the National Emergency Management Association annual and mid-year conferences. The staff also attended the International Association of Emergency Managers meeting to engage emergency management officials.
- The staff provided training and insights to licensees on NRC regulatory processes at the annual NEI EP Managers Training Session and the Institute of Nuclear Power Operations New EP Manager Seminar. Additionally, the Emergency Preparedness Technology Course (H-203) provided by the staff was attended by FEMA staff and a foreign national.

Improving NRC Preparedness and Response

This performance measure supports the organizational excellence strategy of effectiveness. The staff demonstrated the ability to anticipate challenges and respond to changes in the regulatory environment, cooperate with other agencies (including international counterparts), use state-of-the-art technologies to improve effectiveness of NRC actions, and provide clear and timely guidance to foster high quality licensing activities. The staff met the execution targets of prioritizing its response to the Near-Term Task Force for the Fukushima Dai-ichi accident, incorporating lessons learned from real events, conducting and incorporating the results of a self-assessment, and maintaining a knowledge management plan. Based on this, the EP program is assessed as effective at improving NRC preparedness and response based on lessons learned through real events, exercises, risk insights, and self-assessments. Significant activities included:

- The staff has conducted a self-assessment of the training and qualification programs within the Division of Preparedness and Response. Interviews of management and staff identified strengths and potential enhancements of the current program and generated recommendations for programmatic improvement.
- Five hostile action-based (HAB) exercises were successfully completed with four more scheduled in calendar year 2013. Each exercise was evaluated by NRC EP inspectors and FEMA evaluators in accordance with new inspection procedures and guidance documents created in support of the revised EP Rule. The NRC Headquarters Operations Center provided simulation cells for three of the exercises to date, with full participation scheduled for a future exercise. Observations by regional EP inspectors were collected from each HAB exercise and useful lessons learned are being developed to inform the HAB EP inspection process and NRC incident response to postulated HAB events.
- The staff addressed recommendations from a self-assessment of the new reactor licensing program. This resulted in centralizing documents for conducting emergency preparedness reviews. Additionally, links to over 100 reference documents were added as part of the Knowledge Management initiative.
- The staff provided significant contributions to the revision of the international Convention on Nuclear Safety Report regarding EP, incident response, and security.
- The staff revised NRC Inspection Manual Chapter 1601, "Communication and Coordination Protocol for Determining the Status of Offsite Emergency Preparedness" (ADAMS Accession No. ML120200174) to incorporate the lessons learned from the response to Hurricane Sandy. In coordination with FEMA, the staff also conducted an interagency table-top exercise to validate changes to NRC and FEMA procedures and to train headquarters and regional staff on expected roles and responsibilities.
- The staff endorsed Revision 6 to NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors" (ADAMS Accession No. ML12326A805), incorporating lessons learned from recent industry events. In addition, the revision incorporates specific lessons learned from the Fukushima Dai-ichi event and recommendations from

the recently published NRC study NUREG/CR-7154, "Risk-Informed Emergency Preparedness Oversight: Evaluation of Emergency Action Levels - A Pilot Study of Peach Bottom, Surry and Sequoyah" (ADAMS Accession Nos. ML13031A500 for Vol. 1 and ML13031A501 for Vol. 2).

- The staff continues to work to find the most effective way to replenish the stockpile of potassium iodide for States that request a supply for use by their populations within the 10-mile emergency planning zone of commercial nuclear power plants. In preparation for the 2014-2015 replenishment cycle, the staff has engaged with States with permanently shut down reactors to ensure the requested amounts match actual needs.
- NSIR staff conducted briefings for the Offices of the Executive Director for Operations, NRR, NMSS, FSME, and the Office of Nuclear Regulatory Research on the proposed development of an interim staff guidance document which outlines the process for the staff's review of EP-related exemption requests dealing with the reduction of EP requirements for decommissioning nuclear power reactors. The staff also supported NRR and FSME in public meetings with Kewaunee, Crystal River, and San Onofre stations regarding the submittal and proposed staff evaluation of exemption requests. In addition, the staff has supported a government-to-government meeting associated with the planned decommissioning of the San Onofre Nuclear Generating Station.