

**RULEMAKING ISSUE
(Affirmation)**

April 8, 2011

SECY-11-0053

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: FINAL RULE: ENHANCEMENTS TO EMERGENCY PREPAREDNESS
REGULATIONS (10 CFR PART 50 AND 10 CFR PART 52)
(RIN-3150-AI10)

PURPOSE:

To obtain Commission approval to publish a final rule to amend certain emergency preparedness (EP) requirements in the regulations that govern the domestic licensing of production and utilization facilities.

SUMMARY:

The enclosed final rule, "Enhancements to Emergency Preparedness Regulations," codifies certain voluntary protective measures that appear in U.S. Nuclear Regulatory Commission (NRC) Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML051740058), and generically applicable requirements similar to those previously imposed by Commission orders. In addition, the final rule amends other licensee emergency plan requirements based on a comprehensive review of the NRC's EP regulations and guidance. The requirements (1) enhance a licensee's ability to prepare and take certain EP actions and protective measures in the event of a radiological emergency; (2) address, in part, security-related EP issues identified after the terrorist events of September 11, 2001; (3) clarify regulations to effect consistent emergency plan implementation among licensees; and (4) modify certain EP requirements to be more effective and efficient. A detailed history of staff activities on this rulemaking effort is provided in Enclosure 1.

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DISCUSSION:

The amendments to the EP requirements will result in changes to the following existing sections and appendices in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, “Domestic Licensing of Production and Utilization Facilities,” and Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants”:

- 10 CFR 50.47, “Emergency Plans”
- 10 CFR 50.54, “Conditions of Licenses”
- 10 CFR Part 50, Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities”
- 10 CFR 52.79, “Contents of Applications; Technical Information in Final Safety Analysis Report”

The final rule contains 12 amendments that will apply to 10 CFR Part 50 licensees that are currently subject to the EP requirements. The final rule similarly applies to certain applicants for construction permits under Part 50 with respect to their discussion of preliminary plans for coping with emergencies (§ 50.34(a)(10)), operating licenses under Part 50 (§ 50.34(b)(6)(v)), early site permits under Part 52 that choose to propose either major features of an, or a complete and integrated, emergency plan (§ 52.17(b)(2)), and combined licenses under Part 52 (§ 52.79(a)(21)).

EP Rulemaking Topics and Significant Changes from the Proposed Rule to the Final Rule

The amendments are summarized in the following 12 topics. The first six are security-related EP issues associated with NRC Order EA-02-026 or Bulletin 2005-02, five are non-security related issues resulting from the comprehensive review of EP regulations and guidance, and one involves administrative changes.

1. Amended Emergency Plan Change Process – The final rule ensures that (1) the effectiveness of the emergency plans will be maintained, (2) changes to the approved emergency plan will be properly evaluated, and (3) any change that reduces the effectiveness of the plan will be reviewed by the NRC prior to implementation.
2. Evacuation Time Estimate (ETE) Updating – The final rule amends the regulations to require licensees to review and update ETEs periodically. The staff changed the threshold for interim ETE updates in Section IV of Appendix E to 10 CFR Part 50 from a 10-percent population change in the proposed rule to a site-specific population increase that causes the longest ETE values to increase by 30 minutes or 25 percent, whichever is less from the licensee’s currently NRC-approved or updated ETE. The staff made corresponding changes to NUREG/CR-7002, “Criteria for Development of Evacuation Time Estimates.”
3. Licensee Coordination with Offsite Response Organizations (OROs) – The final rule amends the regulations to require licensees to identify and describe the assistance expected from ORO resources during an emergency, including hostile action. The

proposed rule contained language in Section IV.A.7 of Appendix E to 10 CFR Part 50 that would have required licensees to ensure that offsite resources are available to respond to their sites during an emergency, including hostile action. The staff removed the requirement for licensees to ensure that offsite resources are available to respond and added a requirement for licensees to identify and provide a description of the assistance expected from OROs during an emergency, including hostile action. The staff made corresponding changes to the interim staff guidance (ISG), NSIR/DPR-ISG-01, "Interim Staff Guidance: Emergency Planning for Nuclear Power Plants."

4. On-Shift Staffing Analysis – The final rule would require licensees to perform a staffing analysis of on-shift personnel assigned emergency response duties to ensure that these emergency responders do not become overburdened during an emergency event.
5. Emergency Action Levels (EALs) for Hostile Action – The final rule amends the regulations to require licensees to have EALs for events involving hostile action. The staff revised Section IV.B.2 of Appendix E in the proposed rule to require licensees to submit entire emergency action level scheme changes via a license amendment request.
6. Emergency Declaration Timeliness – The final rule amends the regulations to ensure that licensees have the capability to complete emergency declarations within 15 minutes in the event of a radiological emergency.
7. Alert and Notification System (ANS) Backup Means – The final rule amends the regulations to require that backup measures for the public ANS be available. The backup measures would be implemented if the primary means of alerting and notification were unavailable during an emergency. The staff revised the language in Section IV.D.3 of Appendix E to 10 CFR Part 50 in the proposed rule to recognize that governmental authorities, not licensees, are generally responsible for primary ANS activation and implementation of the backup ANS. The NRC staff made changes to the ISG and the Federal Emergency Management Agency (FEMA) made corresponding changes to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Supplement 4. NUREG-0654/FEMA-REP-1, Supplement 4 comprises FEMA's updates to NUREG-0654/FEMA-REP-1, which were coordinated with the NRC and this rulemaking.
8. Emergency Operations Facility (EOF) – Performance Based Approach – The final rule amends the regulations to provide performance based criteria for EOFs. The regulations were also revised to remove the references to an EOF as a "near-site" facility and to incorporate specific EOF distance criteria in relation to a nuclear power plant site into the regulations.
9. Emergency Response Organization (ERO) Augmentation at Alternate Facility – The final rule amends the regulations to require licensees to identify alternative facilities to support ERO augmentation during hostile action. This codifies the Interim Compensatory Measures requirements associated with EA-02-026 and the enhancement examples described in Bulletin 2005-02. The staff revised

Section IV.E.8.d in the proposed rule to clarify that each alternative facility must be accessible during hostile action where more than one alternative facility has been designated. The staff also clarified the rule language to state the required alternative facility characteristics in terms of capabilities instead of specific types of equipment to allow licensees flexibility in meeting the new requirements. The staff made corresponding changes to the ISG.

10. Challenging Drills and Exercises – The final rule amends the regulations to require licensees to include hostile action scenarios and other scenario variations in drills and exercises, and submit the scenarios for NRC review. The staff revised Section IV.F.2.j of Appendix E to 10 CFR Part 50 in the proposed rule to increase the exercise cycle from 6 to 8 years and eliminate the 8-year frequency requirement for hostile action exercises to allow more flexibility in varying scenarios. For States involved with multiple nuclear power plant sites, Section IV.F.2.d was revised to specify that these States should fully participate in one hostile action exercise each exercise cycle and rotate their participation from site to site. The staff made corresponding changes to the ISG and FEMA changed NUREG-0654/FEMA-REP-1, Supplement 4.
11. Protection for Onsite Personnel – The final rule amends the regulations to require specific emergency plan provisions to protect onsite emergency responders, and other onsite personnel, in emergencies resulting from hostile action at nuclear power plants.
12. Removal of Completed One-Time Requirements – The final rule eliminates several regulatory provisions that required holders of licenses to take certain one-time actions to improve the state of EP following the Three Mile Island incident in 1979. These actions are complete and the requirements are no longer binding on any current licensee.

The staff also addressed the final rule's impact on combined license (COL) and early site permit (ESP) applications. The staff added language to Section I of Appendix E to 10 CFR Part 50 to allow applicants whose COL or ESP applications are docketed as of the final rule's effective date to defer compliance with the final rule until December 31, 2013.

The regulatory amendments in this final rule were developed before the recent events in Japan occurred. The EP regulations should be revised for the reasons provided herein, notwithstanding the impact the situation in Japan may have on nuclear power plants and EP in the United States. If the Commission determines in the future that further EP actions are necessary to address issues that arise from the events in Japan, then those potential actions should be implemented at that time and not delay the important enhancements provided by this final rule.

Cumulative Effects of Regulation

SRM-M091208, "Staff Requirements—Briefing on the Proposed Rule: Enhancements to Emergency Preparedness Regulations, 9:30 A.M., Tuesday, December 8, 2009, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated January 13, 2010, (ADAMS Accession No. ML100130067) directs the staff

to consider whether the aggregate impact (now referred to as the “cumulative effects of regulation”) of the new EP regulations and other NRC regulations that may already be scheduled for implementation should influence the schedule for implementing the new EP requirements.

The staff fully considered this issue: (1) before and during the EP rulemaking, the staff had extensive interactions with external stakeholders to both gather their valuable input and to inform them of progress in the development of the new EP requirements; (2) the staff issued the draft supporting guidance with the EP proposed rule to facilitate better feedback on both the draft guidance and the EP proposed rule; (3) the staff held numerous meetings with external stakeholders, including FEMA, during the public comment period for the EP proposed rule to familiarize stakeholders with the proposed provisions and to support more constructive and informed feedback; and (4) the staff explicitly requested external stakeholder feedback within the EP proposed rule *Federal Register* Notice on whether the proposed implementation period was sufficient.

Recognizing that the EP provisions represent a significant change to EP and that effective implementation of these new requirements must be supported by the staff's EP partners such as FEMA, the staff held a public meeting on November 15, 2010, to solicit additional input from its partners and external stakeholders concerning implementation of the final EP requirements. The feedback from this meeting, as well as all the previous interactions, informed the staff's recommended schedule for the implementation of the new EP requirements in the enclosed *Federal Register* (FR) Notice (Implementation Periods Matrix, Enclosure 2 and FRN, Enclosure 3). The final rule will go into effect 30 days after it is published in the *Federal Register*, and each individual amendment will have an implementation period. The latest implementation deadline is December 31, 2015.

Public Input to the Proposed Rule

In an effort to conduct a rulemaking that is transparent and open to stakeholder participation, the NRC engaged stakeholders through various means during the development of this rule. The NRC staff met with internal and external stakeholders, including FEMA management, on numerous occasions starting in 2005. In addition, the staff posted draft rule language on the e-rulemaking Web site at <http://www.regulations.gov> on February 29, 2008, and solicited public comments. The NRC hosted two public meetings to discuss the draft rule language and considered the comments received on that language in the process of developing the proposed rule. The NRC and FEMA jointly conducted 11 public meetings in six different cities between June 2, 2009, and June 23, 2009. The NRC held an additional public meeting in Rockville, MD, on September 17, 2009. At these meetings, the NRC described the proposed EP requirements and the associated onsite EP guidance documents, and answered questions from participants. Enclosure 4 summarizes the comments on the EP proposed rule received by the NRC and the NRC's resolution of those comments.

ACRS Review of the Draft Final Rule

The staff briefed the Advisory Committee on Reactor Safeguards (ACRS) Plant Operations and Fire Protection Subcommittee and full committee on the draft final rule and supporting documents on November 1, 2010, and January 14, 2011, respectively. The ACRS had two recommendations for the final rule concerning consolidated EOF and future revisions of the rule

and associated guidance documents. The staff carefully considered the issues raised by the ACRS and responded to the ACRS in a letter dated March 1, 2011 (ADAMS Accession Number ML110460188). For the first ACRS recommendation, the staff believes that the language contained in the final rule, the associated Statement of Considerations, and interim staff guidance document is adequate to address the concerns raised by the ACRS. The staff agrees with the ACRS's second recommendation that future revisions of the EP regulations and associated guidance documents should consider a risk-informed approach to certain aspects of EP using site-specific probabilistic risk assessment and insights from other severe accident studies. The staff is currently conducting research in several areas to determine the feasibility of risk-informing EP, including emergency action levels.

Guidance Documents

The NRC staff expects to publish the following final guidance documents in conjunction with the final rule:

- NSIR/DPR-ISG-01, "Interim Staff Guidance: Emergency Planning for Nuclear Power Plants";
- Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors"; and
- NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimates."

FEMA expects to publish NUREG-0654/FEMA-REP-1, Supplement 4, in conjunction with the final rule.

RESOURCES:

The following staff FTE support resources are required to complete this rulemaking and prepare the associated regulatory guidance. These resources have been allocated in the fiscal year (FY) 2011 budget for following offices: Office of Nuclear Reactor Regulation RR 0.4 FTE; Office of Nuclear Security and Incident Response 1.0 FTE; Office of the General Counsel 0.1 FTE; Office of New Reactors 0.1 FTE; and Office of Administration 0.1 FTE. As currently scheduled, no additional resources will be necessary to complete this rulemaking.

RECOMMENDATIONS:

The staff recommends that the Commission take the following actions:

- (1) Approve the final rule (Enclosure 2) for publication in the FR.
- (2) Certify that this rule, if issued, will not have a significant economic impact on a substantial number of small entities in order to satisfy requirements of the Regulatory Flexibility Act of 1980, as amended.

(3) Note the following:

- The staff will inform the Chief Counsel for Advocacy of the Small Business Administration of the certification and the reasons for it, as required by the Regulatory Flexibility Act.
- The staff has prepared a final regulatory analysis (Enclosure 3).
- The staff has determined that this action is not a “major rule” as defined in the Congressional Review Act and has confirmed this determination with the Office of Management and Budget. The staff will inform the appropriate congressional and Government Accountability Office contacts.
- The staff has performed a final environmental assessment and reached a finding of no significant impact (Enclosure 4).
- This final rule creates new information collection requirements that are subject to the Paperwork Reduction Act of 1995. The staff will submit this rule to the Office of Management and Budget for review and approval of the paperwork requirements (Section XII of Enclosure 2).
- The staff will inform the appropriate congressional committees.
- The Office of Public Affairs will issue a press release.

COORDINATION:

The Office of the General Counsel has reviewed the final rule and has no legal objections. The Office of the Chief Financial Officer has reviewed the final rule for resource implications and has no objections. The staff provided an information copy of this final rule to the Committee to Review Generic Requirements. The Office of Information Services has reviewed the final rule and has no objections to the changes in information collection requirements.

/RA by Martin J. Virgilio for/

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Enclosures:

1. [History of the EP Rulemaking Activities](#)
2. [EP Rule Implementation Matrix](#)
3. [Federal Register Notice](#)
4. [Regulatory Analysis and Backfit Analysis](#)
5. [Environmental Assessment](#)
6. [Summary and Analysis of Public Comments on the Draft Rule Language](#)

History of the EP Rulemaking Activities

After the terrorist events of September 11, 2001, the Nuclear Regulatory Commission (NRC) determined that it was necessary to require certain modifications of emergency preparedness (EP) programs for operating power reactor licensees to ensure continued adequate protection of public health and safety. The NRC issued these modifications to the license holders of the 104 commercial nuclear power reactors in the United States through Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures," dated February 25, 2002.

The NRC evaluated the EP planning basis for nuclear power reactors given the changed threat environment. In SECY-03-0165, "Evaluation of Nuclear Power Reactor Emergency Preparedness Planning Basis Adequacy in the Post-9/11 Threat Environment," dated September 22, 2003, (ADAMS Accession No. ML031960020 (not publicly available)), the NRC staff reported to the Commission that the EP planning basis remained valid, including scope and timing issues. However, the NRC staff also recognized that security events differ from accident events because security events involve planned actions to maximize damage and loss of life, and, therefore, the EP response to such events also differs. The NRC staff noted several EP issues that required further action to better respond to the changed threat environment after the terrorist attacks of September 11, 2001.

On December 14, 2004, the NRC staff briefed the Commission on EP program initiatives. During the briefing, the NRC staff informed the Commission of its intent to conduct a comprehensive review of EP regulations and guidance. On February 25, 2005, the NRC staff provided the Commission with a schedule of activities for the completion of the comprehensive review in response to Staff Requirements Memorandum (SRM)-M041214B, "Briefing on Emergency Preparedness Program Initiatives, 1:00 P.M., Tuesday, December 14, 2004, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated December 20, 2004, (ADAMS Accession No. ML043550354). In SECY-05-0010, "Recommended Enhancements of Emergency Preparedness and Response at Nuclear Power Plants in Post-9/11 Environment," dated January 10, 2005, (ADAMS Accession No. ML042720354 (not publicly available)), the NRC staff requested Commission approval of its recommendations for enhancing, through new guidance documents, nuclear power reactor licensee EP programs in the changed threat environment. In SRM-SECY-05-0010, dated May 4, 2005, (ADAMS Accession No. ML051250012 (not publicly available)), the Commission directed the staff to provide the results of a comprehensive review of EP regulations and guidance. SRM-SECY-05-0010 also approved the staff's recommendation to proceed with enhancements to EP issues as described in SECY-05-0010. As a result, the staff issued Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005, (ADAMS Accession No. ML051740058), which recommended enhancements that licensees could integrate into EP programs at power reactors. Bulletin 2005-02 also sought to obtain information from licensees on their actions taken to implement Order EA-02-026 and to modify their EP programs to adjust to the current threat environment. Based on the results of the inspections after the publication of Bulletin 2005-02, meetings with members of the nuclear power industry, and licensees' responses to Bulletin 2005-02, the NRC determined that licensees were implementing strategies to satisfy Order EA-02-026 and enhance their programs to address the changed threat environment.

The NRC staff provided the results of its review to the Commission in SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance," dated September 20, 2006, (ADAMS Accession No. ML061910707). In that paper, the NRC staff discussed the activities that it had conducted to complete its review and recommended rulemaking for enhancements to the EP program. The staff divided the potential enhancements into two categories: (1) security-related EP issues and (2) other EP issues. The NRC staff evaluated each issue and assigned it a priority of high, medium, or low based on an analysis of the issue's relationship to reactor safety, physical security, EP, NRC strategic goals of openness and effectiveness, and stakeholder impact. The NRC staff identified 12 issues with a high priority, including 6 security-related EP issues and 6 non security-related EP issues. The NRC staff recommended that the Commission approve rulemaking as the most effective and efficient means to ensure the resolution of the high-priority EP issues and provide all interested stakeholders with an opportunity to participate.

In SRM-SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance," dated January 8, 2007, (ADAMS Accession No. ML070080411), the Commission approved the NRC staff's recommendation to pursue rulemaking and guidance changes for enhancements to the EP program. In an April 17, 2007, memorandum from the Executive Director for Operations, the staff provided its rulemaking plan to the Commission. When the staff later prepared the proposed rule, it identified similarities between two issues known in the rulemaking plan as "collateral duties" and "shift staffing and augmentation." As a consequence, these issues are partially combined in the final rule. Also, in addition to the issues identified in the rulemaking plan, the staff added one administrative change to remove certain one-time requirements that all licensees have completed.

EP RULE IMPLEMENTATION MATRIX

#	EP RULE TOPIC	DRAFT FINAL RULE IMPLEMENTATION PERIOD	REQUESTED IMPLEMENTATION PERIOD	REQUESTED IMPLEMENTATION PERIOD BASIS	PROPOSED FINAL RULE IMPLEMENTATION PERIOD	NRC STAFF POSITION
1	Amended Emergency Plan Change Process	30 days after date of final rule publication in <i>Federal Register</i>	90 days (12 months requested during 2009 public comment period)	(By Industry) Allows time for implementing licensee change management processes; also allows flexibility to accommodate outages and other EP staff work assignments.	None. Licensees must comply with new 50.54(q) requirements as of the effective date of final rule (effective date is 30 days after the date that the EP final rule is published in the <i>Federal Register</i>).	Request and basis for 90 days are not acceptable. Licensees have flexibility in timing of emergency plan changes such that submittals of emergency plan changes (with or without requests for prior NRC approval) after effective date must follow new 50.54(q) requirements.
2	Evacuation Time Estimate Updating	Within 365 days of the later of the date of availability of decennial census data from the U.S. Census Bureau or effective date of final rule	12 months (Same as requested during 2009 public comment period)	(By Industry) Allows time to obtain census data from U.S. Census Bureau and State/local agencies, and to perform ETE analyses by limited number of vendors.	Within 365 days of the later of the date of availability of most recent decennial census data from the U.S. Census Bureau or effective date of final rule	Request and basis for 12 months (365 days) are acceptable. Results in no change to implementation period as stated in draft final rule.
3	Licensee Coordination with Offsite Response Organizations	365 days after date of final rule publication in <i>Federal Register</i>	24 months – 36 months (24 months requested during 2009 public comment period)	(By State/Local Agencies) Allows time to identify additional offsite resources and obtain/update agreements for these resources. Longer time (36 months) might be needed if any legal issues involving new agreements arise.	30 months from effective date of final rule	Request and basis for 24 months are acceptable (State/ local agencies agreed that 24 months would be a reasonable time period).

EP RULE IMPLEMENTATION MATRIX

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4	On-Shift Staffing Analysis	180 days after date of final rule publication in <i>Federal Register</i>	36 months (Same as requested during 2009 public comment period)	(By Industry) Allows time to perform staffing analysis (within 12 months), then an additional 24 months to hire, train, and qualify additional personnel (or reassign tasks to existing personnel) if any staffing shortfalls are identified.	365 days from effective date of final rule to perform staffing analysis, within 30 days of completing staffing analysis to implement interim compensatory measures, and within 24 months of completing staffing analysis to complete long-term corrective actions	Request and basis for 12 months (365 days) to perform staffing analysis are acceptable. In consideration of cumulative effect of regulations, licensees would be expected to take interim compensatory measures to address any staffing shortfalls identified in staffing analysis, and then implement long-term corrective actions (maximum of 24 months based on industry feedback).
5	Emergency Action Levels for Hostile Action	180 days after date of final rule publication in <i>Federal Register</i>	36 months (Same as requested during 2009 public comment period)	(By Industry) Allows time to submit EAL scheme changes to NRC for approval.	180 days from effective date of final rule	Request and basis for 36 months are not acceptable. Rule change will not require licensees to change EAL schemes. Any EAL changes that may be needed can be made by licensees under 50.54(q) provisions within 180 days.

EP RULE IMPLEMENTATION MATRIX

#	EP RULE TOPIC	DRAFT FINAL RULE IMPLEMENTATION PERIOD	REQUESTED IMPLEMENTATION PERIOD	REQUESTED IMPLEMENTATION PERIOD BASIS	PROPOSED FINAL RULE IMPLEMENTATION PERIOD	NRC STAFF POSITION
6	Emergency Declaration Timeliness	180 days after date of final rule publication in <i>Federal Register</i>	12 months (Same as requested during 2009 public comment period)	(By Industry) Allows time to revise emergency plans, update procedures, and train responders on declaration timeliness requirements.	180 days from effective date of final rule	Request and basis for 12 months are not acceptable. Declaration timeliness requirement reflects existing NRC expectations and industry practice. Any emergency plan or procedure changes that may be needed can be made by licensees under 50.54(q) provisions within 180 days.
7	Alert and Notification System Backup Means	1 st biennial exercise more than 395 days after date of final rule publication in <i>Federal Register</i>	36 months (Same as requested during 2009 public comment period)	(By Industry and State/ Local Agencies) For sites with ANS backup means already in approved ANS design reports, but modifications to ANS backup means are needed to ensure compliance with new requirement, allows time to update ANS design reports and obtain FEMA approval. For sites without ANS backup means already in approved ANS design reports, allows time to identify and design ANS	Two implementation periods are proposed: 1) For a site with existing FEMA-approved ANS backup means in ANS design report, 12 months from effective date of final rule to implement ANS backup means 2) For a site at which an updated ANS design report would be submitted for FEMA approval, 18 months from effective date of final rule to submit the updated ANS design report to FEMA for	Sites with existing approved ANS backup means should need minimal time for implementation. Implementation for other sites would be based on two steps: 1) submittal of updated ANS design report for FEMA adequacy review, and 2) completion of ANS backup means installation following FEMA approval. Time period for FEMA

EP RULE IMPLEMENTATION MATRIX

#	EP RULE TOPIC	DRAFT FINAL RULE IMPLEMENTATION PERIOD	REQUESTED IMPLEMENTATION PERIOD	REQUESTED IMPLEMENTATION PERIOD BASIS	PROPOSED FINAL RULE IMPLEMENTATION PERIOD	NRC STAFF POSITION
				backup means, revise ANS design reports, and obtain FEMA approval.	adequacy review, then 365 days to install/implement the ANS backup means following FEMA approval, with total time period to implement FEMA-approved ANS backup means not to exceed 3 years and 6 months from effective date of final rule	approval would not be defined, but the total implementation period would be set at 3 years, 6 months from effective date of final rule.
8	Emergency Operations Facility – Performance-Based Approach	180 days after date of final rule publication in <i>Federal Register</i>	No comments (No comments during 2009 public comment period)	N/A	180 days from effective date of final rule	Implementation period would allow time to upgrade an existing EOF if needed.
9	Emergency Response Organization Augmentation at Alternative Facility	180 days after date of final rule publication in <i>Federal Register</i>	36 months (Same as requested during 2009 public comment period)	(By Industry) Allows time to locate or construct new facility with full backup capabilities, such as communications and computer links.	Two implementation periods are proposed: 1) 180 days from effective date of final rule to have staging area and communications capability; and 2) 36 months from effective date of final rule to have remaining capabilities	Request and basis for 36 months are acceptable to be in full compliance. However, staging area and comm. capabilities should be in place within 180 days. Reworded rule language to address alternative facility capabilities instead of specifying equipment. Addressed equipment as guidance in ISG.
10	Challenging Drills and Exercises	1 st biennial exercise more than 395 days after date of final rule publication in	6 months – 3+ years (6 months requested during 2009 public	(By Industry) 6 months allows time to modify drill/exercise programs to	1) Licensees shall conduct an HAB exercise for each of their sites by 12/31/15.	Request and basis to allow more than one year before initial HAB

EP RULE IMPLEMENTATION MATRIX

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		<i>Federal Register</i> for hostile action-based (HAB) exercise	comment period)	address new scenario variation requirements. (By State/Local Agencies) 3+ years allows time to develop plans and procedures to address hostile action, train responders, and conduct practice drills. Implementation period as stated in draft final rule could be as short as one year to prepare for and conduct initial HAB exercise.	2) States should fully participate in one HAB exercise by 12/31/15. 3) The initial 8-year exercise cycle for a site begins in the year the HAB exercise is conducted. For a site licensed under Part 52, the initial 8-year exercise cycle begins in the year of the initial exercise.	exercise are acceptable. As proposed, all existing sites would be required to conduct an HAB exercise by 2015. Similar to the requirement for State participation in biennial exercises, States would be required to fully participate in one HAB exercise per cycle and, for States with multiple sites, to partially participate in other HAB exercises each cycle to include demonstration of incident command aspects with licensees and State and local response organizations.
11	Protective Actions for Onsite Personnel	180 days after date of final rule publication in <i>Federal Register</i>	90 days (Same as requested during 2009 public comment period)	(By Industry) Allows time to revise procedures and train site personnel.	180 days from effective date of final rule	Request and basis for 90 days are acceptable. However, staff considers 180 days to be a more appropriate time period based on the number of site personnel who need to be familiarized with implementing or taking

EP RULE IMPLEMENTATION MATRIX

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						onsite protective actions.

NOTE: Each applicant for a combined license or early site permit under 10 CFR Part 52 whose application is docketed before the effective date of the final rule may defer compliance with any change to the EP regulations under the final rule until after receipt of the license or permit. If that applicant chooses to defer compliance, it shall subsequently amend the combined license or early site permit to comply with those changes no later than December 31, 2013. (Reference 10 CFR Part 50, Appendix E, Section I.5.)

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 50 and 52

[NRC-2008-0122]

RIN 3150–A110

Enhancements to Emergency Preparedness Regulations

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC or Commission) is amending certain emergency preparedness (EP) requirements in its regulations that govern domestic licensing of production and utilization facilities. The final rule adds a conforming provision in the regulations that govern licenses, certifications, and approvals for new nuclear power plants. The final rule codifies certain voluntary protective measures contained in NRC Bulletin 2005-02, “Emergency Preparedness and Response Actions for Security-Based Events,” and generically applicable requirements similar to those previously imposed by Commission orders. In addition, the final rule amends other licensee emergency plan requirements based on a comprehensive review of the NRC’s EP regulations and guidance. The requirements enhance the ability of licensees in preparing to take and taking certain EP and protective measures in the event of a radiological emergency; address, in part, security issues identified after the terrorist events of September 11, 2001; clarify regulations to effect consistent emergency plan implementation among licensees; and modify certain EP requirements to be more effective and efficient.

EFFECTIVE DATE: This final rule is effective **[INSERT DATE 30 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You can access publicly available documents related to this document using the following methods:

Federal e-Rulemaking Portal: Go to <http://www.regulations.gov> and search for documents filed under Docket ID [NRC-2008-0122]. Address questions about NRC dockets to Carol Gallagher, telephone (301) 492-3668; e-mail Carol.Gallagher@nrc.gov.

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I. Background

After the terrorist events of September 11, 2001, the NRC determined that it was necessary to require certain modifications of EP programs for operating power reactor licensees to ensure continued adequate protection of public health and safety. These modifications were issued to licensees by NRC Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures," (Order EA-02-026), dated February 25, 2002. Order EA-02-026 was

issued to the license holders of the 104 commercial nuclear power reactors in the United States. This order required licensees to implement interim compensatory measures (ICMs) for the post-September 11, 2001, threat environment and take actions such as:

- 1) Review security and emergency plans to maximize compatibility between the plans;
- 2) Assess the adequacy of staffing plans at emergency response facilities, and for licensees with an onsite emergency operations facility (EOF), identify alternative facilities capable of supporting emergency response;
- 3) Develop plans, procedures and training regarding notification (including non-emergency response organization (ERO) employees), activation, and coordination between the site and offsite response organizations (OROs);
- 4) Conduct a review of staffing to ensure that collateral duties are not assigned to responders that would prevent effective emergency response; and
- 5) Implement site-specific emergency action levels (EALs) to provide an anticipatory response to a credible threat.

Following the issuance of Order EA-02-026, the NRC conducted inspections of licensee EP programs and held meetings with nuclear power industry representatives to discuss the inspection results and the modifications licensees had made to their EP programs.

Also following the terrorist events of September 11, 2001, the NRC evaluated the EP planning basis for nuclear power reactors given the changed threat environment. In SECY-03-0165, "Evaluation of Nuclear Power Reactor Emergency Preparedness Planning Basis Adequacy in the Post-9/11 Threat Environment," issued on September 22, 2003 (not publicly available), the NRC staff reported to the Commission that the EP planning basis remained valid, including scope and timing issues. However, the NRC staff also recognized that security events differ from accident events due to the planned action to maximize damage and loss of life and that the EP response to such events also differed. The NRC staff noted several

EP issues that required further action to better respond to the post-September 11, 2001, threat environment.

On December 14, 2004, the NRC staff briefed the Commission on EP program initiatives. During the briefing, the NRC staff informed the Commission of its intent to conduct a comprehensive review of EP regulations and guidance. On February 25, 2005, in response to the Commission's staff requirements memorandum (SRM), SRM-M041214B, "Briefing on Emergency Preparedness Program Initiatives, 1:00 P.M., Tuesday, December 14, 2004, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated December 20, 2004, the NRC staff provided the Commission with a schedule of activities for the completion of the comprehensive review. The NRC staff, through SECY-05-0010, "Recommended Enhancements of Emergency Preparedness and Response at Nuclear Power Plants in Post-9/11 Environment," issued on January 10, 2005 (not publicly available), requested Commission approval of the NRC staff's recommendations for enhancing, through new guidance documents, EP in the post-September 11, 2001, threat environment. In its SRM to SECY-05-0010, dated May 4, 2005 (not publicly available), the Commission directed the staff to provide the results of a comprehensive review of EP regulations and guidance. The SRM to SECY-05-0010 also approved the staff's recommendation to proceed with enhancements to address EP issues as described in SECY-05-0010. As a result, the NRC staff issued Bulletin 2005-02 (BL-05-02), "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005, which recommended enhancements that licensees could integrate into EP programs at power reactors. BL-05-02 also sought to obtain information from licensees on their actions taken to implement Order EA-02-026 and to modify their EP programs to adjust to the current threat environment. Based on the results of the post BL-05-02 inspections, meetings with members of the nuclear power industry, and licensees' responses to BL-05-02, the NRC determined that licensees were implementing strategies to

satisfy Order EA-02-026 and enhance their programs to address the changed threat environment.

As directed by the Commission SRMs discussed above, the NRC staff conducted a comprehensive review of the EP regulatory structure, including reviews of regulations and guidance documents. As part of this review, the NRC staff met with internal and external stakeholders through several public meetings in 2005 and 2006 to discuss the elements of the EP review and plans to update EP regulations and guidance. Section III of this document provides a list of the public and other stakeholder meetings.

On September 20, 2006, the NRC staff provided the results of its review to the Commission in SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance," dated September 20, 2006. In that paper, the NRC staff discussed the activities it had conducted to complete the review and provided its recommendation to pursue rulemaking for enhancements to the EP program. The NRC staff explained that the comprehensive review of the EP program identified several areas where the implementation of EP regulations and guidance, recent technological advances, and lessons learned from actual events, drills, and exercises had revealed to the NRC areas for potential improvement and increased clarity for the EP program. The staff divided the potential enhancements into two categories: security-based EP issues and other EP issues. The NRC staff evaluated each issue and assigned it a priority of high, medium, or low based on an analysis of the issue's relationship to reactor safety, physical security, EP, NRC strategic goals of openness and effectiveness, and stakeholder impact.

The NRC staff's outreach efforts, data gathering, research, and analysis led to the identification of 12 issues with a high priority, including six security EP issues and six non-security EP issues. In SECY-06-0200, the staff presented a framework for the potential enhancements to the EP regulations and guidance to address these issues, including steps for

implementation, prioritization, and resource estimates. Based on its review, the NRC staff recommended that the Commission approve rulemaking as the most effective and efficient means to ensure that the high priority EP issues were resolved with an opportunity for participation by all interested stakeholders.

In its SRM to SECY-06-0200, dated January 8, 2007, the Commission approved the NRC staff's recommendation to pursue rulemaking and guidance changes for enhancements to the EP program. On April 17, 2007, the staff provided its rulemaking plan to the Commission. During the development of the plan, the NRC staff assessed the issues identified in SECY-06-0200 and discussed the feasibility of conducting rulemaking and updating guidance on all issues. The staff determined that the best course of action was to conduct rulemaking on the 12 issues identified in SECY-06-0200 as having a high priority, and to reassess the remaining issues at a later date. The decision to conduct rulemaking on the highest priority issues was made to allow a timelier rulemaking effort to occur and enable the staff to more completely assess the remaining lower priority issues.

Due to the similarities between two issues known in the rulemaking plan as "collateral duties" and "shift staffing and augmentation," these issues have been partially combined in this final rule. Additionally, the Commission directed the NRC staff in SRM-M060502, "Staff Requirements – Briefing on Status of Emergency Planning Activities, (Two sessions) 9:30 A.M. and 1:00 P.M., Tuesday, May 2, 2006, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to public attendance)," dated June 29, 2006, to coordinate with the Department of Homeland Security (DHS) to develop emergency planning exercise scenarios that would ensure that EP drills and exercises were challenging and did not precondition participant responses. This direction was incorporated into the rulemaking issue regarding the conduct of hostile action drills and exercises because it was so closely related. BL-05-02 provided a definition of "hostile action" for use in EP programs: "An act toward an

NPP or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included.”

In an effort to conduct a rulemaking that would be transparent and open to stakeholder participation, the NRC engaged stakeholders through various means during the development of this rule. The NRC discussed the proposed improvements to the EP regulations and guidance at several conferences with key stakeholders present including the 2007 NRC Regulatory Information Conference (RIC) and the 2008 National Radiological Emergency Preparedness (NREP) Conference. These meetings are discussed more fully in Section III of this document.

The NRC posted draft rule language on the e-rulemaking website, <http://www.regulations.gov>, on February 29, 2008, and solicited stakeholder comments. The NRC considered the comments received on the draft rule language in the process of developing the proposed rule. The NRC continued the use of public meetings as a method to foster open communication with stakeholders when it held public meetings on March 5, 2008, and on July 8, 2008. At the March 5, 2008 meeting, the NRC staff discussed the draft preliminary rule language for the rulemaking on enhancements to EP regulations and guidance and answered stakeholders’ questions on the rule language. At the July 8, 2008 meeting, the NRC staff discussed the public comments on the draft preliminary rule language and answered stakeholders’ questions on how these comments may be addressed in the proposed rule.

On January 9, 2009, the NRC staff provided the proposed rule to the Commission in SECY-09-0007, “Proposed Rule Related to Enhancements to Emergency Preparedness Regulations (10 CFR Part 50).” In its SRM to SECY-09-0007, dated April 16, 2009, the Commission approved the publication of the proposed rule. The NRC published the proposed rule on the enhancements to EP regulations for public comment in the *Federal Register* on

May 18, 2009 (74 FR 23254). Because it received several requests to lengthen the public comment period, the NRC extended the deadline for the public comment period from August 3, 2009, to October 19, 2009. During the public comment period, the NRC and the Federal Emergency Management Agency (FEMA) jointly held 11 public meetings to discuss the proposed rule and related guidance documents. The NRC received a total of 94 submittals and from these submittals, 687 individual comments were identified.

On December 8, 2009, NRC and FEMA staff briefed the Commission on the status of the EP rulemaking and comments received during the public comment period. In addition, a panel of external stakeholders briefed the Commission on their comments and views regarding the proposed rule. In SRM-M091208, "Staff Requirements – Briefing on the Proposed Rule: Enhancements to Emergency Preparedness Regulations, 9:30 A.M., Tuesday, December 8, 2009, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated January 13, 2010, the Commission directed the NRC staff to continue working with FEMA in considering comments from State and local officials, and other interested stakeholders, to enhance the EP regulations and guidance. The Commission also directed the NRC staff to address the impacts of the rule and to consider providing a public draft of the rule language and guidance documents via the NRC public website while working with the Advisory Committee on Reactor Safeguards on the draft final rule.

On November 15, 2010, the NRC and FEMA held a public meeting to discuss the proposed implementation dates for the EP final rule. The feedback from this meeting, as well as all the previous interactions, informed the NRC's schedule for the implementation of the new EP requirements.

II. Discussion

The final rule applies to 10 CFR Part 50 licensees that are currently subject to the EP requirements. The final rule similarly applies to certain applicants for construction permits under Part 50 with respect to their discussion of preliminary plans for coping with emergencies (§ 50.34(a)(10)), operating licenses under Part 50 (§ 50.34(b)(6)(v)), early site permits under Part 52 that choose to propose either major features of an, or a complete and integrated, emergency plan (§ 52.17(b)(2)), and combined licenses under Part 52 (§ 52.79(a)(21)). A discussion of which applicants may defer compliance with the requirements of this final rule is provided in Section V of this document.

An effective EP program decreases the likelihood of an initiating event at a nuclear power reactor proceeding to a severe accident. EP cannot affect the probability of the initiating event, but a high level of EP increases the probability of accident mitigation if the initiating event proceeds beyond the need for initial operator actions. As a defense-in-depth measure, emergency response is not normally quantified in probabilistic risk assessments. However, the level of EP could affect the outcome of an accident in that the accident may be mitigated by the actions of the ERO or, in the worst case, consequences to the public could be reduced through the effective use of protective actions. Enhancements to the level of EP in this manner enhance protection of public health and safety through improvements in the response to unlikely initiating events that could lead to severe accidents without mitigative response.

The NRC's EP requirements are based on 16 planning standards in § 50.47(b) that apply to onsite and offsite emergency response plans. The planning standards apply to onsite and offsite plans because, in making its licensing decision, the NRC looks at the application (or the licensee's activities in the case of existing facilities), the current State and local government emergency plans, and FEMA's recommendation, which is based on the content of the State and local plans. FEMA's regulations in 44 CFR Part 350 also contain these planning standards,

which are used to make its recommendation on the adequacy of the plans and capability of the State and local governments to implement them; however, FEMA's regulations address only offsite (State and local government) plans. The changes to § 50.47(b) in this final rule are designed to affect the onsite plans, not the offsite plans. The changes have been written in a way that is expected to limit the chance of unintended impacts on FEMA regulations.

This final rule does not affect the findings necessary for issuance of a renewed nuclear power operating license under 10 CFR Part 54. As the Commission explained in the license renewal final rule (56 FR 64943; December 13, 1991) and again in revisions to that final rule (60 FR 22461; May 8, 1995), the scope of license renewal is limited to those issues that have a specific relevance to protecting the public health and safety during the license renewal period (i.e., age-related degradation). Issues relevant to current plant operations, like emergency planning, fall within the purview of the current regulatory process and continue into the extended operation period of a license renewal. See also NUREG-1412, "Foundation for the Adequacy of the Licensing Bases," December 1991. The Commission has affirmed repeatedly that "emergency preparedness need not be reviewed again for license renewal," 71 FR 74848, 74852; December 13, 2006 (referencing 56 FR at 64966). The Commission stated that "[t]hrough its standards and required exercises, the Commission ensures that existing plans are adequate throughout the life of any plant even in the face of changing demographics and other site-related factors." 71 FR at 74852 (quoting 56 FR at 64966). This basic determination is reflected in the NRC's regulations at § 50.47(a), in which a new finding on emergency planning issues is not required for license renewal.

The discussion of the amendments in this final rule is divided into two sections: Section II.A for security-related EP issues and Section II.B for non-security related EP issues. The security-related issues are topics that address subjects similar to certain requirements in Order EA-02-026 and the guidance in BL-05-02. The non-security related issues are high

priority items that resulted from the comprehensive review of EP regulations and guidance.

A. Security-Related EP Issues

The NRC is enhancing its EP regulations by incorporating changes that clearly address EP actions for hostile action. Some of the changes are based on requirements in Order EA-02-026 that was issued to ensure adequate protection of the public health and safety and common defense and security. After the issuance of Order EA-02-026, however, the Commission took several additional steps to ensure adequate protection of the public health and safety and common defense and security, including the issuance of Order EA-02-261, "Access Authorization Order," issued January 7, 2003 (68 FR 1643; January 13, 2003); Order EA-03-039, "Security Personnel Training and Qualification Requirements (Training) Order," issued April 29, 2003 (68 FR 24514; May 7, 2003); Order EA-03-086, "Revised Design Basis Threat Order," issued April 29, 2003 (68 FR 24517; May 7, 2003); the Design Basis Threat (DBT) final rule (72 FR 12705; March 19, 2007); and the Power Reactor Security Requirements final rule (74 FR 13926; March 27, 2009). As a result of these adequate protection requirements, the Commission has determined that the existing regulatory structure ensures adequate protection of public health and safety and common defense and security. Therefore, the EP changes in this final rule that are based on the requirements of Order EA-02-026 are not necessary to ensure adequate protection during hostile action. These amendments are considered enhancements to the current EP regulations. However, licensees' implementation of these enhancements will result in a substantial increase in EP and the protection of public health and safety.

1. *On-Shift Staffing Analysis*

The NRC is concerned that on-shift ERO personnel who are assigned to emergency plan implementation functions may have numerous tasks or multiple responsibilities that would prevent timely performance of their assigned emergency plan tasks. The requirements for

on-shift responsibilities are addressed in § 50.47(b)(2) and Part 50, Appendix E, Section IV.A. The former regulations did not specifically require that on-shift personnel assigned to emergency plan implementation must be able to implement the plan effectively without having competing responsibilities that could prevent them from performing their primary emergency plan tasks. NRC regulations and guidance concerning licensee EROs are general in nature to allow some flexibility in the number of on-shift staff required for response to emergency events. This sometimes has resulted in the inadequate completion of emergency functions required during an emergency event. The NRC issued Information Notice (IN) 91-77, "Shift Staffing at Nuclear Power Plants," dated November 26, 1991, to alert licensees to problems that could arise from insufficient on-shift staff for emergency response. The IN highlighted the following two events:

- A fire at one plant in April 1991 resulted in the licensee's failure to notify some key emergency response personnel (communication function). The need to staff the fire brigade and perform numerous response actions required by the event resulted in a heavy workload for the shift staff.
- A fire, loss of offsite power, and reactor trip at another plant in June 1991 resulted in difficulties in classifying the event, notifying required personnel, implementing emergency operating procedures, and staffing the fire brigade. Insufficient staff contributed to the licensee's failure to make a timely Notification of Unusual Event.

The NRC issued IN 93-81, "Implementation of Engineering Expertise On-Shift," dated October 12, 1993, to alert licensees of ineffective implementation of the requirement to provide adequate engineering expertise on shift. Each nuclear power plant is required to have a shift technical advisor (STA) on shift to provide engineering and accident assessment expertise. However, some licensees had assigned additional response duties to STAs, such as communicator or fire brigade member, which could have resulted in overburdening the control

room staff during an emergency event. One licensee had assigned the STA as fire brigade leader, which could have hindered the STA from performing the primary duty of providing accident assessment and engineering expertise.

After issuance of IN 91-77, event follow-up inspections indicated that challenges involving shift staffing and task allocation continued. The NRC initiated a study in 1995 to assess the adequacy of shift staffing for emergency response. The NRC published IN 95-48, "Results of Shift Staffing Study," dated October 10, 1995, which cited several observations of inadequate staffing and also concluded that there could be a large workload for radiological support personnel during emergencies. Data was collected on the adequacy of nuclear power plant staffing practices for performing response activities during two accident scenarios, which were (1) a fire leading to reactor trip with complications, and (2) either a control room fire leading to evacuation and remote shutdown or a station blackout. Items of interest included the following:

- Licensees surveyed did not use a systematic process for establishing site-specific shift staffing levels.
- Licensees surveyed frequently assigned additional plant-specific tasks that were not specified by regulation to be performed by licensed and non-licensed operators during an event.
- Five of the seven licensees surveyed used licensed personnel to staff the fire brigade.
- Procedures varied significantly concerning licensed and non-licensed personnel staffing levels, and the number of non-licensed operators used on the night-shift varied greatly.
- Radiation protection and chemistry technicians of all the licensees surveyed had a high workload during the scenarios.

Multiple NRC inspection findings also indicate the need for regulatory clarity in the assignment of multiple responsibilities to on-shift ERO personnel. For example, in February 2003, one licensee revised its emergency plan to delete one of three communicators and assigned the communicator function to the STA as an additional duty. As previously stated, the primary emergency plan duty of the STA is to provide engineering and accident assessment expertise. The NRC determined that this emergency plan change was an inappropriate reduction in on-shift staff and assessed the change as a decrease in effectiveness of the emergency plan in violation of § 50.54(q). In April 2005, another licensee revised its emergency plan to allow the assignment of the on-shift health physics technician (HP Tech.) as the interim operations support center coordinator, a 30-minute augmented ERO responder. The HP Tech. had assigned emergency plan tasks including in-plant surveys, in-plant protective actions, and rescue/first aid. The NRC determined that this emergency plan change was an inappropriate assignment of augmentation staff duties to an on-shift responder and assessed the change as a decrease in effectiveness of the emergency plan in violation of § 50.54(q).

These findings demonstrated the need for amended regulations to explicitly limit on-shift ERO response duties to ensure that these emergency responders do not become overburdened during an emergency event. Having additional duties beyond the assigned emergency plan implementation functions could result in on-shift responders being overburdened, resulting in inadequate or untimely response.

The ICMs in Order EA-02-026 addressed on-shift staff responsibilities by requiring licensees to ensure that a sufficient number of on-shift personnel are available for integrated security plan and emergency plan implementation. Prior to issuance of the order, some licensees were utilizing security personnel to implement the emergency plan when many of these responders would likely not be available due to a hostile action.

The NRC considered several options to resolve this issue. One option was to take no

action, but this alternative would not have subjected new nuclear power reactor licensees to Order EA-02-026's requirement of an assessment to ensure adequate staff for integrated security plan and emergency plan implementation. Additionally, the shift staffing study referenced in IN 95-48 found that the licensees surveyed did not use a systematic process for establishing shift staffing levels and additional tasks, not required by regulation, were assigned to the licensed and non-licensed operators. This practice, if permitted to continue, could have resulted in operators being overburdened during an emergency. A second option was to allow licensees to use a voluntary program to ensure adequate shift staffing. However, many licensees have requested NRC permission to reduce on-shift staffing levels and the NRC would have expected this practice to continue. This could have increased the risk of over-burdening on-shift responders and resulted in inadequate or untimely response. Therefore, both of these options were considered unacceptable.

In the proposed rule, the NRC would have required nuclear power plant licensees to provide a detailed analysis to show that on-shift personnel assigned emergency plan implementation functions were not assigned any responsibilities that would prevent them from performing their assigned emergency plan functions. The NRC received several comments on this proposal, questioning the need for this regulation and suggesting that the proposed rule methodology should be placed in a regulatory guide, NUREG, or some other guidance document. The NRC disagrees with these comments and believes that a regulation is necessary to ensure consistent licensee implementation of on-shift emergency response staffing that is enforceable and not merely guidance. Therefore, the NRC is amending Part 50, Appendix E, Section IV.A, to address this issue, as discussed in Section IV of this document.

In the proposed rule, the NRC asked for public comment on whether the NRC should enhance its regulations to be more explicit in the number of ERO staff necessary for response to nuclear power plant emergencies. Specifically, the NRC requested comments on a draft

staffing table that provided proposed staff functions and minimum staffing levels for the on-shift and augmenting ERO. The table was a modification of the guidance found in Table B-1 of NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated November 1980, and incorporated lessons learned from years of NRC EP experience. Of the comments the NRC received, some comments supported and some opposed the inclusion of the table into regulations. The NRC acknowledges that because each site is different and site characteristics may dictate the size of the ERO staff, requiring compliance with standard staffing requirements would be an unreasonable approach to resolving this issue. For example, the NRC has approved some emergency plans with additional ERO staff due to site-specific circumstances, such as the lack of a local fire department or hospital. Therefore, the NRC is not specifying a standard ERO staffing table in its regulations.

In the proposed rule, the NRC asked for public comment on whether the NRC should add a requirement for non-power reactor licensees to perform a detailed analysis demonstrating that on-shift personnel can perform all assigned emergency plan implementation functions in a timely manner without having competing responsibilities that could prevent them from performing their emergency plan functions. The NRC received several comments that opposed a regulation imposing this requirement. The NRC agrees that this requirement is not necessary for non-power reactor licensees. Staffing at non-power reactors is generally small, which is commensurate with the need to operate the facility in a manner that is protective of public health and safety. The NRC reviews the staffing as part of initial reactor licensing. The functions of emergency staff are outlined in emergency plans and are tested through drills and exercises in accordance with NUREG-0849, "Standard Review Plan for the Review and Evaluation of Emergency Plans for Research and Test Reactors," dated October 1983. Results are reviewed by the NRC during routine inspections. Therefore, the NRC has not included this requirement in

the final rule.

2. *Emergency Action Levels for Hostile Action*

Section 50.47(b)(4) stipulates that emergency plans must include a standard emergency classification and EAL scheme. Part 50, Appendix E, Section IV.B., specifies that emergency plans shall include EALs that are to be used as criteria for determining the need for notification of State and local agencies, and participation of those agencies in emergency response. However, the former regulations did not require EALs for hostile action and did not address the issue of anticipatory response to hostile action. Although Order EA-02-026 and BL-05-02 addressed these issues, those improvements to the EAL requirements to address hostile action were only in orders and guidance. Thus, the NRC could not ensure consistent and effective implementation of these enhancements among existing and future licensees.

Order EA-02-026 required the declaration of at least a Notification of Unusual Event in response to a credible hostile action threat. In 2005, the NRC issued BL-05-02, which provided EAL enhancement examples for hostile action up to the General Emergency level. BL-05-02 provided examples of EALs for all three EAL methodologies that could be implemented immediately without prior NRC approval (i.e., NUREG-0654, NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels," and Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels"). It also pointed out that because of improvements in Federal agencies' information-sharing and assessment capabilities, hostile action emergency declarations can be accomplished in a more anticipatory manner, based on a credible threat, than the current method of making declarations for accidental events. This would enable earlier implementation of emergency response actions.

Although all nuclear power reactor licensees have implemented both the credible threat EAL required by Order EA-02-026 and the EAL enhancements specified in BL-05-02, licensees were not required to maintain the enhancements identified in the bulletin. This could have

resulted in inconsistent EAL implementation among licensees for response to hostile action. Also, future licensees would not have been required to include these enhancements in their emergency plans. This final rule establishes consistent EALs across the nuclear power industry for hostile action. The ICMs and BL-05-02 provided enhancements to EAL schemes that would allow event declarations to be accomplished in a more anticipatory manner. This timeliness is of the utmost importance because EALs are used as criteria for determining the need for notification and participation of State and local agencies. The NRC is codifying these enhancements to the EAL requirements addressing hostile action by revising Part 50, Appendix E, Section IV.B, as discussed in Section IV of this document.

The NRC considered other options to attempt to resolve these issues, such as taking no action or allowing voluntary action by licensees. These options were rejected since there would have continued to be no regulatory requirement for current or future licensees to incorporate EALs for hostile action in their emergency plans, nor would there be a consistent minimum level of implementation that the NRC had determined to be adequate.

In the proposed rule, the NRC asked for public comment on whether the NRC should expand to non-power reactor licensees the requirement for power reactor licensees to have hostile action EALs. Appendix E to 10 CFR Part 50 cites Regulatory Guide (RG) 2.6, "Emergency Planning for Research and Test Reactors," dated March 1983, as the guidance for the acceptability of research and test reactor emergency plans. RG 2.6 endorses ANSI/ANS 15.16-1982, "Emergency Planning for Research Reactors," as an acceptable approach to non-power reactor emergency plans. The newly updated ANSI/ANS 15.16-2008 includes hostile action EALs. The NRC has commenced the process to update RG 2.6 to endorse ANSI/ANS 15.16-2008. The NRC has also determined that further analysis and stakeholder interactions are needed prior to changing the requirements for non-power reactor licensees. Therefore, the NRC has not included a requirement in the final rule for non-power

reactor licensees to have hostile action EALs.

3. *Emergency Response Organization Augmentation and Alternative Facilities*

Section 50.47(b)(2) and Part 50, Appendix E, Section IV.C, require licensees to have the capability to augment the on-shift staff within a short period of time after the declaration of an emergency to assist in mitigation activities. To accomplish this, ERO members typically staff an onsite Technical Support Center (TSC) that relieves the control room (CR) of emergency response duties and allows CR staff to focus on reactor safety. ERO members also staff an onsite Operational Support Center (OSC) to provide an assembly area for damage repair teams. Lastly, ERO members staff an EOF, usually located in close proximity to the plant, to function as the center for evaluation and coordination activities related to the emergency and the focal point of information provided to Federal, State, and local authorities involved in the response.

Section 50.47(b)(8) and Part 50, Appendix E, Section IV.E, require licensees to have adequate emergency facilities and equipment to support emergency response. However, § 50.47(b)(8) and the former Part 50, Appendix E, Section IV.E, did not require licensees to identify alternative facilities to support ERO augmentation during hostile action. During hostile action, ERO members would likely not have access to the onsite emergency response facilities, or the EOF if it is located within the licensee's owner-controlled area. Nevertheless these events still warrant timely ERO augmentation so responders can travel quickly to the site once access is allowed.

Order EA-02-026 required that licensees assess the adequacy of staffing plans at emergency response facilities during hostile action, assuming the unavailability of the onsite TSC, and identify alternative facilities capable of supporting event response. These facilities would function as staging areas for augmentation staff until the site was secured, which would minimize delays in overall site response by permitting ERO assembly without exposing

responders to the danger of hostile action. NRC inspections to evaluate the effectiveness of the implementation of the ICMs revealed variations in the identification and staffing of alternative emergency response facilities.

BL-05-02 described how alternative locations for onsite emergency response facilities support EP functions during hostile action. It stated that the ERO is expected to be staged in a manner that supports rapid response to limit or mitigate site damage or the potential for an offsite radiological release. It also pointed out that some licensees have chosen not to activate elements of the ERO during hostile action until the site was secured. However, the NRC considers it prudent to fully activate ERO members for off-normal working hour hostile action to promptly staff alternative facilities, in order to minimize delays in overall site response. BL-05-02 conveyed that, even during normal working hours, licensees should consider deployment of onsite ERO personnel to an alternative facility near the site during hostile action.

To resolve this issue, the NRC considered taking no regulatory action or continuing the voluntary implementation currently in place as a result of BL-05-02 and the guidance endorsed by NRC Regulatory Issue Summary (RIS) 2006-12, "Endorsement of Nuclear Energy Institute Guidance 'Enhancements to Emergency Preparedness Programs for Hostile Action,'" dated July 19, 2006. If no action had been taken, there would have continued to be no explicit regulatory requirement regarding the actions necessary during hostile action for the ERO to staff an alternative facility. ERO members would likely not have access to the site during hostile action, but timely augmentation would still be necessary for adequate response. Taking no regulatory action may have resulted in inconsistent implementation of ERO augmentation guidelines, and less effective overall site response. The NRC also considered using a voluntary program; however, voluntary programs, such as those developed per the NEI guidance endorsed by RIS 2006-12, do not provide a consistent, NRC-approved means for addressing needed enhancements for hostile action. The use of voluntary programs would not have

ensured long-term continuity of the enhancements for both licensees and applicants. Thus, the NRC is codifying the ICM requirement and the enhancement examples described in BL-05-02 concerning ERO augmentation to alternative facilities during hostile action in Part 50, Appendix E, Section IV.E, to maximize the effectiveness of the site response. These changes are discussed in Section IV of this document.

4. Licensee Coordination with Offsite Response Organizations during Hostile Action

A unique challenge posed by hostile action at a nuclear power plant is the increased demand on local law enforcement agencies (LLEAs) that are expected to implement portions of ORO emergency plans, as well as respond to the plant. The former § 50.47(b)(1) and Appendix E to Part 50 did not explicitly require licensees to coordinate with OROs to ensure that personnel are available to carry out preplanned actions, such as traffic control and route alerting by LLEAs, during hostile action directed at the plant.

Licensees are required to identify ORO support for emergency response as well as demonstrate that various ORO capabilities exist through biennial evaluated exercises. Licensees and OROs have successfully demonstrated these capabilities for many years. However, the NRC recognized that hostile action may challenge OROs in ways unforeseen at the time the current regulations were developed. For example, local law enforcement personnel may be assigned both evacuation plan and armed response duties during hostile action. The NRC acknowledged this challenge when it issued Order EA-02-026 and included provisions that licensees address coordination with OROs for hostile action. Specifically, the order required that licensees develop plans, procedures, and training regarding coordination between the site and OROs and directed licensees to review emergency plans to ensure sufficient numbers of personnel would be available during hostile action.

The NRC subsequently became aware through inspections and communications with licensees that ORO plans must be reviewed to ensure sufficient numbers of personnel would be

available to respond during hostile action. The NRC communicated this need to licensees and OROs through RIS 2004-15, "Emergency Preparedness Issues: Post-9/11," dated October 18, 2004, which provided information on EP issues based on NRC staff observations from the EP component of force-on-force (FOF) exercises and lessons learned from the telephonic walk-through drills conducted with all power reactor sites between August and October 2005. In addition, DHS initiated the Comprehensive Review Program that conducted a review of site and ORO response to hostile action at every nuclear plant site. This review often identified a gap in ORO resource planning. Based on these findings and lessons learned from hostile action pilot program drills (see Section II.A.6 of this document), the NRC believes there is inconsistent implementation among licensees concerning effective coordination with OROs regarding the availability of adequate resources to respond to hostile action at a nuclear power plant.

Licensees and the supporting OROs have taken various actions to respond to this issue, but criteria for determining the adequacy of the licensee and ORO actions have not been established. The NRC considered encouraging industry to develop and implement a voluntary program; however, voluntary programs do not provide a consistent, NRC-approved means for addressing the needed enhancements in the post-September 11, 2001, threat environment. A voluntary approach would not have ensured consistent industry-wide implementation of the ICM requirements and there would have been no requirement for new licensees to incorporate the changes into their emergency plans.

The NRC is amending Part 50, Appendix E, Section IV.A.7, to explicitly include hostile action at the site as one of the types of emergencies that define the State, local, and Federal agencies that licensees must identify in their emergency plan along with the assistance licensees expect from them. These changes are discussed in Section IV of this document.

5. *Protection for Onsite Personnel*

The former § 50.47(b)(10) and Appendix E to Part 50 did not require specific emergency plan provisions to protect onsite emergency responders and other onsite personnel in emergencies resulting from hostile action at nuclear power plants. Licensees are required to provide radiological protection for emergency workers and the public in the plume exposure pathway emergency planning zone (EPZ), including actions such as warning of an emergency, providing for evacuation and accountability of individuals, and providing for protective clothing and/or radio-protective drugs. Many of these personnel are required by the site emergency plan that the licensee must follow and maintain. The emergency plan requires responders with specific assignments to be available on-shift 24 hours a day to minimize the impact of radiological emergencies and provide for the protection of public health and safety. However, in analyses performed after the terrorist attacks of September 11, 2001, the NRC staff determined that a lack of protection for emergency responders who are expected to implement the emergency plan could result in the loss of those responders and thus an inability to effectively implement the emergency plan.

The normal response actions for personnel protection, such as site evacuation, site assembly and accountability, and activation of onsite emergency response facilities, may not be appropriate in this instance because these actions may place at risk the response personnel necessary to mitigate plant damage resulting from the hostile action. BL-05-02 pointed out that actions different than those normally prescribed may be more appropriate during hostile action, particularly an aircraft attack. This may include actions such as evacuation of personnel from potential target buildings and accountability of personnel after the attack has concluded. Precise actions would depend on site-specific arrangements, such as the location of personnel in relation to potential targets. Procedures would need to be revised to ensure plant page announcements are timely and convey the onsite protective measures deemed appropriate.

The NRC considered other options to attempt to resolve this issue. The NRC considered taking no additional regulatory action and relying upon continuation of the voluntary initiatives currently being implemented by licensees as a result of BL-05-02. Taking no action could have resulted in the vulnerability of onsite personnel during hostile action. Action is necessary to ensure effective coordination to enable licensees to more effectively implement their pre-planned actions. Voluntary programs do not provide a consistent, NRC approved means for addressing needed enhancements. Further, the implementation of voluntary actions would not have ensured that these measures would be incorporated into emergency plans at new sites.

The NRC is revising Appendix E by creating new Section IV.I, to require licensees to protect onsite personnel during hostile action and to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the licensee's emergency plan, as discussed in Section IV of this document.

6. Challenging Drills and Exercises

A basic EP principle is that licensees conduct drills and exercises to develop and maintain key skills of ERO personnel. Drill and exercise programs contribute to the NRC determination of reasonable assurance that licensees can and will implement actions to protect public health and safety in the unlikely event of a radiological emergency. Implementation of the current regulations provides reasonable assurance of adequate protection of public health and safety at every nuclear plant site.

In the unlikely event that a licensee faces hostile action, the response organization will encounter challenges that differ significantly from those practiced in long-standing drill and exercise programs because these programs have not included hostile action scenarios. The former NRC regulations addressing this issue were general in nature and did not explicitly require licensees to include hostile action scenarios in drills and exercises, nor did they directly

allow the NRC to require specific scenario content. The NRC is amending its regulations to do so.

Following the terrorist attacks of September 11, 2001, the NRC conducted a review of the EP planning basis in view of the changed threat environment and concluded that the EP planning basis remains valid. The NRC observed licensee performance during numerous hostile action EP exercises and tabletop drills as well as several security FOF exercises. The NRC also discussed security-based EP issues with licensees and Federal, State, and local EP professionals and advocacy groups and issued BL-05-02 to collect information from licensees on the enhancements to drill and exercise programs to address the hostile action contingency.

Through these efforts, the NRC concluded that, although EP measures are designed to address a wide range of events, response to hostile action can present unique challenges not addressed in licensee and ORO drills and exercises, such as:

- Extensive coordination between operations, security, and EP personnel;
- Use of the alternative emergency response facilities for activation of the ERO;
- Execution of initial response actions in a hostile environment (i.e., during simulated hostile action);
- The need to shelter personnel from armed attack or aircraft attack in a manner very different from that used during radiological emergencies;
- Conduct of operations and repair activities when the site conditions prevent normal access due to fire, locked doors, security measures, and areas that have not yet been secured;
- Conduct of operations and repair activities with large areas of the plant damaged or on fire;
- Rescue of and medical attention to significant numbers of personnel; and

- Prioritization of efforts to protect plant equipment or to secure access to plant areas for repairs.

In response to BL-05-02, all nuclear power reactor licensees stated that they would develop and implement an enhanced drill and exercise program. Program elements were captured in NEI 06-04, Rev. 1, "Conducting a Hostile Action-Based Emergency Response Drill," a guidance document developed by NEI. The NRC endorsed this document for use in a pilot program in RIS 2008-08, "Endorsement of Revision 1 to Nuclear Energy Institute Guidance Document NEI 06-04, 'Conducting a Hostile Action-Based Emergency Response Drill,'" dated March 19, 2008. However, implementation of these enhancements was voluntary, and the NRC could not require licensees to maintain these enhancements, absent issuance of an order or a regulation.

The NRC also became aware of a related issue regarding EP exercise scenarios. The NRC inspects licensee response during these exercises and FEMA evaluates the capabilities of OROs. Licensees have performed many evaluated EP exercises and understand NRC and FEMA expectations. Licensees design scenarios in coordination with State and local agencies to demonstrate all key EP functions in a manner that facilitates evaluation. As a result, scenarios have become predictable and may precondition responders to sequential escalation of emergency classifications that always culminate in a large radiological release. Current biennial exercise scenarios do not resemble credible reactor accidents in that the timing is improbable and the intermittent containment failure typically used is unlikely. Typical scenarios used by licensees in biennial exercises involve simulated accidents, such as a loss of coolant accident or a steam generator tube rupture. However, certain predictable artifacts emerge in almost all biennial exercise scenarios, including the following:

- The ERO will not be allowed to mitigate the accident before a release occurs;
- The release will occur after a General Emergency is declared;

- The release will be terminated before the exercise ends; and
- The exercise will escalate sequentially through the emergency classes.

In short, responders may be preconditioned to accident sequences that are not likely to resemble the accidents they could realistically face.

In SRM-M060502, dated June 29, 2006, the Commission directed the NRC staff to develop exercise scenarios in conjunction with DHS, as follows:

The staff should coordinate with DHS to develop emergency planning exercise scenarios which would help avoid anticipatory responses associated with preconditioning of participants by incorporating a wide spectrum of releases (ranging from little or no release to a large release) and events, including security-based events. These scenarios should emphasize the expected interfaces and coordination between key decision-makers based on realistic postulated events. The staff should share experiences of preconditioning or “negative training” with DHS.

As a result of the SRM, a joint NRC/FEMA working group was formed to review the development of emergency planning exercise scenarios. The working group was assigned the task of identifying the NRC and FEMA regulations that would require revision to enhance exercise scenarios and guidance to assist in the effective implementation of these regulations. The working group recommended several changes to the FEMA Radiological Emergency Preparedness (REP) Program Manual that comport with this final rule to address preconditioning and the incorporation of hostile action exercise scenarios.

FEMA held focus group meetings in several FEMA regions to discuss potential policy changes to the REP Program Manual. The NRC supported these meetings to facilitate questions as they related to the EP rulemaking issue of challenging drills and exercises. For example, stakeholders voiced opinions on the requirements for the development and review of

exercise scenarios, whether all emergency classification levels (ECLs) must be included in each exercise or if one or more ECLs can be skipped, how radiological release conditions and options could vary, and if a spectrum of scenarios will be varied to create more realistic and challenging exercises. Comments received from the several different focus groups and stakeholders informed this rulemaking, new guidance documents associated with this rulemaking, and an update to the REP Program Manual.

A regulatory change is necessary to enhance scenario content to include hostile action scenarios and reduce preconditioning through a wide spectrum of challenges. This change will improve licensee ERO capability to protect public health and safety under all accident scenarios as well as reverse any trend toward preconditioning.

The NRC also considered not making any change to the regulations, but rejected that option because it would not adequately address the concerns discussed above. The NRC also discussed the use of voluntary programs and although this option could be successful, the NRC could not require that changes made would be permanent and consistent across all sites.

The NRC is revising Appendix E, Section IV.F, to address these issues, as discussed in Section IV of this document.

B. Non-Security Related EP Issues

The remaining changes are new or amended requirements that result in a substantial increase to public health and safety because they maintain or strengthen the ability of licensees to effectively implement their emergency plans.

1. *Backup Means for Alert and Notification Systems*

The regulations for alert and notification system (ANS) capabilities are found in § 50.47(b)(5) and Part 50, Appendix E, Section IV.D.3, and require licensees to establish the capability to promptly alert and notify the public if there is an emergency event while meeting certain ANS design objectives. The former regulations did not require backup power for sirens

or other backup ANS alerting capabilities when a major portion of the primary alerting means is unavailable. The regulations also did not address backup notification capabilities. If a major portion of a facility's ANS is unavailable and no backup exists, then the public may not be promptly alerted of an event at the facility and the protective actions to be taken, which could affect the public's response to the event.

An ANS provides the capability to promptly alert the populace within the plume exposure pathway EPZ of a nuclear power plant in case of an emergency event and to inform the public what protective actions may need to be taken. The predominant method used around U.S. nuclear power plants for alerting the public is an ANS based on sirens to provide an acoustic warning signal. Some sites employ other means, such as tone alert radios and route alerting, as either primary or supplemental alerting methods. The public typically receives information about an event and offsite protective actions via emergency alert system (EAS) broadcasts or other means, such as mobile loudspeakers.

In several instances, nuclear power plants have lost all or a major portion of the alert function of an ANS for short time periods for various reasons, such as damage to ANS components caused by severe weather, loss of offsite alternating current (AC) power, malfunction of ANS activation equipment, or unexpected problems resulting from ANS hardware/software modifications. In other situations, the notification capability has been lost (e.g., the inability to activate tone alert radios, which are used to provide both an alert signal and notification function).

The NRC has issued multiple INs to document the circumstances when ANS failures have occurred, including IN 2002-25, "Challenges to Licensees' Ability to Provide Prompt Public Notification and Information During an Emergency Preparedness Event," dated August 26, 2002; IN 2005-06, "Failure to Maintain Alert and Notification System Tone Alert Radio Capability," dated March 30, 2005; and IN 2006-28, "Siren System Failures Due to Erroneous

Siren System Signal,” dated December 22, 2006. IN 1996-19, “Failure of Tone Alert Radios to Activate When Receiving a Shortened Activation Signal,” dated April 2, 1996, addressed the inability to activate some tone alert radios because of a shorter tone activation signal permitted as part of EAS implementation. Without the ability to warn the population, the effectiveness of the notification element may be significantly reduced. Having a backup means in place would lessen the impact of the loss of the primary ANS.

Other events impacting ANS operability have involved the widespread loss of the electrical grid providing power to siren based systems, such as the electrical blackout in several areas of the northeastern United States and portions of Canada in August 2003. As discussed in RG 1.155, “Station Blackout,” dated August 1988, although the likelihood of failure of the onsite AC power system coincidental with the loss of offsite power is small, station blackout events may be substantial contributors to core damage events for some plants.

The U.S. Congress recognized that all emergency notification systems may not operate in the absence of an AC power supply and encouraged the use of newer alerting and notification technology. In U.S. House of Representatives Committee on Appropriations Report 107-740, FEMA was directed to update its guidance on outdoor warning and mass notification systems and require all warning systems to be operable in the absence of an AC power supply. The House Appropriations Committee also urged FEMA to consult with other relevant agencies and revise the national standard for outdoor warning and mass notification to reflect state-of-the-art technology. Moreover, the Energy Policy Act of 2005 directed the Commission to require backup power for the emergency notification system, including siren systems, for nuclear power plants located where there is a permanent population, as determined by the 2000 decennial census, in excess of 15,000,000 within a 50-mile radius of the power plant. Therefore, it was appropriate that the NRC also considered changes to its existing regulations and guidance regarding warning systems for all nuclear power reactor

licensees.

The NRC considered several options to attempt to resolve this issue, including reliance on ANS design review standards and related guidance documents to address ANS backup means. Several NRC and FEMA guidance documents, such as NUREG-0654, FEMA-REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," dated November 1985, and FEMA Guidance Memorandum AN-1, "FEMA Action to Qualify Alert and Notification Systems Against NUREG-0654/FEMA-REP-1 and FEMA-REP-10," dated April 21, 1987, contain detailed information on ANS capabilities and design review methodology. Additional information on ANS backup capabilities could be provided in revisions to these documents. As guidance, a provision for an ANS backup means would not be considered a requirement and its applicability to existing approved ANS designs would be considered optional. As noted previously in this discussion, FEMA was also directed to update its guidance to require all warning systems to be operable in the absence of an alternating current power supply. However, guidance changes limited to backup power requirements for the alerting function would not address backup capabilities for other types of alerting devices or the ANS notification function. In summary, this option did not provide a regulatory resolution to ensure that nuclear power plant ANS designs include a backup method to the primary means for both alerting and notification, and thus the NRC considered this option to be unacceptable.

Use of a voluntary approach for ANS backup means was also considered. Some current nuclear power plant ANS designs address one or more aspects of backup ANS capabilities, such as providing backup power in the event primary power to sirens is lost, using backup route alerting when sirens are inoperable, designating multiple EAS broadcast stations to ensure that instructional messages can be transmitted, or using reverse 911 systems. A voluntary approach was considered as an option because State and local authorities can usually compensate for the temporary loss of some ANS capabilities. However, allowing licensees or

applicants to voluntarily install backup ANS capabilities will not ensure that both the alerting and notification functions are addressed, or that new sites will have warning systems designed with comprehensive backup ANS capabilities. Given the importance of ANS to alert the public of an event at a facility and the protective actions to be taken, and without any voluntary industry commitment that existing or new warning systems will have a backup means available, the NRC considered a voluntary approach to be inappropriate and found this option unacceptable.

The NRC believes that nuclear power reactor licensees must be required to have backup ANS methods and therefore is amending its regulations to address backup capabilities for both the alert and notification functions. The NRC considered three alternatives for addressing this issue in rulemaking.

The first alternative would have added a regulatory requirement for ANS backup power. The most common warning system used at U.S. nuclear power plants is based on sirens that are powered directly, or indirectly through batteries, by an AC power source. As noted previously in this discussion, the loss of power is not the only failure mode that can impact warning systems. Causes of past ANS inoperability problems have included the inability to detect siren failures, the inability to activate sirens, the failure to test and maintain personal home alerting devices, the use of telephone call-inhibiting devices, and the failure to provide and maintain distribution lists of tone alert radios. Thus, a regulatory requirement addressing only backup ANS power would not have eliminated any of these other failure modes. This approach would have prescribed one specific method as a backup means, precluding licensees (or applicants) and offsite officials from considering alternative methods, such as route alerting or newer communications technology, that may be more suitable for certain nuclear power plant sites. In summary, it would have addressed only one of several ANS failure modes (i.e., loss of AC power) for one alerting method (i.e., sirens). It would not have addressed backup methods for other types of alerting devices or any part of the notification process. Therefore, the NRC

considered this approach to be unacceptable.

The second alternative would have required that the primary ANS be designed so no common single failure mode for the system existed; therefore, a backup system would not have been needed. This approach would have ensured that the entire ANS was designed and built to a very high level of reliability. Any equipment necessary for ANS activation and operation (e.g., computers, radio transmitters and radio towers, plus the actual alerting devices and notification means) would have had redundant components and power sources as necessary to eliminate any common single failure mode, such as a widespread power outage affecting a siren based system. However, ensuring that all ANS common single failure vulnerabilities have been identified and adequately addressed would have been difficult. Even after extensive analysis and testing of a warning system, a common failure mechanism may not have become evident until the system was activated for an emergency event. For a siren based system, several additional sirens (with backup power capabilities) may have been needed to be installed to provide overlapping acoustic coverage in the event clusters of sirens fail and thus may have discouraged licensees at future nuclear power plant sites from using these systems due to the increased cost for installing additional sirens. This approach may not have been applicable to non-electronic primary warning systems based on other methods, such as route alerting. For these reasons, the NRC considered this approach to be unacceptable. Rejecting this approach does not mean that the issue of backup power for warning systems will be left unaddressed. As discussed previously, the House Committee on Appropriations directed FEMA to require all outdoor warning systems to be operable in the absence of AC power.

The third alternative was selected and revises Part 50, Appendix E, Section IV.D.3, to require a backup capability should the primary means of public alerting and notification be unavailable. These changes are discussed in Section IV of this document.

2. Emergency Declaration Timeliness

Emergency declaration is the process by which a licensee determines whether an off-normal plant condition warrants declaration as an emergency and, if so, which of the four emergency classes – Notification of Unusual Event, Alert, Site Area Emergency, or General Emergency – is to be declared. In its oversight of licensee EP programs, the NRC has observed several licensees whose responses in performing emergency declarations were inappropriately delayed. Between 2000 and 2009, the NRC identified 13 situations in which an emergency declaration was either not done or inappropriately delayed during an actual event, which resulted in findings and cited and non-cited violations. These situations may have been a result of a lack of a specific regulatory timeliness requirement.

Emergency declarations are fundamental to the licensee’s EP program in that onsite and offsite emergency response activities are implemented in a staged, proportional manner, based upon the level of the declared emergency. If an emergency declaration is delayed, the subsequent emergency response actions may not be timely. Emergency response personnel, facilities, and equipment may not be in position should it become necessary to implement measures to protect public health and safety.

The NRC has issued generic communications to alert licensees of these concerns and to advise them of the NRC’s expectation that emergency classifications¹ are made in a prompt manner. In 1985, the NRC published IN 85-80, “Timely Declaration of an Emergency Class, Implementation of an Emergency Plan, and Emergency Notifications,” to alert licensees of two instances in which declarations and/or notifications of an actual emergency condition were significantly delayed and to express the NRC expectation of timely emergency declarations. In 1995, the NRC found it necessary to publish Emergency Preparedness Position (EPPOS)-2, “Emergency Preparedness Position (EPPOS) on Timeliness of Classification of Emergency

¹ Early NRC generic communications routinely used the phrase “emergency classification” to denote the outcome of the process to assess, classify, and declare an emergency condition. This document uses the phrase “emergency declaration” in place of “emergency classification” except when summarizing an earlier document.

Conditions,” to provide guidance to NRC staff in evaluating licensee performance in the area of timely classification. The NRC cited classification delays in actual events and exercises as the reason for issuing the guidance. EPPOS-2 provided the NRC expectation that the classification should be made promptly following indications that conditions have reached an EAL threshold and that 15 minutes was a reasonable goal for completing the classification once indications are available to the control room operators. The NRC based that conclusion on the belief that 15 minutes is a reasonable period of time for assessing and classifying an emergency once indications are available to cognizant personnel, and that a delay in classification for up to 15 minutes would have a minimal impact upon the overall emergency response and protection of the public health and safety. The NRC noted that emergency classification schemes have reached a level of maturity in which the classification of emergencies can be accomplished in a relatively short period of time once the abnormal condition and associated plant parameters are known by cognizant licensee personnel. EPPOS-2 stated that the 15-minute period was not to be viewed as a grace period in which a licensee could resolve a condition that had already exceeded an EAL threshold to avoid a declaration.

This 15-minute goal was not a regulatory requirement but rather a guideline for NRC staff evaluation of a licensee’s performance in responding to an actual radiological emergency. This goal was subsequently incorporated as a criterion in the industry proposed and NRC approved Reactor Oversight Process (ROP) EP Cornerstone performance indicators (PIs). Although the reported classification performance during drills and exercises remains high, there have been several instances during actual events in which classifications were inappropriately delayed. Although these actual events did not warrant public protective measures, this may not always be the case.

The NRC considered the following options for addressing this regulatory problem. The first option, take no action, was rejected because it would not address the regulatory problem.

The second option, continue to rely on the industry's voluntary PI, was rejected because the existence of the PI has not prevented untimely classifications during actual emergencies. Although these occurrences were associated with Notification of Unusual Events or Alerts, the observed weaknesses could also have occurred under different circumstances in which the potential impact to the public could have been greater. The third option, issue regulatory guidance, was rejected because although regulatory guidance is an appropriate mechanism for identifying acceptable means for complying with regulatory requirements, there was no regulatory requirement that emergency declarations meet any particular timeliness criterion. The fourth option, an amendment of the regulations, is the best course of action to ensure that licensees are aware that they are responsible for completing emergency declarations in a timely manner in the event of a radiological emergency.

The NRC also considered providing either a *performance* criterion or a *capability* criterion. Similar to the notification timeliness criterion in Appendix E, Section IV.D.3., in which the NRC requires licensees to be capable of notifying responsible State and local governmental agencies within 15 minutes after declaring an emergency, the NRC opted to propose a capability criterion, rather than an inflexible performance criterion. This approach allows licensees some degree of flexibility during an actual radiological emergency in addressing extenuating circumstances that may arise when an emergency declaration may need to be delayed in the interest of performing plant operations that are more urgently needed to protect public health and safety. These delays could be found acceptable if they did not deny State and local authorities the opportunity to implement actions to protect the public health or safety under their emergency plans and the cause of the delay was not reasonably within the licensee's ability to foresee and prevent. Based upon these considerations, the NRC is amending Part 50, Appendix E, Section IV.C, to address this issue by providing a capability criterion. These changes are discussed in Section IV of this document.

In the proposed rule, the NRC asked for public comment on whether the NRC should add requirements for non-power reactor licensees to assess, classify, and declare an emergency condition within 15 minutes and promptly declare an emergency condition. The NRC received several comments on these issues. The NRC believes there may be a need for the NRC to be aware of security related events early on so that an assessment can be made to consider the likelihood that the event is part of a larger coordinated attack.

The NRC also believes declarations for non-security related events should be made in a timely fashion, but not necessarily with the same urgency as security related events. For example, in 2008 a tornado damaged the building that houses a non-power reactor. NRC assistance, which was coordinated between NRC headquarters and NRC Region IV, could have been deployed earlier and with more detailed information if the emergency information was available to the NRC earlier.

However, the NRC has determined that further analysis and stakeholder interactions are needed prior to changing the requirements for non-power reactor licensees. Therefore, the NRC has not included requirements in the final rule for non-power reactor licensees to assess, classify, and declare an emergency condition within 15 minutes and promptly declare an emergency condition.

3. Emergency Operations Facility – Performance-Based Approach

Several nuclear power reactor licensees have submitted requests for NRC approval to combine EOFs for plants they operate within a State or in multiple States into a consolidated EOF. In some instances, the consolidated EOF is located at a substantial distance from one or more of the plant sites and is no longer considered a “near-site” facility, as required by the former §§ 50.34(f)(2)(xxv), 50.47(b)(3), 50.47(d)(1), 50.54(gg)(1)(i), and Appendix E, Sections II.H., IV.E.8., IV.E.9.c., and IV.E.9.d. Guidance documents, including NUREG-0696, “Functional Criteria for Emergency Response Facilities,” dated February 1981, and

NUREG-0737, "Clarification of TMI Action Plan Requirements," Supplement 1, "Requirements for Emergency Response Capabilities," dated January 1983, that provide criteria for establishing and locating emergency response facilities also refer to the EOF as a near-site facility.

However, the regulations and guidance did not explicitly define the term "near-site." This regulatory structure resulted in confusion for licensees with reasonable technical bases for moving or consolidating EOFs that would no longer be considered "near-site" and led to requests for exceptions to NRC guidance and exemptions from NRC regulations to move or consolidate their EOFs.

In addition, neither regulations nor guidance documents addressed the capabilities and functional requirements for a consolidated EOF, such as capabilities for handling simultaneous events at two or more sites, or having provisions for the NRC and offsite officials to relocate to a facility nearer the site if they desire. Thus, licensees have been uncertain about when they need to submit requests for exceptions or exemptions, which alternative approaches to existing EOF distance and other facility criteria may be acceptable, and what additional capabilities they need to address for a consolidated EOF. A regulatory mechanism (§ 50.54(q)) is already in place that allows licensees to make changes to their emergency plans without prior Commission approval when certain conditions are met. This mechanism could have been applied to consolidation of EOFs if clearer criteria had been established. In the absence of clear criteria, several recent licensee requests to consolidate EOFs have been evaluated by the NRC staff and reviewed by the Commission on a case-by-case basis.

Each nuclear power plant site is required to have an EOF where the licensee provides overall management of its resources in response to an emergency and coordinates emergency response activities with Federal, State, local, and tribal agencies. The original EOF siting criteria called for the facility to be located near the nuclear power reactor site and imposed a 20-mile upper limit (later modified by the Commission to 25 miles) for the distance between the

site and the EOF. This upper limit was generally considered to be the maximum distance from the nuclear power reactor site within which face-to-face communications between the licensee, offsite officials, and NRC staff could be facilitated, and which also permitted the timely briefing and debriefing of personnel going to and from the site. However, advances in computer and communication technology after the original EOF siting criteria were established now allow EOF functions to be effectively performed independent of distance from the site. Computer based systems allow plant parameter, meteorological data, and radiological information for multiple sites to be collected, analyzed, trended, and displayed in a remotely located facility. Data and voice communications between the EOF and other onsite/offsite emergency response facilities can be addressed through a variety of independent systems, such as microwave, telephone, internet, intranet, and radio, which provide a high degree of availability and reliability.

Furthermore, nuclear utility consolidation has resulted in initiatives to standardize fleet emergency plans, use consolidated EOFs, and staff EOFs by designated corporate personnel. Standardized plans, implementing procedures, and accident assessment tools, such as a common dose projection model, allow emergency responders in a consolidated facility to effectively perform their functions for multiple sites, even if the EOF is not a near-site facility. Consolidated facilities eliminate the need to duplicate work space, displays, communication networks, and other capabilities for each site. Consolidated facilities can also be located at or near corporate offices where nuclear support personnel designated to fill EOF positions can respond more quickly.

The Commission, in the SRM to SECY-04-0236, "Southern Nuclear Operating Company's Proposal to Establish a Common Emergency Operating Facility at Its Corporate Headquarters," dated February 23, 2005, directed the NRC staff to consider resolving these issues through rulemaking. In that SRM, the Commission approved the proposal for a consolidated EOF for three nuclear power reactor sites operated by Southern Nuclear Operating

Company at the company's corporate headquarters. The Commission also instructed the NRC staff to consider making "the requirements for EOFs more performance based to allow other multi-plant licensees to consolidate their EOFs, if those licensees can demonstrate their emergency response strategies will adequately cope with an emergency at any one of the associated plants."

To address the EOF "near-site" and consolidation issues, the NRC considered maintaining EOF distance criteria as guidance only and to specify other EOF criteria in guidance rather than in the regulations. However, providing these criteria as guidance only would not have ensured that future applicants would follow the criteria. Thus, an EOF could have been located within 10 miles of a site with no backup facility provided, or could have been located beyond 25 miles of a site without providing a facility closer to a site for NRC site team and offsite response personnel. An EOF could have been implemented without meeting the proposed performance based criteria. A licensee could have relocated or consolidated an existing approved facility without meeting all or some of the criteria and without prior NRC approval as long as the licensee determined that the provisions of § 50.54(q) were met. Under these circumstances, an EOF could have been implemented that may not have provided all of the capabilities that the NRC believes are necessary for such a facility to be fully effective. Therefore, the NRC determined that this option would not have been appropriate.

The NRC also considered revising the regulations (and providing associated performance-based criteria) to allow an EOF to be located more than 25 miles from a nuclear power reactor site without prior NRC approval only in situations involving the consolidation of EOFs for multiple sites operated by the same licensee. However, the NRC determined that excluding licensees from the ability to locate an EOF for a single site, or to co-locate an EOF for two or more nuclear power plants operated by different licensees, at distances beyond 25 miles from a site without prior NRC approval would have been unnecessarily restrictive. The

capability of existing EOFs located more than 25 miles from a site to function as effective emergency response facilities has been demonstrated in numerous exercises and several actual events, indicating that the distance between the EOF and a site is not a critical factor in determining the overall effectiveness of the facility. A single-site or co-located EOF at greater distances from a nuclear power plant may also offer benefits to licensees and offsite officials in terms of increased staffing flexibility and reduced response times. Licensees may be able to use additional employees as EOF emergency responders (who would otherwise be unavailable due to long response times) when the EOF is located closer to their workplace, such as a corporate office, or areas where these employees reside. Offsite officials that report to the EOF may have shorter response times when the EOF can be located in the vicinity of Government facilities, or they may be able to co-locate their emergency operations at the EOF.

For these reasons, the options for EOF locations should be available to all licensees as long as the EOF meets the applicable functional requirements associated with consolidated EOFs previously approved by the NRC and licensees provide a facility closer to the site in situations where the EOF is more than 25 miles from a site. This approach ensures that an EOF has the capabilities necessary to be fully effective regardless of its location with respect to the nuclear power plant site, and that provisions are in place for a facility closer to the site for use by NRC site team and offsite responders. Therefore, the NRC is amending its regulations (and associated guidance) so the criteria for all EOFs reflect a performance based approach. The NRC is also amending its regulations (and guidance) to remove the references to an EOF as a “near-site” facility and to incorporate specific EOF distance criteria into the regulations, as discussed in Section IV of this document.

In a conforming change, the NRC is revising § 52.79(a)(17) to clarify that combined license applications need not address the requirement governing TSCs, OSCs and EOFs in § 50.34(f)(2)(xxv). Instead, the requirements in Appendix E, Section IV.E.8.a.(i) apply. That

section accurately reflects the need for the combined license application to address an EOF; by contrast § 50.34(f)(2)(xxv) requires only applicants for construction permits (and not combined licenses) to address an EOF. The NRC considered, as an alternative to modifying § 52.79(a)(17), correcting § 50.34(f)(xxv) to remove the language limiting the requirement to address an EOF to construction permit applications. The NRC decided not to adopt that approach, but instead have the general requirements for EP, including Appendix E, apply to combined license applications by virtue of § 52.79(a)(21).

4. Evacuation Time Estimate Updating

The former § 50.47(b)(10) and Part 50, Appendix E, Sections II.G, III, and IV, required nuclear power plant operating license applicants to provide evacuation time estimates (ETEs) for the public located in the plume exposure pathway EPZ. These ETEs are used in the planning process to identify potential challenges to efficient evacuation, such as traffic constraints, and, in the event of an accident, to assist the 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 ETEs following the initial licensing of the plant. Although some licensees do revise ETEs based on updated census data, the use of ETEs in evacuation planning is inconsistent and generally does not affect the development of public protective action strategies.

Nuclear power reactor operating license applicants are responsible for developing the ETE analysis for their respective sites. They submit the analysis to the NRC in support of their emergency plans, usually as a stand-alone document. Within the ETE analysis, there are multiple ETE values for different scenarios developed for combinations of variables and events under varying conditions. For example, there are different ETE values based on season (summer or winter), day of the week (midweek or weekend), time of day (daytime or evening), and weather conditions (normal or adverse). Applicants include the results of the ETE analysis

in the onsite emergency plan and in the emergency plan implementing procedures for protective action recommendations. The ETEs are also in the offsite emergency plans for the State and local governments within the plume exposure pathway EPZ.

In NUREG/CR-6953, Vol. 1, "Review of NUREG-0654 Supplement 3, Criteria for Protective Action Recommendations for Severe Accidents," dated December 2007, the NRC presented the results of a study of its protective action recommendation guidance. The NRC concluded in the study that ETE information is important in developing public protective action strategies and should be used to identify enhancements to evacuation plans. The effectiveness of protective action recommendation strategies is sensitive to the ETE, and therefore, it is important to reduce the uncertainties associated with ETE numerical values. Improving the accuracy of ETE values helps licensees recommend and offsite officials determine the most appropriate protective action. For instance, in the study, the NRC determined that for some scenarios sheltering may be more protective than immediate evacuation if the evacuation time is longer than a few hours, depending on site-specific factors. Further, the NRC concluded that the effect of population change upon evacuation times should be understood by OROs and incorporated into offsite protective action strategies.

To address this issue, the NRC is amending the regulations to require licensees to assess changes to the EPZ population. The NRC believed that changes in infrastructure, or addition of a large subdivision to the EPZ, could also impact the ETE. The NRC consulted with Sandia National Laboratories (SNL), who are experts in emergency evacuations and have researched and developed several NRC studies related to evacuation (e.g., NUREG/CR-6863, "Development of Evacuation Time Estimates for Nuclear Power Plants," dated January 2005, NUREG/CR-6864, "Identification and Analysis of Factors Affecting Emergency Evacuations," January 2005, and NUREG/CR-6953). Based upon their expert opinion, SNL confirmed that the major contributor to changes in ETE values is changes in population. Population changes have

a direct correlation to the volume of vehicles on the roadway, which directly affects the roadway capacity. Although changes in infrastructure can impact roadway capacity, changes sufficient to impact the ETE by more than a few minutes, such as the addition of an interstate highway, take many years to plan and construct. Because population changes occur continuously, change in population is considered the more appropriate metric to monitor the potential effect on roadway capacity. Therefore, the NRC is revising the regulations to explicitly require ETE updates based on population changes that cause the ETE values within the analysis to exceed a specified threshold.

The NRC also considered using guidance as a means to solve the problem of the lack of specificity in regulations directing applicants and licensees on the periodicity for updating ETEs. Although the availability of more detailed guidance would provide applicants and licensees with the tools to better update their ETEs, this option would not have provided the regulatory means for enforcing the desired frequency of ETE updates and consistency of ETE determinations.

Therefore, the NRC is amending § 50.47(b)(10) and Part 50, Appendix E, Section IV, to require the periodic review and updating of ETEs. NRC guidance for completing the ETE analysis and required ETE updates is contained in NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies."

5. Amended Emergency Plan Change Process

Applicants for operating licenses under Part 50 for nuclear power reactors, research reactors, and certain fuel facilities, and early site permits (as applicable) and combined licenses under Part 52 for nuclear power plants, are required by regulation to develop emergency plans that meet the requirements of Appendix E to Part 50 and, for nuclear power reactor license applicants, the standards of § 50.47(b). After the facility license was issued, the holder of the license was required by the former § 50.54(q) to follow and maintain in effect emergency plans

that met the requirements of Appendix E and, for nuclear power reactor licensees, the standards of § 50.47(b). The former § 50.54(q) also provided a process under which a licensee could make changes to its approved emergency plan without prior NRC approval provided the changes would not decrease the effectiveness of the emergency plan as approved and the plan, as modified, would continue to meet applicable regulations. However, the NRC determined that the language of the former § 50.54(q) did not clearly describe the requirements the NRC intended to impose on licensees, leading to confusion and inefficiencies in implementation.

A licensee must follow and maintain the effectiveness of its emergency plan if the NRC is to continue to find, under § 50.54(s)(2)(ii), that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. The EP regulations generally refer to the onsite emergency plan as a stand-alone document. However, an emergency plan relies upon facility capabilities, equipment, and resources that are typically outside of the control of the licensee's emergency planning organization. The NRC has identified several occurrences in which licensee personnel outside of the emergency planning group have changed the status of capabilities and resources under their cognizance without considering the impact on the effectiveness of the emergency plan or without alerting the emergency planning group.

Several enforcement actions in the past few years have been associated with EALs being rendered ineffective by configuration changes made to instruments referenced in an EAL without the change being reflected in the EAL, or without a compensatory action being put into place. Examples include modifications to installed seismic instruments that eliminated the direct readout of acceleration needed for classifying a seismic event and changes in reactor vessel level criteria (in a boiling water reactor) being made without a conforming change being made to the EAL. In another finding, concrete barriers installed in a security-initiated change blocked a site access road required by the emergency plan to be used for site evacuation. Another

licensee failed to provide adequate oversight on utility (external to the plant) personnel maintaining the site's ANS, resulting in degradation of that system and subsequent enforcement actions. Based on its experience in reviewing root cause analyses and corrective actions associated with inspection findings, the NRC believes that an underlying cause of these occurrences is often that the licensees' configuration control programs did not adequately consider the impact of configuration changes on the effectiveness of their emergency plans.

The NRC determined that the phrase "maintain in effect" in the former § 50.54(q) was not adequately clear in conveying the NRC expectation that an effective emergency plan also requires maintaining the various capabilities and resources identified and relied on in the plan. The phrase "maintain in effect," as applied to an emergency plan in § 50.54(q), has two senses: the first is that the plans are in force; the second is that the plans can achieve the desired result of providing reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Accordingly, the NRC is amending § 50.54(q) to clarify that the regulatory intent is both senses by requiring licensees to follow and "maintain the effectiveness" of their approved emergency plans.

The former § 50.54(q) also provided a process under which a licensee could make changes to its approved emergency plan without prior NRC approval provided the changes did not decrease the effectiveness of the emergency plan as approved and the plan, as modified, continued to meet applicable regulations. Prior NRC approval was required for any change that decreased the effectiveness of the emergency plan. The NRC and licensees experienced significant difficulties in implementing this portion of § 50.54(q) because the former rule language did not define what constituted a decrease in effectiveness of an emergency plan nor did it identify the type of changes that would constitute a decrease in effectiveness of the plan. The lack of clear evaluation criteria resulted in regulatory inefficiencies, such as licensees submitting for review changes that did not rise to the level requiring prior NRC approval and

enforcement actions due to licensees failing to submit changes that were later deemed to warrant such a review. A large fraction of the enforcement actions in the EP Cornerstone can be attributed to these findings.

The NRC attempted to resolve this issue through the publication of regulatory guidance. In 1998, the NRC issued EPPOS-4, "Emergency Plan and Implementing Procedure Changes," to provide guidance to NRC inspectors regarding their review of licensees' emergency plan changes. In 2004, the NEI submitted two white papers proposing a definition of "decrease in effectiveness" for NRC consideration. The NRC could not reach consensus with NEI and thus, did not endorse the NEI guidance. In 2005, the NRC withdrew EPPOS-4 and issued RIS 2005-02, "Clarifying the Process for Making Emergency Plan Changes," dated February 14, 2005, to (1) clarify the meaning of "decrease in effectiveness," (2) clarify the process for making changes to an emergency plan, and (3) provide some examples of changes that are not decreases in effectiveness. Although RIS 2005-02 provided useful guidance, the NRC and NEI have continued to discuss ways to improve the § 50.54(q) change process, including the use of a regulatory framework parallel to that of § 50.54(a)(3) for quality assurance programs, § 50.54(p)(2) for safeguards plans, and § 50.59, "Changes, Tests, and Experiments."

During the development of this rulemaking, the NRC identified a concern regarding the process to be used by the NRC for reviewing proposed emergency plan changes. The former § 50.54(q) directed the licensee to submit such changes under the provisions of § 50.4, which provides the procedures for making certain submissions to the NRC. Some confusion existed as to whether all proposed emergency plan changes submitted under § 50.4 would result in a decrease in effectiveness and whether Commission review of such submissions was necessary. The final rule specifies that the license amendment process of § 50.90 is to be used when submitting a proposed emergency plan change that the licensee has determined constitutes a

reduction in effectiveness of the plan. The final rule language addresses this clarification. (See Section IV of this document for further discussion.)

The NRC also considered other options for addressing the § 50.54(q) problems. Using a voluntary industry initiative was rejected because the NRC and NEI had yet to agree on the best approach to resolve the problems. Issuing more regulatory guidance was rejected because that approach had been tried but had not resolved the problems. The NRC determined that an amendment to the regulations, supplemented as necessary by regulatory guidance, is the best course of action to ensure that (1) the effectiveness of the emergency plans is maintained, (2) changes to the approved emergency plan are properly evaluated, and (3) any change that reduces the effectiveness of the plan is reviewed by the NRC prior to implementation.

Accordingly, the NRC is amending § 50.54(q) to replace the existing language and is making conforming changes in Part 50, Appendix E, Section IV.B. The NRC is issuing RG 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," to describe a method acceptable to the NRC for demonstrating compliance with the final rule.

6. Removal of Completed One-Time Requirements

The NRC is eliminating several regulatory provisions that required holders of licenses to take certain one-time actions to improve the state of EP following the Three Mile Island incident in 1979. These actions are complete and the requirements are no longer binding on any current licensee. Corresponding requirements for license applicants are provided in §§ 50.33 and 50.34.

The requirements being removed are:

(1) Section 50.54(r), which required licensees of research or test reactors to submit emergency plans to the NRC for approval by September 7, 1982, and, for the facilities with an authorized power level of less than 2 MW thermal, by November 3, 1982. There is no longer a need for this provision because this requirement has expired. The NRC is deleting this

requirement and designating the section as “reserved.”

(2) Section 50.54(s)(1), which required nuclear power reactor licensees to submit State and local governmental emergency plans within 60 days of the November 3, 1980, effective date of the rule that added § 50.54(s)(1) to Part 50, and that date has elapsed. That portion of § 50.54(s)(1) that discussed the size of the EPZs was not identified for deletion in the proposed rule, but after further review the NRC has determined that it does not need to be retained. The size of EPZs for nuclear power reactors is addressed in other parts of NRC’s regulations. Section 50.33(g), which is applicable to the content of new Part 50 and Part 52 applications (with complete and integrated emergency plans), contains the same language regarding the size of EPZs as found in § 50.54(s)(1). Section 50.47(c)(2) also has the same language regarding the size of EPZs as §§ 50.33(g) and 50.54(s)(1). Moreover, Part 50 Appendix E, Section I, footnote 1, addresses the size of EPZs with language equivalent to §§ 50.33(g) and 50.54(s)(1). Therefore, the NRC is deleting § 50.54(s)(1) in its entirety and designating the section as “reserved.”

(3) Section 50.54(s)(2)(i), which required that nuclear power reactor licensee, State, and local emergency response plans be implemented by April 1, 1981. There is no longer a need for this provision because this requirement has expired. The NRC is deleting § 50.54(s)(2)(i), designating the section as “reserved.”

(4) Section 50.54(u), which required nuclear power reactor licensees to submit, within 60 days of the November 3, 1980, effective date of the rule that added § 50.54(u) to Part 50, to the NRC plans for coping with emergencies that meet the standards in § 50.47(b) and the requirements of Appendix E. There is no longer a need for this provision because this requirement has expired. The NRC is deleting this requirement and designating the section as “reserved.”

The NRC is eliminating these completed one-time requirements in the interest of

regulatory clarity. Eliminating these requirements will not relax any currently effective regulatory requirement and will cause no regulatory burden on any current or future licensee or applicant.

III. Public and Stakeholder Input to the Final Rule

A. Public and Stakeholder Meetings

As part of its comprehensive assessment of the NRC's EP regulations and guidance and development of this rule, the NRC staff met with internal and external stakeholders, including FEMA management, on numerous occasions including the following:

1. Meetings with NRC regional EP inspectors in January 2005 and January 2006;
2. Meetings with State, local, and Tribal governments and nuclear power industry representatives at the NREP Conference on April 11-14, 2005, March 27-30, 2006, and April 7-10, 2008;
3. Public meeting with interested stakeholders on August 31 and September 1, 2005;
4. Public meeting with non-governmental organizations (NGOs) on May 19, 2006;
5. Public meeting with the NEI/nuclear power industry representatives on July 19, 2006;
6. Regional meetings with State and local representatives and nuclear power industry working groups that started in 2007;
7. NRC Regulatory Information Conference on March 16, 2007;
8. Public meeting with external stakeholders on March 5, 2008;
9. Meeting with nuclear power industry representatives at the 2008 NEI EP and Communications Forum;
10. Public meeting with external stakeholders on July 8, 2008;
11. Public meetings to discuss the proposed rule on enhancements to EP regulations

- and related guidance documents in June 2009 held jointly by the NRC and FEMA (a total of 11 public meetings);
12. Public meeting to discuss the proposed rule on enhancements to EP regulations and related guidance documents on September 17, 2009;
 13. Commission meeting to provide an overview of comments received by the NRC and FEMA during the proposed rule public comment period and remaining milestones in the EP rulemaking process on December 8, 2009; and
 14. Public meeting to discuss feedback on proposed implementation dates for the final rule on November 15, 2010.

The NRC also met routinely with representatives of FEMA to coordinate 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 alignment and regulatory consistency. In addition, FEMA attended the NRC public meetings regarding the NRC's EP rulemaking, and co-hosted 11 of the public meetings with the NRC held after the issuance of the proposed rule.

B. Public and Stakeholder Comments Received

At the April 11, 2005, NREP Conference, the NRC and FEMA conducted a workshop with stakeholders. The workshop covered a broad range of EP topics. Unanswered stakeholder comments and questions were recorded by NRC staff, and the NRC and FEMA responded to those questions and comments in "Discussion of NREP 'Parking Lot' Items."

The NRC conducted a public meeting on August 31-September 1, 2005, to obtain input regarding EP requirements and guidance for commercial nuclear power plants. The first day of meetings involved a roundtable discussion of topics related to the review of EP regulations and guidance. During the second day, the NRC staff and stakeholders addressed the "Discussion of

NREP 'Parking Lot' Items" from the April 2005 NREP conference and other stakeholder comments and questions. The NRC requested comments in writing before the August 31-September 1, 2005, meeting and also received comments at the meeting. In addition to comments transcribed from the 2-day public meeting, the NRC accepted written comment submissions until October 31, 2005.

The NRC and FEMA responded to generic comments from the August 31-September 1, 2005, meeting and comments received thereafter in "Summary and Analysis of Comments (Received Between August 31 and October 31, 2005)." Site-specific comments from the public meeting were addressed in "Summary and Analysis of Site-Specific Comments (Received Between August 31 and October 31, 2005)."

The NRC also received comments on the review of the EP regulations and guidance for nuclear power plants at public meetings with stakeholders on May 19, 2006, and July 19, 2006. The May 19, 2006, meeting was transcribed. The NRC staff informed the meeting participants that their comments would be presented to the Commission in a September 2006 SECY paper. These comments were provided to the Commission in an attachment to SECY-06-0200 and, like the stakeholder comments from 2005, were used to inform the staff's recommendations to the Commission in SECY-06-0200.

The NRC received three comment letters that focused on the draft preliminary rule language posted for comment on <http://www.regulations.gov> on February 29, 2008. One comment letter was submitted by the Commonwealth of Pennsylvania, one was submitted by NEI, and one was submitted by the Union of Concerned Scientists on behalf of several NGOs. These comments were addressed as part of the development of the proposed rule.

The proposed rule was published on May 18, 2009, and the public comment period closed on October 19, 2009. The NRC received a total of 94 submittals and from these submittals, 687 individual comments were identified. Some of the comments and the NRC's

responses are discussed throughout this document. A detailed discussion of the public comments and the NRC's responses is contained in a separate document (see Section IX of this document). The NRC also received comments on issues that are outside the scope of this rule and on regulatory provisions that are not being revised in this rule. The NRC determined that these comments did not support changing the scope of the final rule.

C. Proposed Rule Specific Request for Comments

In the proposed rule, the NRC requested comments on whether the NRC should issue regulations requiring that licensees train responders on and implement the Incident Command System (ICS) to improve the interface with OROs during an event at a nuclear power plant. Homeland Security Presidential Directive 5 (HSPD-5) requires all Federal departments and agencies to adopt the National Incident Management System (NIMS) and use it in their individual incident management programs and activities, as well as in support of all emergency response actions taken to assist State, tribal, and local governments. Although NIMS represents a core set of doctrines, concepts, principles, terminology, and organizational processes that enables incident management, it also utilizes the ICS for command, operations, planning, logistics, and finance/administration functions to manage domestic incidents.

NIMS/ICS are also widely used by State, tribal, and local governments, including when these entities are engaged in emergency response activities with nuclear power reactor licensees. However, licensees are not currently required to adopt NIMS/ICS, so the potential exists for confusion or miscommunication between OROs who utilize NIMS/ICS as an incident management system and the associated power reactor licensees who do not use the same system. The NRC observed some of these coordination challenges during the nuclear power industry's voluntary three year EP hostile action drill program initiative, which was conducted in response to BL-05-02 and concluded in December 2009. Ideally, both OROs and licensees should use the same or a compatible incident management system to effectively communicate

with each other and improve their individual and joint response capabilities.

Nevertheless, the NRC recognizes that HSPD-5 does not require the private sector to adopt NIMS/ICS. The NRC also understands that requiring its nuclear power reactor licensees to implement NIMS/ICS would impose upon licensees a specific type of incident command structure stipulated by HSPD-5. Any future changes to HSPD-5 or NIMS/ICS could require corresponding rulemaking changes by the NRC. Moreover, if the NRC were to compel its nuclear power reactor licensees to use a specific incident management program, that program still could be different than incident management systems adopted by OROs that comply with laws promulgated by other governmental organizations. Thus, despite the NRC's efforts to promote consistency, these potentially conflicting regulatory authorities could prove to be incompatible during ICS activities at the reactor sites. For example, the incident commander during the onset of a hostile action incident at a nuclear facility will most likely be a local law enforcement officer, whose authority derives from the local or State jurisdiction and not from the NRC.

Section 50.47(b)(6) of the NRC's regulations states that "Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public." In this final rule, the NRC is amending Part 50, Appendix E, Section IV.A.7, to require licensees to include in their emergency plans the "[i]dentification of, and assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site." Together, these regulations require licensees to know which OROs would respond during an emergency and how to communicate with those OROs. A licensee's use of a command structure that is compatible with the applicable OROs' command structure (e.g., NIMS/ICS) would enhance communication and coordination between OROs and licensees and facilitate the licensee's compliance with the § 50.47(b)(6) standard and the requirements of Appendix E, Section IV.A.7. The NRC's regulations, as amended by

this final rule, contain adequate requirements to ensure that licensee compliance with these regulations would result in effective communication between OROs and licensees during emergencies. Therefore, the NRC is not requiring that NIMS/ICS become the sole means of incident command management for licensees.

Comments received by the NRC in response to other specific requests for comments in the proposed rule are addressed in Sections II and IV of this document.

IV. Section-by-Section Analysis

The Commission is amending portions of § 50.47, “Emergency plans,” § 50.54, “Conditions of licenses;” Part 50, Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities;” and § 52.79, “Contents of applications; technical information in final safety analysis report.”

1. Section 50.47 Emergency Plans

The NRC is amending § 50.47(b)(3) to remove the reference to the EOF as a “near-site” facility. The final rule provides criteria in Part 50, Appendix E, Section IV.E.8, regarding EOF distance from a nuclear power reactor site and for a performance based approach for EOFs, specifying that these facilities must meet certain functional requirements rather than requiring that they be located within a certain distance of the plant. The intent of this change is discussed in the section on changes to Appendix E, Section IV.E.8. (A discussion of this issue is also provided in Section II.B.3 of this document.)

The final rule amends § 50.47(b)(10) to require licensees to review and update their ETEs periodically. Changes to Appendix E to Part 50 provide the required frequency and details of the ETE updates and submissions to the NRC. **Although requirements for ETEs are found in both § 50.47(b) and in Appendix E to Part 50, the level of detail between them differs. Section 50.47(b) establishes the EP planning standards that licensees must**

meet, whereas Appendix E sets forth more detailed implementation requirements. (A discussion of this issue is also provided in Section II.B.4 of this document.)

This new requirement ensures that ETEs are reviewed periodically to determine whether population changes have caused significant changes in the ETE values. NRC review of ETE updates will ensure they are performed routinely, are consistent across the industry, and are technically sound. NRC guidance will provide more details of NRC expectations for development of an adequate ETE analysis, as well as provide NRC reviewers with guidance on the review of ETE updates. The NRC expects that the updated ETEs will be shared with OROs to be incorporated into offsite protective action strategies.

The NRC received several comments that suggested that the proposed rule language of § 50.47(b)(10) be revised to accommodate changes to ETE update criteria. Two commenters stated that the threshold for ETE updates should be based on a population sensitivity study that would assess the effect of a population change on the ETE. Two commenters argued that the ETE updates should be based on changes in population density rather than absolute population change. The NRC agrees that the ETE update criteria should be changed and should be based on the impact that a population change has on the ETE instead of a percent change in population. However, the details of the revised ETE update criteria should be included in Appendix E to Part 50 where more detailed implementation requirements are found. Two commenters argued that the proposed rule language should be revised to eliminate the requirement for submission of ETEs to the NRC for review and approval. The NRC believes that NRC review is necessary for consistent implementation, but the NRC will not approve the ETE updates. See the discussion under Appendix E to Part 50 in this section of the document for further information on this topic.

The NRC is amending § 50.47(d)(1) to remove the reference to the EOF as a “near-site” facility. The final rule provides criteria in Part 50, Appendix E, Section IV.E.8, regarding EOF

distance from a nuclear power reactor site and for a performance based approach for EOFs, specifying that these facilities will need to meet certain functional requirements rather than requiring that they be located within a certain distance of the plant. The intent of this change is discussed in the section on changes to Appendix E, Section IV.E.8. (A discussion of this issue is also provided in Section II.B.3 of this document.)

2. *Section 50.54 Conditions of Licenses*

The NRC is amending § 50.54(q) in its entirety. Section 50.54(q)(1) defines four terms whose meanings are limited to application within § 50.54(q) in the final rule.

Section 50.54(q)(1)(i) defines a “change” to the emergency plan as an action that results in modification or addition to, or removal from, the licensee's emergency plan. All such changes are subject to § 50.54(q) unless another regulatory change process is controlling. For example, a plant configuration change that removes a piece of equipment identified and relied upon in the emergency plan could also be subject to the requirements of § 50.59 and a technical specification change may also be involved.

In the proposed rule, § 50.54(q)(1)(i) defined what would have constituted a change to the emergency plan. The NRC received comments that asked the NRC to remove the phrase “resources, capabilities, and methods identified in the plan” from the final rule language for this definition. The NRC agrees with these comments and made this change to the final rule to place emphasis on the content of the emergency plan. Although resources, capabilities, and methods are identified in the emergency plan, not all of these will necessarily be under the control of the licensee. For example, the licensee's emergency plan may identify the plans and capabilities of OROs. A change to an ORO plan is not subject to the § 50.54(q) change process, but the modifications to the licensee's emergency plan to reflect that change are subject to the § 50.54(q) change process.

The § 50.54(q)(1)(ii) definition of “Emergency plan” in the final rule encompasses any

document that describes the programmatic methods that the licensee uses to maintain preparedness and to respond to emergencies, and to demonstrate compliance with the requirements of Appendix E, and for nuclear power reactors, the planning standards of § 50.47(b). In response to a stakeholder comment on § 50.54(q)(1)(ii) in the proposed rule, the NRC has revised this definition in the final rule by removing the proposed reference to “emergency planning functions,” and replacing it with “methods for maintaining emergency preparedness and responding to emergencies.” Sub-tier documents, such as emergency plan implementing procedures, are not ordinarily subject to the § 50.54(q) change process because these procedures generally only provide instructions in performing the programmatic methods identified and described in the emergency plan. However, if a license were to relocate a programmatic description to another document, that description will remain subject to the § 50.54(q) change process. For example, if a licensee were to relocate the details of its emergency classification scheme from the emergency plan to a wall chart posted in the control room, the wall chart would be subject to the § 50.54(q) change process. The definition also emphasizes, by incorporation, the role of the licensee’s original emergency plan approved by the NRC in minimizing the likelihood that a series of incremental changes, many of which may not have been reviewed by the NRC, over time will constitute a reduction in effectiveness of the NRC approved emergency plan.

Section 50.54(q)(1)(iii) in the final rule defines the term “emergency planning function” in terms of a capability or resource necessary to prepare for and respond to a radiological emergency. During the development of the EP Cornerstone of the ROP, a group of EP subject matter experts, including NRC staff and nuclear power industry stakeholders, with input from the public, developed a series of planning standard functions that are used in determining the significance of inspection findings. These planning standard functions are paraphrases of the broadly-worded § 50.47(b) planning standards and the corresponding requirements in

Appendix E to Part 50 in terms of the significant functions that need to be accomplished, or the capabilities that need to be in place, to maintain the effectiveness of a licensee's emergency plan and emergency response capability. Within the EP Cornerstone, the significance of inspection findings depends on whether the planning standards can be accomplished (i.e., loss of planning standard function) or can be accomplished only in a degraded manner (i.e., degraded planning standard function). The characterization of a reduction in effectiveness in the final rule capitalizes on this earlier effort in that any degradation or loss of a planning standard function is deemed to constitute a reduction in effectiveness. The NRC is using the phrase "emergency planning function" in lieu of "planning standard function" as used in the ROP to allow the definition to be applicable to licensed facilities that are subject to Appendix E, but are not subject to the planning standards of § 50.47(b). The emergency planning functions have been established in RG 1.219 along with examples of typical emergency plan changes that are expected to constitute a reduction in effectiveness and examples of changes that are not.

The emergency planning functions do not replace or supplement the regulations upon which they were based and as such, compliance with these functions is not required. They are only used to differentiate between changes that the licensee is allowed to make without prior NRC approval and those that require prior NRC approval. The NRC did not establish these emergency planning functions in regulations because the underlying regulations already exist, and the expression of the emergency planning functions differs between nuclear power reactors, non-power reactors, and fuel facilities licensed under Part 50 or Part 52. RG 1.219 discusses these emergency planning functions for nuclear power reactor licensees.

In response to the definition of "emergency planning function" in proposed § 50.54(q)(1)(iii), the NRC received a stakeholder comment that suggested that the planning standards of § 50.47(b) should be used for determining reductions in effectiveness, in lieu of the

proposed emergency planning functions, since compliance is based on meeting planning standards. The NRC disagrees with this comment. The § 50.54(q) change process establishes a two factor test to establish whether the licensee has the authority to make a change without prior NRC approval. First, the plan as modified must continue to comply with the requirements of Appendix E, and for power reactors, the planning standards of § 50.47(b). Second, the licensee must establish that the change does not reduce the effectiveness of the emergency plan. These are two different prerequisites. Compliance with the requirements of Appendix E, and for power reactors, the planning standards of § 50.47(b), satisfies the first factor, but it doesn't necessarily meet the second factor.

Under § 50.47(a)(1)(i), an operating license will be issued only if the NRC finds that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. During the licensing process, the licensee or the NRC may have identified planning constraints and vulnerabilities that required the licensee to commit to site-specific capabilities and resources beyond those identified in generic regulatory guidance as meeting the requirements of Appendix E, and for nuclear power reactor licensees, the planning standards of § 50.47(b). After receiving its license, a licensee may have identified newly developed planning or response constraints, or self-identified weaknesses in its emergency plan, and implemented corrective actions beyond that identified in its emergency plan. For example, an applicant having a site with complex meteorological regimes or complex topography may have been required to establish a more advanced emergency dose assessment capability. Because these extensions to generic guidance were found to be necessary to meet the broadly worded requirements in Appendix E, and for nuclear power reactor licensees, the planning standards of § 50.47(b), a licensee seeking to relax these requirements needs to determine that the emergency plan can continue to be effective, as modified. This will generally require that the licensee establish that the considerations that

made the site-specific requirements necessary are no longer applicable to that site, or require an alternative approach that maintains the effectiveness. Thus, simply meeting the requirements of Appendix E, and for power reactors, the planning standards of § 50.47(b), is not necessarily sufficient to prevent a reduction in the plan's effectiveness. For these reasons, the requirements of Appendix E, and for power reactors, the planning standards of § 50.47(b) alone cannot be used for determining reductions in effectiveness.

Section 50.54(q)(1)(iv) in the final rule defines the term "reduction in effectiveness" as a change to the emergency plan that results in a reduction of the licensee's capability to perform an emergency planning function in the event of a radiological emergency. The phrase "reduction in effectiveness" is an evaluation concept that is used in § 50.54(q) to differentiate between changes that the licensee is allowed to make without prior NRC approval and those that require prior NRC approval. A determination that a change may result in a reduction in effectiveness does not imply that the licensee could no longer implement its plan and provide adequate measures for the protection of the public. The NRC may approve a proposed emergency plan change that the licensee determined to be a reduction in effectiveness, if the NRC can find that the emergency plan, as modified, continues to meet the requirements of Appendix E, and for nuclear power reactor licensees, the planning standards of § 50.47(b), and continues to provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. "Radiological emergency" as used in § 50.54(q)(1)(iv) in the final rule means any condition that results in the declaration of any ECL and the implementation of the licensee's emergency plan. A nuclear power reactor licensee evaluating whether a particular emergency plan change constitutes a reduction in effectiveness is expected to consider the spectrum of accidents addressed in the planning basis described in NUREG-0654. In making this determination, licensees of non-power reactors and fuel facilities licensed under Part 50 must base their evaluations on the planning bases for their respective

facilities.

In the proposed rule, § 50.54(q)(1)(iv) defined the term “reduction in effectiveness.” The NRC received a stakeholder comment that suggested that the definition of “reduction in effectiveness” should establish a threshold based on a “significant reduction” rather than a reduction. The comment cited, as an example, the use of “more than a minimal increase” in the § 50.59 change process. The NRC agrees that the § 50.59 change process does incorporate the phrase “more than a minimal amount.” However, this phrase is always used in conjunction with a numerical criterion (e.g., § 50.59(c)(2)(i) through (iv)). With few exceptions, the planning standards of § 50.47(b) and the requirements of Appendix E do not establish numerical requirements. Other criteria in § 50.59 are related to any change (e.g., § 50.59(c)(2)(v) through (vi) and (viii)). The NRC has determined that any change that reduces the effectiveness of the licensee’s capability warrants prior NRC review; therefore, the NRC disagrees with the comment. The licensee is authorized to make changes without prior approval up to the point at which effectiveness is reduced. This standard is reflected in the final rule language.

Regulations in Parts 50 and 52 require applicants for licenses to develop emergency plans that meet the requirements of Appendix E, and for nuclear power reactors, § 50.47(b), as applicable, during facility licensing. A holder of a license under Part 50 or a combined license under Part 52 after the Commission makes the finding under § 52.103(g) is required by § 50.54(q)(2) in the final rule to follow and maintain the effectiveness of its emergency plan. The § 50.54(q)(2) references to Appendix E and § 50.47(b), as applicable, extend the applicability of these requirements as a condition of the facility license. The NRC expects licensees to identify conditions and situations that could reduce the effectiveness of its emergency plan, and to take corrective and/or compensatory actions to restore and maintain the requisite effectiveness.

In the proposed rule, § 50.54(q)(2) would have required licensees to follow and maintain the effectiveness of the emergency plan. The NRC received a stakeholder comment that stated that requiring a licensee to maintain an emergency plan effective under § 50.54(q)(2) is inconsistent with the NRC approving a change that reduces the effectiveness of the emergency plan as required by § 50.54(q)(4). Paragraphs (3) and (4) of § 50.54(q) address emergency plan changes that are intentional on the part of the licensee, whereas a non-compliance with § 50.54(q)(2) is generally the result of a licensee failure to follow the requirements of its emergency plan (e.g., failure to notify OROs during an actual event) or failure to take action to address conditions, from whatever cause, that reduce the effectiveness of the emergency plan (e.g., an offsite fire department identified and relied upon in the emergency plan is no longer available to come to the site, and the licensee hasn't taken timely corrective actions to restore the capability). The licensee's determination of a reduction in effectiveness is used only to determine whether the licensee has the authority to implement the change without prior NRC approval under § 50.54(q)(3) or must submit for prior NRC approval under § 50.54(q)(4). The NRC's approval of the proposed change establishes a new standard of effectiveness for the licensee's emergency plan. Accordingly, the NRC does not believe the final rule to be internally inconsistent.

Section 50.54(q)(3) in the final rule grants authority to the holder of a license to make changes to its emergency plan without prior NRC approval only if an analysis demonstrates that the changes do not reduce the effectiveness of the plan and the plan, as changed, continues to meet the requirements in Appendix E, and for nuclear power reactor licensees, § 50.47(b). As such, § 50.54(q)(3) provides for a two factor test to establish whether the licensee has the authority to make a change without prior NRC approval. First, the plan as modified must continue to comply with the requirements of Appendix E, and for power reactors, the planning standards of § 50.47(b). Second, the licensee must establish that the change does not reduce

the effectiveness of the emergency plan. These are two different and independent prerequisites. Compliance with the requirements of Appendix E, and for power reactors, the planning standards of § 50.47(b), addresses the first factor. The second factor addresses whether or not the change reduces the effectiveness of the emergency plan. A change that satisfies the first factor may not satisfy the second factor and vice versa. Changes that do not satisfy the first factor would require the licensee to request an exemption from the affected requirements under § 50.12. Changes that do not satisfy the second factor would require the licensee to request prior approval under § 50.54(q)(4).

The NRC expects a licensee considering a change under this section to perform an evaluation of the change to a level of rigor and thoroughness consistent with the scope of the proposed change. A licensee's analysis of the impact of a change on the effectiveness of the plan needs to consider the accidents included in the emergency planning basis, the licensing basis of the particular emergency plan, and any emergency plan elements implemented to address site-specific emergency response constraints (e.g., delay in staff augmentation associated with a remote site, commitments to State or local governments, existence of significant external hazards, etc.).

Section 50.54(q)(4) in the final rule defines the process by which a licensee requests prior approval of a change to the emergency plan that the licensee has determined constitutes a reduction in effectiveness of the plan. The final rule retains the proposed requirement that a licensee pursuing these changes must apply for an amendment to its license as provided in § 50.90. A proposed emergency plan change that would reduce the effectiveness of the plan would expand the licensee's operating authority, and courts have found that Commission actions that expand licensees' authority under their licenses without formally amending the licenses constitute license amendments and should be processed through the Commission's license amendment procedures. (*See Citizens Awareness Network, Inc. v. NRC*, 59 F.3d 284

(1st Cir. 1995); *Sholly v. NRC*, 651 F.2d 780 (D.C. Cir. 1980) (*per curiam*), *vacated on other grounds*, 459 U.S. 1194 (1983); and *in re Three Mile Island Alert*, 771 F.2d 720, 729 (3rd Cir. 1985), *cert. denied*, 475 U.S. 1082 (1986). See also *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-96-13, 44 NRC 315 (1996)). Therefore, a change to a licensee's emergency plan that would expand the licensee's operating authority should also be processed through the Commission's license amendment procedures.

In response to § 50.54(q)(4) in the proposed rule, the NRC received several comments questioning the NRC's conclusion that proposed changes that would reduce the effectiveness of the licensee's emergency plan would expand the licensee's operating authority. The NRC maintains that a reduction in the effectiveness of a licensee's emergency plan constitutes an expansion of the licensee's operating authority. A licensee's emergency plan is part of the licensing basis for its nuclear power plant. The plan describes how the licensee will comply with the NRC's requirements governing EP and emergency response. The NRC's regulations require that the licensee have and implement an approved emergency plan as a condition of its operating license. A change to the emergency plan constituting a reduction in effectiveness of that plan allows the licensee to disclaim responsibility for performing activities and actions (or specific portions thereof) formerly required (or prohibited) under the superseded provisions of the licensee's approved emergency plan. It allows the licensee to perform, without fear of NRC regulatory response (e.g., an order, including an enforcement action), activities and actions formerly precluded. In this situation, the licensee would have the capability to operate its facility in a manner that was not previously authorized by the NRC. In other words, the licensee would have operating authority beyond what it originally had, as reflected in the approved emergency plan without the proposed change.

The NRC notes that it is not simply that the emergency plan has "changed" that leads to the conclusion that there is an expansion of operating authority. Otherwise, any change to the

emergency plan, regardless of the effect on licensee authority to operate, would be deemed an expansion of operating authority for which NRC approval via a license amendment is required. Rather, the effect of the plan change (i.e., allowing the licensee to operate in a manner with respect to radiological health and safety that it was not allowed to do under the superseded provision of the emergency plan) forms the essence of the test of “expanded” operating authority.² Thus, an emergency plan change that would reduce the effectiveness of the plan would expand the licensee’s operating authority under its license.

Moreover, the Commission has determined that the NRC must approve reductions in effectiveness to ensure compliance with the requirements of Appendix E, and for nuclear power reactors, the planning standards of § 50.47(b) so that the proposed changes provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. This approval is more than a ministerial, non-discretionary act. The determination of the acceptability of the proposed reduction in effectiveness necessitates consideration and resolution of technical and regulatory issues. In some instances, the evaluation of the plan change may involve the balancing of competing regulatory objectives and policies. Thus, NRC approval of a reduction in effectiveness constitutes an exercise of agency discretion. For these reasons, under the NRC’s legal precedents, NRC approval of an emergency plan change that would reduce the effectiveness of the plan would grant the licensee greater operating authority and would require a license amendment request.

Under § 50.54(q)(4), in addition to satisfying the filing requirements for a license amendment request in §§ 50.90 and 50.91, the license amendment request must include all emergency plan pages affected by the change, a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee’s emergency plan, as

² Consistent with the former § 50.54(q), § 50.54(q) in the final rule requires that only those emergency plan changes that reduce the effectiveness of the plan need prior NRC approval. Those plan changes that increase the effectiveness of the plan may expand the licensee’s operating authority but would not require prior NRC approval.

revised, will continue to meet the requirements of Appendix E, and for nuclear power reactor licensees, the planning standards of § 50.47(b). The NRC will review the amendment application to make its no significant hazards consideration determination and to determine if the proposed change to the emergency plan is a reduction in effectiveness under § 50.54(q). If the proposed change does constitute a reduction in effectiveness, the NRC may issue the amendment only if it determines that the emergency plan, as modified, continues to meet the requirements in Appendix E, and for nuclear power reactors, the planning standards of § 50.47(b), and that there continues to be reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

Section 50.54(q)(5) in the final rule applies to all licensees subject to § 50.54(q) and requires that licensees retain a record of all changes to the emergency plan made without prior NRC approval for a period of three years from the date of change. This section also requires the licensee to submit, as specified under § 50.4, a report of each such change, including a summary description of its evaluation, within 30 days of the change being put into effect. The NRC expects that the record of changes will fully describe each change made and will include documentation of the evaluation that determined the change was not a reduction in effectiveness. The NRC will use this record of changes during inspection oversight of the licensee's implementation of § 50.54(q)(2).

In the proposed rule, § 50.54(q)(5) would have required licensees to submit a report of a change to the emergency plan made without NRC approval, 30 days after the change was made. One commenter requested that the 30-day period start when the "change is implemented" rather than starting when the "change is made." The NRC agrees that clarification is necessary, but has decided to use the phrase "change is put into effect," because it provides a more specific point in time. The change is put into effect when the modified emergency plan is available for use in the emergency response facilities. At that point, the

change can affect the licensee's response to an emergency condition, whether or not all typical implementation activities, such as distribution of the updated emergency plan and ERO training, have been completed.

Section 50.54(q)(6) in the final rule requires a licensee of a nuclear power reactor to retain the emergency plan and each change for which prior NRC approval was obtained under § 50.54(q)(4) as a record until the Commission terminates the license.

The NRC is removing paragraph (r) of § 50.54. Section 50.54(r) was published as a final rule on August 19, 1980 (45 FR 55402), to require then-existing licensees authorized to possess and/or operate a research or test reactor facility to submit emergency plans complying with Appendix E to Part 50 to the NRC for approval within one year or two years, as applicable, from the effective date of the rule (November 3, 1980). (A discussion of this issue is also provided in Section II.B.6 of this document.)

The NRC is removing paragraph (s)(1) of § 50.54 to remove language addressing a one-time requirement that has now been completed. Section 50.54(s)(1) was published as a final rule on August 19, 1980 (45 FR 55402). This provision required existing nuclear power reactor licensees to submit to the NRC within 60 days after the effective date of the rule (November 3, 1980), the radiological response plans of State and local governmental entities in the United States that are wholly or partially within a plume exposure pathway EPZ, as well as the plans of State governments wholly or partially within an ingestion pathway EPZ. (A discussion of this issue is also provided in Section II.B.6 of this document.)

The NRC is removing paragraph (s)(2)(i) from § 50.54. Section 50.54(s)(2) was initially published as a final rule on August 19, 1980 (45 FR 55402) as a single paragraph. The rule was amended on May 29, 1981 (46 FR 28838), resulting in § 50.54(s)(2) being split into two paragraphs, §§ 50.54(s)(2)(i) and 50.54(s)(2)(ii). The rule language in § 50.54(s)(2)(i) required that the licensee, State, and local emergency plans for all operating power reactors be

implemented by April 1, 1981, except as provided in Section IV.D.3. of Appendix E to Part 50. (A discussion of this issue is also provided in Section II.B.6 of this document.)

The NRC is removing paragraph (u) from § 50.54. Section 50.54(u) was published as a final rule on August 19, 1980 (45 FR 55402), to require then existing nuclear power reactor licensees to submit to the NRC plans for coping with emergencies that meet the standards in § 50.47(b) and the requirements of Appendix E to Part 50 within 60 days after the effective date of the rule (November 3, 1980). (A discussion of this issue is also provided in Section II.B.6 of this document.)

The NRC is revising paragraphs (gg)(1) and (gg)(2) of § 50.54 to replace “DHS” with “FEMA.” Although FEMA remains within DHS, the responsibility for offsite EP for nuclear power plants is with FEMA. FEMA requested that “FEMA” be used rather than “DHS” for clarity of communication with stakeholders.

The NRC is amending § 50.54(gg)(1)(i) to remove the reference to the EOF as a “near-site” facility. The final rule provides criteria in Part 50, Appendix E, Section IV.E.8, regarding EOF distance from a nuclear power reactor site and for a performance based approach for EOFs, specifying that these facilities must meet certain functional requirements rather than requiring that they be located within a certain distance of the plant. The intent of this change is discussed in the section on changes to Appendix E, Section IV.E.8. (A discussion of this issue is also provided in Section II.B.3 of this document.)

3. Appendix E to Part 50, Emergency Planning and Preparedness for Production and Utilization Facilities

The NRC is amending Part 50, Appendix E, Section I, “Introduction,” to include a provision allowing an applicant for an early site permit under Part 52 that chooses to propose either major features of an, or a complete and integrated, emergency plan (§ 52.17(b)(2)), or a combined license under Part 52 (§ 52.79(a)(21)) whose application is docketed before **[INSERT**

THE EFFECTIVE DATE OF THE FINAL RULE] to choose to defer compliance with this rule.

If the applicant chooses to defer compliance with this rule, and its early site permit or combined license is subsequently issued, then the permit holder or licensee shall request to amend its early site permit or combined license to demonstrate compliance with this rule no later than December 31, 2013. Furthermore, an applicant that defers compliance with this rule is expected to implement this rule under the same schedule as it would implement EP requirements in the absence of this rule. This means that this rule does not require any immediate implementation actions on the part of any applicant, but rather shall be implemented after receipt of a combined license, and under the licensee's schedule for completing EP-related requirements (e.g., through completion of EP-related Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)).

The NRC intends, by allowing an applicant to defer compliance with this rule, to avoid unnecessary delays in making a licensing decision on an early site permit or a combined license already under consideration by the NRC, provided:

1) The application complies with all applicable, current (prior to this rulemaking) EP regulations;

2) The applicant, if it becomes an early site permit holder or a combined licensee, request to amend its early site permit or combined license before December 31, 2013, to comply with the amended EP regulations in this rule; and

3) The applicant, if it becomes an early site permit holder or a combined licensee, may not operate the facility until the NRC has approved the license amendment demonstrating compliance with this rule.

In response to a request in the proposed rule for comments on the potential impacts of a final rule on combined license and early site permit application processes and schedules, the NRC received comments that the NRC should not require pending combined license and early

site permit applicants to implement the final rule changes until after the NRC issues the license or permit. In this final rule, the NRC is offering applicants the option to defer compliance with the final rule. That period of compliance deferral, between **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]** and December 31, 2013, was selected specifically to apply only to those applications that have already been docketed and are nearing completion of the safety review and subsequent hearings (as applicable) prior to a licensing decision being made on the application. The NRC decided to limit the duration of that deferral as stated because future applicants and currently docketed applicants not nearing a licensing decision would have ample time to bring their applications into compliance with this final rule without the need to defer compliance. So that all combined license and early site permit applicants ultimately comply with the same regulations, an applicant whose application is docketed before **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]** that does not receive a combined license or early site permit before December 31, 2013, shall revise its combined license or early site permit application to comply with the changes in this final rule no later than December 31, 2013.

The NRC has added a new requirement in Part 50, Appendix E, Section I, to address the Tennessee Valley Authority (TVA) facility at Watts Bar. TVA is in possession of a current construction permit for Watts Bar Nuclear Plant, Unit 2, and is treated as a current licensee for purposes of satisfying the requirements of this rule. These requirements reflect NRC support of a licensing review approach for Watts Bar Nuclear Plant, Unit 2, that employs the current licensing basis for Unit 1 as the reference basis for review and licensing of Unit 2, as stated in the SRM to SECY-07-0009, "Possible Reactivation of Construction and Licensing Activities for the Watts Bar Nuclear Plant Unit 2," dated July 25, 2007.

To improve clarity in the organization of the regulations, the final rule numbers the paragraphs of Section I.

The NRC is amending paragraph H in Section II of Appendix E to remove a reference to the EOF as a “near-site” facility. Criteria are provided in Section IV.E.8, of Appendix E, regarding EOF distance from a nuclear power reactor site and for a performance based approach for EOFs. The criteria specify that these facilities need to meet certain functional requirements rather than requiring that they be located within a certain distance of the plant. The intent of this change is discussed in the changes to Section IV.E.8, of Appendix E. (A discussion of this issue is also provided in Section II.B.3 of this document.)

The NRC is amending several paragraphs within Section IV of Appendix E to Part 50 that apply to licensees and applicants for licenses under Part 50 or Part 52 of this chapter, as applicable. All provisions of Section IV of Appendix E to Part 50 apply to applicants for, and holders of, nuclear power reactor operating licenses under Part 50, combined licenses under Part 52, and certain early site permits under Part 52. Many of the provisions in Section IV also apply to Part 50 non-power reactor licensees. Therefore, for purposes of brevity, the initial reference to a “licensee” in each of the remaining paragraphs in this section indicates that that particular rule change applies to applicants for, and holders of, operating licenses under Part 50 for nuclear power reactors and non-power reactors, combined licenses under Part 52, and certain early site permits under Part 52, unless specifically stated otherwise. The initial reference to “nuclear power reactor licensee” in each of the remaining paragraphs in this section means applicants for, and holders of, operating licenses for nuclear power reactors under Part 50, combined licenses under Part 52, and certain early site permits under Part 52, unless specifically stated otherwise.

The NRC is amending the former first paragraph of Section IV by adding language to require nuclear power reactor licensees, but not applicants, to revise their ETEs when the U.S. Census Bureau decennial census data is available. The final rule requires that within 365 days of the later of the date of the availability of the most recent decennial census data or the

effective date of this final rule, and within 365 days of the availability of subsequent decennial census data, these licensees must revise their ETE analyses using the decennial census data, and submit the analyses to the NRC under § 50.4.

The NRC will review the ETE analyses for completeness using NUREG/CR-7002, “Criteria for Development of Evacuation Time Estimate Studies,” the NRC guidance on ETE development issued with the final rule. The NRC received comments regarding the timeliness of submitting ETE updates for NRC review and extended the time period for ETE update submission from 180 to 365 days after a population change triggering the update or the release of census data. The NRC will not approve ETE updates but will review them for completeness. For this reason the NRC is requiring licensees to submit their ETE updates at least 180 days before they use them to form protective action recommendations and provide them to offsite authorities for use in developing offsite protective action strategies. This will allow time for NRC review after which licensees may assume that the updates are adequate and available for use.

The NUREG/CR-7002 guidance is an acceptable template to meet the requirements for ETE analysis development and nuclear power reactor licensees should use this guidance, or an appropriate alternative, when developing an ETE analysis or analysis update. The first set of 2010 census data is expected to be available in 2011. The NRC will establish a schedule for review of the updated ETEs. After the licensee submits the ETE analysis for NRC review, these ETEs will be known as the licensee’s “updated” ETEs, as opposed to the “approved” ETEs, which are the ETEs approved by the NRC when it issues a license.

Thereafter, these licensees are required to annually review changes in the population of their EPZs. To complete these reviews, licensees will use data from the U.S. Census Bureau, which annually produces resident population estimates and State/local government population data, if available. These reviews must be conducted no more than 365 days apart. The licensee is required to update the ETE analysis to reflect the impact of a population change that

causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas (ERPAs), or for the entire 10-mile EPZ to change by 25 percent or 30 minutes, whichever is less from the licensee's currently NRC-approved or updated ETE. An ERPA is defined as a local area within the EPZ for which emergency response information is provided; the EPZ is typically divided into ERPAs along geographic or political boundaries. The licensee is required to submit the updated ETE analysis to the NRC under the procedures of § 50.4 within 365 days of the availability of the population data used in the update and at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.

In the proposed rule, the NRC would have required an ETE analysis update when the population in the EPZ or most populous ERPA increased or decreased by more than 10 percent from the population that formed the basis for the licensee's currently approved ETE. Several commenters disagreed with the 10 percent population change criterion being the triggering event that would require licensees to update their ETEs. Suggested alternative thresholds included various population sensitivity studies that would assess the effects of population changes on ETE values; a 25 percent change in the ETE baseline rather than a 10 percent change in the EPZ population; and population changes resulting in a change to ETE values of 25 percent or 30 minutes, whichever is less.

The final rule adopts the approach of a 25 percent or 30 minute increase in ETE values to determine when an ETE analysis update is warranted. The NRC determined that basing ETE analysis updates on a population change alone without consideration of its impact on the ETE values may not have resulted in useful ETE updates. This is because a large population change in an area where there is an established infrastructure may have no impact on ETE values, whereas a small population change in an area with limited infrastructure may impact the

ETE values. The proposed requirement to update an ETE analysis based on a standard value of a 10 percent population change would have required licensees to submit updated ETEs that may have had the same time estimates as the original document and therefore, would provide no useful updated ETE information to response agencies. An approach that considers both population change and its impact on the ETE numerical values provides assurance that updated ETE analyses are submitted only when the ETE values are impacted. This links the update to a population change that has an impact on the ETE values on a site-specific basis rather than a generic 10 percent population change that may or may not impact these values.

Therefore, nuclear power reactor licensees (but not applicants) will be required to provide an updated ETE analysis to the NRC within 365 days of 1) the later of the date of the availability of the most recent decennial census data or the effective date of this final rule, 2) the availability of subsequent decennial census data, and 3) the availability of the population data used in the update, during the years between decennial censuses, when a population increase within the EPZ causes certain ETE values to increase by 25 percent or 30 minutes, whichever is less from the licensee's currently NRC-approved or updated ETE. Licensees should perform a population sensitivity study for various population increases (i.e., 10 percent, 20 percent, and 30 percent increases) to determine the population value that will cause ETE values to increase by 25 percent or 30 minutes, whichever is less. If during the decennial period between censuses this threshold is reached, the licensee must update the ETE analysis to reflect the impact of the population increase. To establish the basis for these update criteria, the NRC considered the input of ETE subject matter experts who considered the sensitivity of ETE analysis tools, uncertainty of the data used in the development of ETEs, and discussions with OROs regarding the time necessary to mobilize resources to support an evacuation. The NRC determined that an ETE increase of 30 minutes is the smallest time value that OROs would consider to potentially impact a protective action decision from shelter-in-place to evacuate or

vice versa. A review of more than 20 current ETEs and NUREG/CR-1856, “An Analysis of Evacuation Time Estimates Around 52 Nuclear Power Plant Sites, Vol. 1 & 2,” dated May 1981, shows that most ETEs are longer than 4 hours. Therefore, the 30-minute increase would likely be the overriding criterion, although the 25-percent increase would be expected to apply primarily to sites with shorter ETEs. Either of these criteria would constitute a material change in ETE times and would provide an appropriate assessment of the effect of population change on the ETE on a site-specific basis.

In the proposed rule, the NRC would have required the licensee to submit an ETE update within 180 days of a population change triggering the update or the release of census data. The NRC received several stakeholder comments in opposition to the proposed 180-day requirement, some stating that the 180-day timeframe may be unrealistic. The NRC agrees that 180 days to complete ETE updates could be challenging based on the number of licensees and the limited number of commercial contractors available to complete the updates. Therefore, the NRC is extending the amount of time to complete ETE analysis updates from 180 to 365 days.

One commenter pointed out that ETEs only analyze the time required to evacuate areas within the EPZ. The commenter requested that NRC clarify the sentence “time required...for taking other protective actions” because the only other protective action is to shelter in place and would not fall under the ETE. The NRC agrees with this comment and has removed the language “and for taking other protective actions” from the final rule language.

The requirement for nuclear power reactor licensees (but not applicants) to evaluate a population change impact on the ETE during the period between decennial censuses balances the burden on licensees by requiring an ETE analysis update only when a population change has a material impact on the individual ETE values. The U.S. Census Bureau currently projects population growth at approximately one percent per year in the United States. However, certain areas experience much greater growth. The population of Maricopa County, Arizona, for

example, experienced approximately 6.4 percent growth in the two year period from 2005 to 2007. The Palo Verde Nuclear Generating Station is located in Maricopa County. St. Lucie County in Florida, where the St. Lucie Nuclear Plant is located, experienced approximately 9.7 percent population growth in the same period. A nuclear plant's EPZ population may not grow at the same rate as the corresponding county(ies) population, but a review of population growth would be appropriate, as discussed in Section II.B.4 of this document.

The updated ETEs will allow for more effective development of public protective action strategies and review of evacuation planning. Sites with little population change will be minimally impacted by the requirement, while those sites with a greater rate of population change that materially impacts ETE values will be required to perform more frequent updates. Licensees should also identify potential enhancements to improve evacuation times and discuss them with OROs. (A discussion of this issue is also provided in Section II.B.4 of this document.)

The final rule also explains that a nuclear power reactor license applicant must use the most recent U.S. Census Bureau data, as of the date the applicant submits its application to the NRC, to conduct the ETE analysis for its application. Once an applicant obtains a combined license, it will need to conduct one review of any changes in the population of its EPZ at least 365 days before the licensee's scheduled fuel load. The licensee must use updated decennial census data if more recent decennial census data than that used in the licensee's application is available. If more recent decennial census data is not available, then the licensee must use annual resident population estimates from the U.S. Census Bureau and State and local government population data, if available. The licensee must update its ETE analysis if a population increase within the EPZ causes certain ETE values to increase by 25 percent or 30 minutes, whichever is less from the licensee's currently NRC-approved or updated ETE. If the 25-percent or 30-minute threshold is reached, the licensee must update the ETE analysis to reflect the impact of the population increase. The licensee must perform this review and submit

the ETE update, to the extent necessary, no later than 365 days before the scheduled fuel load. After beginning operations, the licensee will need to comply with the final rule requirements, including the frequency of ETE reviews and updates, like any other operating licensee.

The NRC is revising the former first paragraph of Section IV to change the term “radiation” to “radiological,” to provide consistent use of the phrase “radiological emergency.” It is also clarifying that the requirements for the submittal of emergency response plans apply to not only applicants for nuclear power reactor operating licenses under Part 50, but also to applicants for early site permits (as applicable) and combined licenses under Part 52. This clarification was intended for but inadvertently omitted from a rulemaking to update Part 52 (72 FR 49517; August 28, 2007). To improve clarity in the organization of the rule, the final rule separates Section IV, as amended by the final rule, into seven paragraphs and numbers each of the paragraphs.

The final rule makes two editorial revisions to Appendix E to Part 50, Section IV.A.2. One change includes the abbreviation of emergency response organization, “ERO,” in paragraph 2 of Section IV.A. The second revision clarifies that paragraph 2.c. should read as follows: “Authorities, responsibilities, and duties of an onsite emergency coordinator....”

The NRC is amending Part 50, Appendix E, Section IV.A.7, to include hostile action at the site as one of the types of emergencies that define the State, local, and Federal agencies that nuclear power reactor licensees must identify in their emergency plan along with the assistance licensees expect from these agencies. The former regulations did not explicitly require the licensee to identify ORO resources for responding to the site during hostile action. Part 50, Appendix E, Section IV.A.7, in the final rule adds this requirement to ensure that the State, local, and Federal agencies needed during hostile action at the site are identified in the licensee’s emergency plan. This requirement will be enforced through routine inspection and observation of emergency exercises. (A discussion of this issue is also provided in

Section II.A.4 of this document.)

In the proposed rule, Part 50, Appendix E, Section IV.A.7, would have been modified to add the following: “Nuclear power plant licensees shall ensure that offsite response organization resources (e.g., local law enforcement, firefighting, medical assistance) are available to respond to an emergency including hostile action at the nuclear power plant site.” The NRC received several comments asserting that the proposed rule language would give authority to the licensee over the OROs in order to “ensure” that resources would be available to respond to hostile action. The NRC agrees with the comments that determining the adequacy of ORO emergency plans is under the jurisdiction of FEMA and other State and local organizations, and the NRC did not intend to give licensees authority over OROs via this rulemaking. The NRC is revising the final rule by deleting the second sentence of Section IV.A.7, in the proposed rule, thereby clarifying the intent of the final rule.

The NRC is revising Section IV.A.7 by inserting the words “a description of the” immediately before “assistance expected from, appropriate State, local, and Federal agencies” to make this provision read consistently with the other paragraphs in Section IV.A.

Part 50, Appendix E, Section IV.A.7, also adds the definition of “hostile action” as an act directed 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. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. This definition is based on the definition of “hostile action” in BL-05-02. The NRC is excluding non-power reactors from the definition of “hostile action” at this time because a regulatory basis has not been developed to support the inclusion of non-power reactors in that definition. Further analysis and stakeholder interactions would be needed prior to including non-power reactors in the definition of “hostile action.”

The NRC received a stakeholder comment via FEMA stating that a “hostile action,” as

defined by the NRC, does not mention cyber attacks, which should be considered as a form of hostile action. Cyber attacks are addressed in licensees' cyber security plans consistent with § 73.54, "Protection of digital computer and communication systems and networks," and associated guidance documents. The current cyber security program associates cyber attacks with "digital computer and communication systems and networks," whereas the definition of hostile action is an act by individuals using physical violence that can potentially achieve an end to harm public health and safety. Even though cyber attacks can be malevolent actions against NRC licensees, its definition maintains an association with digital or analog computer and communications systems, whereas hostile actions imply physical attacks by individuals. Therefore, the definition of "hostile action" in Section IV.A.7 was not changed as a result of this comment.

The former Section IV.A.7 applied to non-power reactor licensees, and the NRC does not intend to change that requirement in this final rule. Non-power reactor licensees are still required to identify ORO resources that would respond to an emergency and the assistance licensees expect from these resources. However, because "hostile action" is defined as "an act directed toward a nuclear power plant or its personnel," non-power reactor licensees are not required to identify the State, local, and Federal agencies needed during hostile action at the non-power reactor site.

The NRC is adding a new paragraph A.9 in Section IV, of Appendix E to Part 50. This new paragraph will require nuclear power reactor licensees to perform a detailed analysis to show that on-shift personnel assigned emergency plan implementation functions are not assigned any responsibilities that would prevent them from performing their assigned emergency plan functions when needed. In the proposed rule, the NRC would have required licensees to "provide" a detailed analysis. However, the NRC did not intend for licensees to submit the detailed analysis for review or approval. Therefore, the wording in the final rule was

changed to require licensees to have a detailed analysis in their emergency plans without providing it to the NRC.

The final rule does not specify, by position or function, which responsibilities must be assigned, but allows nuclear power reactor licensees the flexibility to determine the limit of assigned responsibilities for effective emergency plan implementation on a site-specific basis. This allows licensees to take credit for new technologies that could potentially affect the number of on-shift staff that would be needed. However, licensees need to ensure that the duties assigned to on-shift staff are reasonable for one person to perform and are not so burdensome as to negatively impact emergency response. (A discussion of this issue is also provided in Section II.A.1 of this document.)

The final rule requires nuclear power reactor licensees to perform a detailed analysis, such as a job task analysis (JTA) or a time motion analysis, to demonstrate that on-shift personnel could implement the plan effectively without having competing responsibilities that could prevent them from performing their primary emergency plan tasks. The NRC expects the analysis to identify all the tasks that must be performed by available staff during an evolution such as response to an emergency. These licensees need to define the events that will be used in the detailed staffing analysis, such as postulated design basis accidents and the DBT, for which there must be emergency planning. The analysis must identify all tasks that must be completed for each analyzed event, and the responders responsible for the performance of those tasks. Licensees must then ensure that there is sufficient on-shift staff to perform all necessary tasks until augmentation staff arrives to provide assistance. Enhancing the regulations to require licensees to ensure that multiple responsibilities assigned to on-shift staff will not detract from adequate emergency plan implementation, will establish a regulatory framework that more clearly codifies the NRC's shift staffing expectations for effective emergency response.

The NRC is amending Section IV.B of Appendix E to Part 50 to add a requirement that nuclear power reactor licensees must consider hostile action, which may adversely affect the plant (e.g., cause personnel harm and/or equipment damage), in their EAL schemes. It will also serve to establish consistent EALs for hostile action among existing and future nuclear power reactor licensees and allow the licensees to make hostile action-related emergency declarations based on a credible threat. (A discussion of this issue is also provided in Section II.A.2 of this document.)

The former Section IV.B applied to non-power reactor licensees, and the NRC does not intend to change that requirement in this final rule. Non-power reactor licensees are still required to have EALs to initiate emergency response and protective actions. However, as discussed in Section II.A.2 of this document, the NRC is addressing through guidance the issue of hostile action EALs for non-power reactor licensees. In addition, the definition of “hostile action” does not include non-power reactors. Therefore, non-power reactor licensees are not required to consider hostile action in their EAL schemes at this time.

The final rule also makes changes to Appendix E to conform to changes to § 50.54(q), which address the issue described in Section II.B.5 of this document. The NRC is modifying the requirement in former paragraph (1) in Section IV.B of Appendix E to require each licensee to obtain prior NRC approval via § 50.90 if the licensee is changing its entire EAL scheme. This provision carries forward the intent of the former regulation to compel licensees to obtain NRC approval before changing EAL schemes, and sets forth the correct process to request that approval. The proposed rule would have required licensees to use § 50.4 to obtain prior NRC approval. For many of the same reasons provided earlier in Section IV of this document in the discussion of licensee use of the license amendment process to obtain prior NRC approval of changes to an emergency plan that would reduce the effectiveness of the plan under § 50.54(q), the license amendment process is the appropriate process for licensees to use to obtain prior

NRC approval of EAL scheme changes.

The Commission explained in the Statement of Considerations for the 2005 final rule concerning NRC approval of licensee changes to EALs (70 FR 3591; January 26, 2005) the importance of prior NRC approval of a licensee's EAL scheme change:

The Commission believes a licensee's proposal to convert from one EAL scheme (e.g., NUREG-0654-based) to another EAL scheme (e.g., NUMARC/NESP-007 or NEI-99-01 based) ... is of sufficient significance to require prior NRC review and approval. NRC review and approval for such major changes in EAL methodology is necessary to ensure that there is reasonable assurance that the final EAL change will provide an acceptable level of safety.

As noted above, courts have found that Commission actions that expand licensees' authority under their licenses without formally amending the licenses constitute license amendments and should be processed through the Commission's license amendment procedures. The Commission has determined that a licensee's EAL scheme change requires prior NRC approval "to ensure that there is reasonable assurance that the final EAL change will provide an acceptable level of safety." These determinations require exercises of agency discretion. The staff must ensure that the licensee adopts each element of the generic EAL scheme to fit its site and facility. In addition, the licensee does not have the authority to change to a new scheme unless the NRC approves the change in advance. Under the legal precedents, NRC staff approval in these instances would grant the licensee authority beyond its current operating authority, and that approval requires a license amendment. This final rule clarifies that the process to use to request prior NRC approval of EAL scheme changes is the license amendment process.

The final rule provides additional flexibility by permitting licensees to use EAL schemes other than those listed in Section IV.B.2 of the proposed rule, provided that the licensee obtains

prior NRC approval. The final rule corrects a misstatement in the proposed rule that the former rule required licensees to obtain prior NRC approval via § 50.4 for changes to an EAL scheme from NUREG-0654 to one based solely on NUMARC/NESP-007 or NEI 99-01. The final rule also removes the paragraph numbering in Section IV.B of the former rule. The former first paragraph of Section IV.B., as amended by this final rule, is designated as paragraph 1. As explained above, former paragraph (1) in Section IV.B has been replaced with the provision requiring licensees to obtain prior NRC approval, via a license amendment, for EAL scheme changes. The final rule deletes former paragraphs (2) and (3) of Section IV.B and replaces them with a new requirement that all EAL changes, other than EAL scheme changes, are required to be made under the amended § 50.54(q) change process, as discussed earlier in Section IV of this document. The final rule designates the provisions concerning EAL scheme changes and other EAL changes as paragraph 2. Paragraph B.2 applies to nuclear power reactor licensees and non-power reactor licensees.

The NRC is retaining the existing language of Section IV.C of Appendix E to Part 50, redesignating that language as paragraph C.1, and adding new paragraph C.2. Paragraph C.1 still applies to non-power reactor licensees, but paragraph C.2 does not, for the reasons provided in Section II.B.2 of this document. Paragraph C.2 requires that nuclear power reactor licensees, first, have and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and, second, promptly declare the emergency condition upon identification of the appropriate ECL. Any given emergency condition may result in the thresholds for two or more EALs being exceeded and licensees need to consider all applicable EALs and base the classification decision on that EAL resulting in the higher ECL.

In Part 50, Appendix E, Paragraph C.2 of the proposed rule, the NRC would have required that licensees and applicants had to promptly declare the emergency condition as soon

as possible following a determination that an EAL has been exceeded. The NRC received a stakeholder comment that suggested that the proposed language could be interpreted as requiring declaration on the first identified EAL. Because such an interpretation was not the NRC's intent, the NRC reworded the proposed phrase "following determination that an emergency action level has been exceeded," in the proposed rule to read "following identification of the appropriate emergency classification level," in the final rule to clearly articulate the NRC's intent.

This new requirement emphasizes the NRC's expectations regarding the timeliness of emergency declarations while retaining sufficient operational flexibility to respond to extenuating circumstances necessary to protect public health and safety. The NRC considers the 15-minute criterion to commence when plant instrumentation, plant alarms, computer displays, or incoming verbal reports that correspond to an EAL become available to any plant operator. As used here, "plant operator" means any member of the plant staff, who by virtue of training and experience, is qualified to assess the indications or reports for validity and to compare the same to the EALs in the licensee's emergency classification scheme. "Plant operators" may be, but need not be, licensed operators or members of the ERO. "Plant operators" may be located in the control room or in another emergency facility in which emergency declarations are performed. The phrase "plant operators" does not encompass plant personnel such as chemists, radiation technicians, craft personnel, security personnel, and others whose positions require they report, rather than assess, abnormal conditions to the control room.

The 15-minute period encompasses all assessment, classification, and declaration actions associated with making an emergency declaration from the first availability of a plant indication or receipt of a report of an off-normal condition by plant operators up to and including the declaration of the emergency. Validation or confirmation of plant indications, or reports to the plant operators, is to be accomplished within the 15-minute period as part of the

assessment. A small number of EAL thresholds are related to the results of analyses (e.g., dose assessments, chemistry sampling) that are necessary to ascertain whether or not a numerical EAL threshold has been exceeded, rather than confirming or verifying an alarm or a received report. In these limited cases, the 15-minute declaration period starts with the availability of analysis results that show the threshold to be exceeded; this is the time that the information is available. Nonetheless, the NRC expects licensees to establish the capability to initiate and complete these analyses with a reasonable sense of urgency.

This 15-minute criterion ends as soon as the nuclear power reactor licensee determines that an EAL has been exceeded and the licensee makes the emergency declaration. The final rule requires the licensee to promptly declare the emergency condition as soon as possible following the identification of the appropriate ECL. Because the NRC requires emergency declarations to be made promptly, the final rule states that the 15-minute criterion is not to be construed as a grace period in which a licensee may attempt to restore plant conditions to avoid declaring an EAL that has already been exceeded. If the EAL threshold specifies a duration (e.g., “fire lasting for greater than 10 minutes from detection”), the licensee is expected to assess and classify the event concurrently with the specified condition duration. The licensee is then required to promptly declare the emergency condition as soon as the specified duration has been exceeded because no further assessment is necessary to make the declaration. The licensee is encouraged, but not required, to declare the emergency condition once it has been determined that the condition cannot be corrected before the specified duration is exceeded.

The final rule establishes a capability criterion, rather than an inflexible performance criterion, to allow nuclear power reactor licensees some degree of flexibility in addressing extenuating circumstances that may arise during an actual emergency. For example, an emergency declaration may need to be delayed in the interest of performing plant operations that are urgently needed to protect public health and safety. These delays could be found

acceptable if they did not deny State and local authorities the opportunity to implement actions to protect the public health or safety under their emergency plans and the cause of the delay was not reasonably within the licensee's ability to foresee and prevent.

In the proposed rule, the NRC would have established a 15-minute criterion for the declaration of an emergency condition. The NRC received several stakeholder comments that questioned the magnitude of the numeric criterion. Other comments suggested a less restrictive 1-hour criterion for events classified as Notification of Unusual Events in light of the reduced consequences to the public of these events. In developing this rule, the NRC objective was to codify the 15-minute timeliness goal that had been the expected performance level after the publishing of the EPPOS-2 guidance and which had been incorporated into the ROP. The NRC believes that 15 minutes is an appropriate timeliness capability criterion based on the following rationale. The declaration of a General Emergency requires the nuclear power reactor licensee to provide a recommendation for public protective actions to State and local governments. These protective actions can be more effective in reducing the radiological consequences of the emergency on the public if the action is implemented in a timely manner, preferably before the onset of a major release of radioactive materials. The steps that need to be taken by offsite officials to consider the licensee's recommendation and to decide upon and implement an action cannot start until the licensee has classified and declared the emergency and provided the appropriate recommendation. As such, time is of the essence. The planning basis for emergency planning for nuclear power plants provided in NUREG-0654 addresses a spectrum of accidents. The NUREG-0654 planning basis provides that the onset of the release to the environment following the onset of the event may range from 0.5 hours to one day. Part 50, Appendix E, Section IV.D.3, as amended by the final rule, requires the licensee to have the capability to notify the State and local officials within 15 minutes after declaring an emergency and that the alert and notification system be capable of alerting the public and initiating

notification of the public within about 15 minutes. The 15-minute timeliness expectation for emergency declarations now being codified is consistent with these current regulatory requirements and the EP planning basis.

Although the NRC recognizes that protective actions are not necessary at the lower ECLs and the lower ECL events have lesser potential consequences on the public, the NRC believes that a single timeliness criterion for all four ECLs is necessary. The NRC notes that the ECL, be it a Notification of Unusual Event or a higher ECL, cannot be known until the classification is completed and the declaration is made. This argues against the use of different timeliness criteria for Notification of Unusual Events and higher ECLs because emergency events may not proceed step-wise through the four ECLs.

Further, the actions to assess, classify, and declare an emergency, and the resources needed to accomplish those actions, (e.g., “capability”), do not differ by ECL. (Although there are more EAL thresholds to consider during a Notification of Unusual Event than there are at the higher ECLs, this is balanced by increasing demands on the on-shift staff (i.e., to perform assessments, corrective actions, and mitigative actions needed to address the degraded plant condition) associated with the higher ECLs. The conditions (such as insufficient staffing, procedures, and training) that reduce a nuclear power reactor licensee’s capability for declaring a Notification of Unusual Event within 15 minutes have a similar effect on the licensee’s capability for declaring higher ECLs. Also, the licensee’s performance in declaring Notification of Unusual Events is a viable predictor of licensee performance at the less frequently declared higher ECLs. These performance deficiencies might not be identified and corrected if the NRC were to establish one hour for declaring Notification of Unusual Events and 15 minutes for the higher classification level emergencies. Therefore, the NRC has decided to retain the single timeliness criterion in the final rule for all ECLs.

The NRC is amending Section IV.D.1 of Appendix E to remove footnote 1. This footnote is unnecessary because the term “EPZ” is already addressed in Section I of Appendix E. This change will also make the numbering of footnotes sequentially consistent throughout Appendix E.

The NRC is amending Section IV.D.3 of Appendix E to require that the public alert and notification system required by this section additionally has backup methods for both the alert and notification functions without specifying which backup measures should be used. This approach allows flexibility in the selection of the method best suited for each nuclear power reactor site and also allows the use of newer technologies or other alternative methods. The availability of backup ANS methods enhances the public’s ability to be promptly alerted of an event at a facility and of possible protective actions. (A discussion of this issue is also provided in Section II.B.1 of this document.)

Former Section IV.D.3 of Appendix E acknowledged that, for the events more likely to warrant use of the alert and notification capability, State and local officials will have substantial time available to make a judgment regarding activation of the warning system to alert and notify the public. Accordingly, the final rule will not impose specific time requirements for using a backup method. The alerting function may involve one or more methods that are already used as a backup means at several sites, such as multiple, independent siren activation points in conjunction with siren backup power, route alerting, reverse call-out systems or newer technologies, such as intelligent notification and communication systems for notifying targeted populations. The notification function may involve the designation of multiple EAS broadcast stations or use of weather alert radios or newer technologies, such as advanced messaging systems. The NRC and FEMA are providing guidance, issued contemporaneously with this final rule, for determining the acceptability of the backup methods based on the alerting and notification capabilities of the methods selected, administrative provisions for implementing and

maintaining backup methods, identification of resources to implement backup methods, and periodic demonstration of the backup methods. Guidance is also being provided to nuclear power reactor licensees and offsite officials regarding the need to ensure that the backup methods can alert and notify the public in the entire plume exposure pathway EPZ, that the personnel and resources required to implement the backup methods will be available during any type of emergency (including hostile action), and that designated personnel know how to implement backup methods.

The backup method of alerting and notification must be capable of providing warning signals and instructional messages to the population in the entire plume exposure pathway EPZ when the primary ANS is unavailable during an emergency (i.e., the primary ANS cannot alert or notify all or portions of the plume exposure pathway EPZ population). The backup means may be designed so that it can be implemented using a phased approach in which the populations most at risk are alerted and notified first, followed by alerting and notification of people in less immediately affected areas. The backup method may have the additional capability of being employed only in the specific areas impacted when a portion of the primary ANS, such as a single siren or sirens within a community, fails and the extent of the affected area and population can be determined.

The new requirement for a backup method applies to both the alerting function and notification function of the FEMA approved ANS. However, the NRC recognizes that some backup methods are not capable of meeting the timeframes that are part of the primary ANS design objectives. The intent of the final rule is not to have a duplicate primary ANS, but to have a means of backup alerting and notification in place so the public can be alerted in sufficient time to allow offsite officials to consider a range of protective actions for the public to take in the event of a severe accident with potential offsite radiological consequences. The NRC and FEMA are providing guidance to clarify the design objectives and other criteria for

ANS backup methods.

For nuclear power plant sites with no backup measures currently in place, backup provisions must be identified, incorporated into the site's ANS design, and submitted for FEMA approval as specified in FEMA-REP-10. For nuclear power plant sites that already have provisions for ANS backup means in FEMA approved ANS designs, licensees and offsite officials will need to confirm that the backup methods meet the final rule requirements and submit revised ANS designs for FEMA approval if changes were deemed necessary. New Section IV.D.4 in Appendix E to Part 50 sets forth the deadlines for these implementation phases. Section V of this document provides further explanation of the deadlines.

Additional changes to Appendix E, Section IV.D.3 are being made to more clearly distinguish between the alerting and notification functions of the ANS (including clarification of how the 15-minute design objective applies to these functions), to use consistent terminology when referring to the officials responsible for ANS activation, and to update language regarding demonstration of ANS capabilities and correction of deficiencies. The final rule adds a reference to the alerting function in Section IV.D.3 to clearly indicate that the requirements for the primary and backup ANS apply to both the alerting and notification functions. The wording of the primary ANS design objective is revised to clarify that the 15-minute criterion applies to the completion of the initial alerting and start of the initial notification of the public. This clarification was made because the NRC, consistent with the 1990 Seabrook decision (*Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-935, 32 NRC 57, 68 (1990), has determined that notification of the public need not be completed within 15 minutes but that initiation of the notification process must begin within 15 minutes). The phrase "appropriate governmental authorities" replaces the phrase "State and local officials" when referring to ANS activation to encompass site-specific variations in the assignment of the responsibility for this function according to each offsite emergency plan and established ANS

activation protocols. This responsibility may be assigned to a single State or local organization, or to multiple organizations among various State, county, local, and other governmental agencies. The use of “appropriate governmental authorities” addresses all of these variations. The former Section IV.D.3 referred to the February 1, 1982, date for then existing nuclear power reactor licensees to have demonstrated ANS capabilities for their sites. The NRC is removing the reference to the February 1, 1982 date and requiring that ANS capabilities to alert the public and provide instructions promptly must be demonstrated before exceeding 5 percent rated thermal power of the first reactor at each site, consistent with the requirements of § 50.47(d). It is also important that licensees promptly correct deficiencies found during initial ANS installation and testing, as well as deficiencies identified thereafter, as required by § 50.54(s)(2). However, the requirement for correction of ANS deficiencies is clearly stated in § 50.54(s)(2)(ii) and does not need to be repeated in Part 50, Appendix E, Section IV.D.3.

In the proposed rule, the NRC would have required licensees to identify and demonstrate that governmental authorities had the administrative and physical means for providing a backup method of public ANS. The NRC received several stakeholder comments that noted that governmental authorities are generally responsible for ANS activation and implementing any backup public ANS, and that the licensee has no control over the resources necessary to implement the backup capability. The NRC agrees that licensees generally secure the support of governmental authorities to maintain reasonable assurance that the offsite portions of the emergency plan can and will be implemented. In response to these comments, and to improve regulatory clarity and structure, the final rule modifies the proposed rule language for the backup capability to reflect this division of ANS responsibilities.

Note that no changes are being made to the basic requirement in § 50.47(b)(5) for nuclear power reactor licensees or applicants to ensure that the means to provide early notification and clear instruction (i.e., alerting and notification) to the populace in the plume

exposure pathway EPZ have been established. It is not necessary to address backup methods in § 50.47(b)(5) because the current provision establishes the overall requirement for alerting and notification.

Based on a comment received on the proposed rule, Part 50, Appendix E, Section IV.E.5 is revised to replace the reference to “physicians” with the term “medical service providers” because licensees typically make arrangements for medical services with medical service providers rather than individual physicians. The phrase “and other medical personnel” is deleted because it is now redundant to the reference to “medical service providers.” The NRC also revised Section IV.E.5 of Appendix E to change the term “radiation” to “radiological,” to provide consistent use of the phrase “radiological emergency.”

The final rule redesignates the former language of Appendix E, Section IV.E.8 as Section IV.E.8.a; and adds new Sections IV.E.8.b, IV.E.8.c, IV.E.8.d, and IV.E.8.e.

Section IV.E.8.a in the final rule removes the reference to the EOF as a “near-site” facility and adds the requirement that nuclear power reactor licensees must provide an OSC. In a conforming change, the final rule revises § 52.79(a)(17) to clarify that combined license applications are not subject to the TMI action requirements in § 50.34(f)(2)(xxv), which address the need for an onsite TSC, an onsite OSC, and an EOF. Instead, the requirements governing the need for such facilities in Part 50, Appendix E, Section IV.E.8.a(i) will apply to combined license applications. (A discussion of this issue is also provided in Section II.B.3 of this document.)

Section IV.E.8.b incorporates EOF distance criteria currently found in NRC guidance and specifies that an EOF must be located within 10 to 25 miles of each nuclear power reactor site that the facility serves or, if the EOF is located less than 10 miles from a nuclear power reactor site, then a backup facility must be provided within 10 to 25 miles of a site. The distance between the EOF and a site will be determined by the straight line distance from the site’s TSC

to the EOF, which is consistent with the approach described in NUREG-0696, Table 2, "Relation of EOF Location to Habitability Criteria," dated February 1981. An exception to the 25-mile limit will be made for an EOF as long as provisions for locating NRC and offsite responders closer to that nuclear power reactor site are made so they can interact face-to-face with personnel going to and leaving the site for briefings and debriefings. During an event, NRC and offsite agency staff may wish to relocate from a remotely located EOF to another facility closer to the nuclear power plant site. Suitable space near the site must be available so NRC and offsite agency staff could coordinate their actions efficiently, communicate with responders in other onsite and offsite emergency response facilities, and interface directly with responders at the site as needed. This space will allow NRC site team and offsite response personnel, including Federal, State, and local responders, to conduct briefings and debriefings with emergency response personnel entering and leaving the site, communicate with responders at other emergency response facilities, maintain awareness of conditions at the site, and share information with other emergency response organizations via electronic means, such as computer links, the internet, or facsimile transmission.

Section IV.E.8.c in the final rule provides performance based criteria applicable to all EOFs. The functions that an EOF must address include the capability to obtain and display plant data and radiological information for each reactor unit or plant that the facility serves. In some cases, an EOF may serve units or plants involving more than one type of reactor technology, such as pressurized water reactors and boiling water reactors, or more than one design of the same reactor type. The EOF staff must be capable of understanding conditions for each type of reactor and translating technical information into a useful form for offsite officials and media relations staff. A co-located or consolidated facility must also be capable of supporting effective response to events at more than one site simultaneously, because widespread events affecting multiple sites can and have occurred, such as the electrical

blackout in several areas of the northeastern U.S. and portions of Canada in August 2003. The ability to simultaneously display information for multiple plants will also enhance effective response to events occurring at more than one site.

By codifying EOF distance requirements in Section IV.E.8.b of Appendix E and providing specific criteria for EOFs in Section IV.E.8.c, the final rule language will obviate the need for licensees to seek NRC approval at either the NRC staff or Commission level to locate an EOF or consolidate EOFs meeting certain performance based requirements and having provisions for NRC site team and offsite agency responders closer to a site if the EOF is located more than 25 miles from a site. Licensees can then implement a relocated or consolidated facility as part of their emergency response plans under the provisions of § 50.54(q) without prior NRC approval. The final rule language also addresses Commission direction provided in the SRM to SECY-04-0236, as discussed in Section II.B.3 of this document. During exercises and actual events, EOFs located more than 25 miles from a site that have been previously approved by the NRC have functioned as effective emergency response facilities and demonstrated that a near-site EOF is not necessary to adequately protect public health and safety.

Although not included in the final rule language of Section IV.E.8.b or IV.E.8.c as a requirement, the NRC believes it is important for licensees or applicants to consult with offsite agencies that send representatives to the EOF prior to relocating or consolidating such facilities. This consultation is particularly important when a licensee or applicant intends to use an EOF located more than 25 miles from a site to ensure that response times to the facility would be acceptable to offsite responders, adequate communications with offsite responders at other locations would be available, and there would be no jurisdictional concerns with the EOF location (e.g., when the EOF is located in a different State than a nuclear power plant). Additional criteria regarding EOF habitability, size, staffing, and other characteristics will remain as guidance.

Section IV.E.8.d in the final rule requires nuclear power reactor licensees to identify an alternative facility (or facilities) that would be accessible even if the site is under threat of or experiencing hostile action, to function as staging areas for augmentation of ERO staff during hostile action to minimize delays in emergency response and provide for a swift coordinated augmented response. To accomplish this, the alternative facility is required to have the following characteristics: the capability for communication with the EOF, control room, and plant security; the capability to notify offsite agencies; and the capability for engineering assessment activities, including damage control team planning and preparation. These capabilities will ensure that the ERO is aware of conditions at the site and is prepared to re-enter the site when it is deemed accessible. This will enable rapid staffing of onsite emergency response facilities and implementation of mitigation actions when ERO personnel enter the protected area. However, alternative facilities are not required to reproduce the full documentation present at primary emergency response facilities.

In the proposed rule, the NRC would have required nuclear power plant licensees and applicants under Part 50 and Part 52 to identify an alternative facility (or facilities) to function as staging areas for augmentation of ERO staff during hostile action. The NRC received several stakeholder comments that stated that the proposed rule was not consistent with the wording of Attachment 5 to BL-05-02. One commenter indicated that the use of the parenthetical phrase “(or facilities)” can be interpreted in two ways. If licensees use multiple locations to function as the alternative facility, then this phrase could mean that either all the locations will have the characteristics of the alternative facility or that these locations will collectively have those characteristics. To clarify this provision, the NRC changed the language of the final rule to explicitly state that the alternative facility (or facilities) must collectively have the necessary characteristics.

In the proposed rule, the NRC would have required the alternative facility (or facilities) to collectively exhibit certain characteristics, one of which was “accessibility even if the site is under threat of a, or during an actual, hostile action.” The NRC’s Advisory Committee on Reactor Safeguards, Plant Operations and Fire Protection Subcommittee, questioned whether the NRC intended for this provision to require that if multiple facilities are utilized as the alternative facility, then each of the facilities must be accessible during hostile action or the threat thereof. Because the purpose of this provision is to require nuclear power reactor licensees to have an alternative facility (or facilities), each of which would be accessible under the threat of a, or during an actual, hostile action, the NRC changed the language of the final rule to clarify this characteristic of the alternative facility (or facilities).

The same commenter also stated that the proposed rule would require the alternative facility to have the capability to perform offsite notifications whereas the wording of BL-05-02 states that one of the alternative facility characteristics is the capability to notify offsite response organizations if the EOF is not performing this action. The commenter argued that the final rule should have the same wording as contained in BL-05-02. The NRC disagrees with this comment. The intent of BL-05-02 was to provide a backup capability to perform offsite notifications if the other licensee emergency response facilities were not available due to a hostile action. In the event of a hostile action, there is no guarantee that the EOF would be available to perform this action. Therefore, the NRC has determined that the capability to perform offsite notifications is a necessary characteristic of alternative facilities. Licensees have the option to use the EOF as their alternative facility if it is located outside the owner-controlled area and is within about 30 miles of the site. If the EOF is not the designated alternative facility, then the alternative facility must also have the capability to perform offsite notifications, though not necessarily with the identical equipment utilized in other emergency response facilities.

The commenter also pointed out that the final rule should have the same wording as BL-05-02, which states that “it is appropriate for alternative facilities to have general plant drawings, procedures, phones, and (ideally) computer links to the site.” Another commenter recommended an increased implementation period for this part of the rule since licensee facilities do not meet the proposed requirements for the availability of computer links and would need to make facility changes under the site modification process. The NRC agrees in part with these comments. BL-05-02 does direct licensees to equip alternative facilities as stated. However, the NRC has determined that since the alternative facility (or facilities) must have the capability for communication with the EOF, control room, and site security; to perform offsite notifications; and for engineering assessment activities, including damage control team planning and preparation, then licensees should have flexibility in meeting these requirements based on site-specific characteristics. Also, the NRC did not intend for licensees to perform major facility modifications or construct new facilities to meet the new requirement. The NRC intends for licensees to use existing facilities that are a safe distance from the plant. Therefore, the NRC will not codify the equipment that must be present in the alternative facility (or facilities) but rather will allow licensees to achieve the required capabilities of the alternative facility (or facilities) in the most appropriate manner for their site. (A discussion of this issue is also provided in Section II.A.3 of this document.)

The NRC is also adding new Section IV.E.8.e to permit a nuclear power reactor licensee, that, on the day the final rule becomes effective, has an approved EOF that does not meet the distance criteria for a primary or backup EOF, or does not have provisions for a facility closer to the site if the EOF is located more than 25 miles from a nuclear power reactor site, to not be subject to the requirements of Section IV.E.8.b. These licensees have already received approval from the Commission for variances from existing requirements (and guidance) regarding EOF locations, backup EOF facilities, or other EOF characteristics. (Also refer to the

discussion of this issue in Section II.B.3 of this document.)

The NRC is amending Sections IV.E.9.c and IV.E.9.d to remove references to the EOF as a “near-site” facility. Criteria are provided in Section IV.E.8 of Appendix E, regarding EOF distance from a nuclear power reactor site and for a performance based approach for EOFs. The criteria specify that these facilities need to meet certain functional requirements rather than requiring that they be located within a certain distance of the plant. The intent of this change is discussed in the changes to Section IV.E.8 of Appendix E. (A discussion of this issue is also provided in Section II.B.3 of this document.)

The NRC is revising paragraph F.1.a of Section IV to remove the word “radiation” because the advent of hostile action scenarios renders usage of the word as too limiting in describing potential emergencies. This change provides consistent use of the term “emergency plan.” The NRC is also revising paragraph F.1.b to change the term “radiation” to “radiological,” to provide consistent use of the phrase “radiological emergency.”

The final rule revises Section IV.F.2 to replace “public notification system” with “public alert and notification system.” In the proposed rule, Section IV.F.2 referred to the ANS as the “public notification system” and other sections of the rule referred to the ANS as the “public alert and notification system.” The NRC received a comment identifying this inconsistency. “Public notification system” has been changed in the final rule to the “public alert and notification system” for clarity and consistency with the usage elsewhere.

The NRC is adding a new requirement to Section IV.F.2.a to require nuclear power reactor licensees to submit, for NRC review and verification, scenarios for full participation exercises required by Appendix E, Section IV.F.2.a. This requirement enables the NRC to ensure that licensees implement in their exercise scenarios the new requirements of Sections IV.F.2.i and IV.F.2.j of Appendix E, including hostile action and a variety of challenges to reduce preconditioning of responders.

The NRC is also inserting the word “initial” in paragraph F.2.a to distinguish between the requirements of paragraphs F.2.a and F.2.b. (A discussion of this issue is also provided in Section II.A.6 of this document.)

The NRC is revising paragraphs F.2.a.(ii) and F.2.a.(iii) of Appendix E, Section IV to replace “DHS” with “FEMA.” Although FEMA remains within DHS, the responsibility for offsite EP for nuclear power plants is with FEMA. FEMA requested that “FEMA” be used rather than “DHS” for clarity of communication with stakeholders. In addition, in the first sentence of paragraph F.2.a.(iii), the NRC is changing the word “licensee” to “license” to correct a typographical error.

The NRC is revising Section IV.F.2.b to require nuclear power reactor licensees to submit scenarios for their onsite biennial exercises under 10 CFR 50.4. This requirement enables the NRC to verify that licensees implement in their exercise scenarios the requirements of Appendix E, Sections IV.F.2.i and IV.F.2.j, including hostile action and a variety of challenges to reduce preconditioning of responders. The NRC received comments regarding the timeliness of scenario reviews and has included language in the rule to specify that licensees must submit scenarios to the NRC at least 60 days before the start of the biennial exercise. The NRC will not approve scenarios, but will comment if concerns are noted. The NRC will provide any comments to the licensee no later than 30 days before the exercise begins. The NRC is also inserting the word “subsequent” in paragraph F.2.b of Section IV to distinguish between the requirements of paragraphs F.2.a and F.2.b.

The former Section IV.F.2.b required that licensees ensure that adequate emergency response capabilities are maintained to address several principal emergency response functional areas. The NRC is expanding the list of principal functional areas of emergency response in paragraph F.2.b to include event classification, notification of offsite authorities, assessment of the impact of onsite and offsite radiological releases, and development of

protective action recommendations. These additional functional areas are associated with the planning standards in § 50.47(b) that have a significant impact on determining the licensee's ability to implement adequate measures to protect public health and safety during a radiological emergency (i.e., § 50.47(b)(4) regarding event classification, § 50.47(b)(5) regarding notification of offsite authorities, § 50.47(b)(9) regarding assessment of radiological releases, and § 50.47(b)(10) regarding protective actions).

Additionally, the NRC is clarifying the intent of the principal functional areas by replacing the term "corrective actions" with the term "mitigative action implementation" in Section IV.F.2.b. The term "corrective actions" is generally associated with a process (e.g., the Corrective Action Program) to address identified plant problems. However, this process is not normally used during the active response to an emergency. "Mitigative action implementation" is a more accurate description of the principal functional area that is to be demonstrated in exercises and drills. This term is not the same as "plant system repair," another principal functional area, because "mitigative action implementation" may involve equipment, procedures, and strategies developed under § 50.54(hh), the use of fire truck pumping capacity to inject water, or some ad hoc action. "Mitigative action implementation" communicates the expectation for a much more rapid response process than is communicated by "corrective actions" as that term is commonly used within the commercial nuclear power industry.

The NRC is amending the last sentence of Section IV.F.2.b to add "in all participating facilities" after "operating staff" to clarify that the operating staff from all facilities need not participate in the drill. The NRC is also changing "the drills could focus on onsite training objectives" to "the drills may focus on the onsite exercise training objectives" to make the permissive intent of the regulatory language more explicit.

The NRC is amending the third sentence of Section IV.F.2.c by correcting grammar without changing the substance or intent of the provision. The word "and" is being removed

from the end of Section IV.F.2.c.(1) and (2), and a semicolon replaces the period at the end of Section IV.F.2.c.(3), for the same reason. The NRC is also adding Section IV.F.2.c.(4) and (5) to clarify requirements for nuclear power reactor licensees at co-located sites to conduct hostile action exercises. The NRC received a comment regarding this issue and modified the proposed rule to direct that hostile action exercises be rotated between the licensees. This change flows logically from the new requirement to conduct hostile action exercises. Specific provisions for the conduct of exercises at co-located sites have been previously promulgated to clarify requirements for ORO participation (70 FR 3591). This action was appropriate because the same OROs support the emergency plans of both licensees at a co-located site. This final rule in Section IV.F.2.c.(5) requires that licensees at a co-located site rotate participation with OROs in hostile action exercises in a manner similar to other exercise participation to ensure that all licensees participate with OROs on a periodic basis. However, Section IV.F.2.c.(4) requires that licensees not participating with OROs conduct at least the onsite portion of hostile action exercises in each exercise cycle in order to ensure the maintenance of key skills.

The NRC is amending Section IV.F.2.d to reflect exercise cycle requirements for States with respect to ingestion pathway and hostile action exercises. The proposed rule included a case-by-case assessment for scheduling of hostile action exercises in States with multiple nuclear power reactors. However, in public meetings stakeholders commented that case-by-case assessments would create regulatory uncertainty. The final rule addresses exercises in States with multiple nuclear power reactor plume exposure pathway EPZs by requiring licensees to periodically participate in full or partial participation hostile action exercises by rotating State participation among the licensees.

Part 50, Appendix E, Section IV.F.2.d of the former rule provided that States should fully participate in the ingestion pathway portion of exercises at least once every six years. As explained below regarding changes to Section IV.F.2.j, the NRC is requiring exercise cycles to

be eight years long. A logical extension of establishing an eight-year exercise cycle is to eliminate the minimum frequency element in Section IV.F.2.d and state that States should fully participate in a hostile action exercise every cycle.

The NRC is amending Section IV.F.2.f to add a second situation when remedial exercises are required. The final rule explains that remedial exercises will be required if the emergency plan is not satisfactorily tested during the biennial exercise, such that the NRC, in consultation with FEMA, cannot find reasonable assurance that adequate protective measures can be taken in response to an emergency or determine that key ERO skills had been maintained. This change demonstrates the NRC's intent to invoke this requirement for exercises where the scope of the exercise is not sufficient to demonstrate the maintenance of key ERO skills. In the past, some exercises have not provided such a demonstration due to the use of simplistic scenarios. The final rule change is intended to prevent this trend in the future.

The key skills necessary to implement the emergency plan vary among ERO members, emergency response facilities, and licensees. In general, key skills include the ability to implement emergency response procedures specific to the duties of the ERO member. Key skills include specific response capabilities that may be assigned in a site-specific manner such as:

- Timely classification of events;
- Timely notification of offsite authorities;
- Assessment of radiological releases onsite and offsite;
- Development of protective action recommendations;
- Dissemination of information to the public via media channels;
- Engineering assessment, repair plan development, and repair of critical equipment under emergency conditions;
- Mitigative action implementation;

- Protection of workers during emergency response, including medical care;
- Response to operational transients while implementing the emergency plan; and
- Coordination with offsite response organizations.

In the proposed rule, the NRC provided a list of key skills licensees' emergency responders would have needed to implement emergency response procedures. The NRC received a comment that argued that the list of skills needs to be more specific. The NRC does not agree with this comment because the skills listed are more specific than previous requirements, are elaborated upon in guidance, and in some cases have been defined through the EP performance indicator program, as described in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 6, dated October 2009.

The NRC is also revising Section IV.F.2.g to require licensees to correct any weaknesses or deficiencies identified during exercises, drills, or training. This change explicitly states the regulatory intent that licensees must formally critique performance opportunities that develop, maintain, or demonstrate key skills in exercises, drills, and training, and correct any weaknesses or deficiencies identified in a critique. The term "performance opportunity" is used to indicate actual experiential events where proficiency in key skills is demonstrated. Classroom training may not provide an actual performance enhancing experience but rather offer instruction, while tabletop drills and operator requalification drills may offer actual performance opportunities.

The NRC is revising Section IV.F.2.h in the final rule to correct the reference to the section of Part 50 that pertains to situations in which State and local governments refuse to participate in emergency planning activities. The reference was changed to § 50.47(c)(1).

The NRC is adding new Section IV.F.2.i to Appendix E to require all nuclear power reactor licensees to include hostile action in biennial evaluated exercises. The final rule also ensures that scenarios will be sufficiently varied by requiring the use of a wide spectrum of

radiological releases and events, to properly train responders to respond to events more realistic than those currently used in training, and to avoid preconditioning the responders to success with inappropriate anticipatory responses. Licensees are also required to emphasize coordination in their drills and exercises among onsite and offsite response organizations to strengthen the capabilities of the OROs to adequately respond to an emergency at the plant that requires offsite response. (A discussion of this issue is also provided in Section II.A.6 of this document.)

The NRC is adding new Section IV.F.2.j to Appendix E to require that nuclear power reactor licensees conduct exercises that provide ERO members the opportunity to demonstrate proficiency in the key skills necessary to implement the principal emergency response functional areas identified in Section IV.F.2.b. Each exercise will also be required to provide ERO members the opportunity to demonstrate key skills specific to the emergency response duties in each emergency response facility. During each exercise cycle, licensees will be required to vary the content of exercise scenarios to provide ERO members the opportunity to demonstrate proficiency in the key skills necessary to respond to several specific scenario elements, including hostile action directed at the plant site; no radiological release or an unplanned minimal radiological release that does not require public protective actions; an initial classification of or rapid escalation to a Site Area Emergency or General Emergency; implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2); and integration of offsite resources with onsite response. The final rule identifies the exercise cycle as eight calendar years, which must begin in the year of the licensee's first hostile action exercise.. This amendment prescribes the minimum exercise scenario elements necessary for licensees to meet NRC expectations for challenging and varied scenario content in biennial exercises.

The NRC received comments regarding the proposed requirement that the first exercise

in the new cycle must include hostile action. In States with multiple nuclear power reactor sites, this would require several such exercises in succession, increasing the burden on State emergency management agencies to support these exercises and perhaps reducing the benefit of preparedness efforts. The implementation period for this provision of the final rule was modified to allow current licensees until December 31, 2015, to conduct a hostile action exercise. The final rule clarifies the expectation that States should fully participate in a hostile action exercise by December 31, 2015, and that State full participation should be rotated among licensees in States with more than one nuclear power reactor plume exposure pathway EPZ.

The NRC believes that in the current threat environment nuclear power reactors may be a target for hostile action. Although such an attack is unlikely, EP is a defense-in-depth measure and NRC rules require preparedness for unlikely accidents and events. The final rule requires that hostile action response be integrated formally into the EP program through the inspection of biennial exercises performed early in the first exercise cycle and periodically thereafter.

The proposed rule would have identified the exercise cycle as six years. The proposed rule additionally would have specified a minimum frequency for hostile action scenarios. However, the NRC received numerous comments that the cycle should be changed to eight years and that a minimum frequency for hostile action scenarios should be eliminated to allow more flexibility in meeting the new requirements as well as preserving the variability of scenario challenges. Additionally, the commenters stated that the new requirements for scenario content coupled with the existing requirements would degrade the ability to vary scenario content. The NRC agrees with these comments and has changed the proposed rule to establish an eight-year exercise cycle without a minimum frequency for hostile action scenarios. This change enhances the ability of licensees to vary exercise scenario content in line with the

numerous comments received on this issue.

Section IV.F.2.j in the final rule requires that nuclear power reactor licensees maintain a record of exercises that documents the contents of scenario elements used for each exercise during an exercise cycle to comply with the requirements of paragraph F.2.j. The documentation should include, but not be limited to, the following items for each scenario: sequence and timeline of events; extent of ERO participation and objectives to be demonstrated; opportunities for ERO demonstration of classification, notification, and development of protective action recommendations; expected radiological release conditions and demonstration of dose assessment, including dose projection results; and expected onsite/offsite radiological survey activities and results.

In the proposed rule, Section IV.F.2.j referenced § 50.54(hh) in the scenario elements for the exercise cycle. The NRC received one comment that suggested that the NRC delete the reference to § 50.54(hh) in Section IV.F.2.j and that hostile action drills be evaluated and incorporated into the NRC's triennial FOF drills. The NRC does not agree with this comment. The NRC added the use of mitigation equipment and procedures required by § 50.54(hh)(2) and response to hostile action in the final rule because they are important elements of nuclear plant defense-in-depth. Including the use of § 50.54(hh)(2) equipment in FOF drills would be inappropriate because the ERO, not security responders, would use the equipment. Additionally, the NRC has previously determined that combining EP and FOF drills would be extremely complicated due to differences in scope of the two evolutions and the introduction of safeguards information issues. Further, the exercises are easily separated and performance addressed individually because the response is essentially serial. The aftermath of a security response can be simulated effectively in EP exercises. This has been demonstrated during the hostile action drill pilot program.

NRC received a comment that proposed Section IV.F.2.j could be interpreted as requiring an aircraft response in every hostile action exercise because proposed Section IV.F.2.j referenced § 50.54(hh). Section 50.54(hh)(1) requires certain actions to be taken in response to an aircraft threat. Section 50.54(hh)(2) requires the development of strategies, procedures, and guidance for response to loss of large areas of the plant due to fire or explosion. The NRC intended to require the demonstration of strategies, procedures, and guidance developed under § 50.54(hh)(2) as these elements could be used in response to many accident scenarios, as well as in the aftermath of hostile action, increasing the variability of scenarios. Implementation guidance accompanying this final rule recommends that licensees demonstrate their response to an aircraft threat under § 50.54(hh)(1) during an exercise cycle, but not necessarily during a biennial exercise. Section IV.F.2.j was clarified to require demonstration of § 50.54(hh)(2) capabilities in a biennial exercise during each exercise cycle.

The NRC is adding new Section IV.I to Appendix E that requires nuclear power reactor licensees to provide an expanded range of protective measures for onsite personnel that are appropriate for protection against hostile action. These measures will be site-specific and consider issues such as the location of workers in relation to potential targets, which will dictate if sheltering and/or evacuation are appropriate to adequately protect the workers. Also, these measures are prudent to protect personnel necessary to safely shut down the reactor and emergency responders who are necessary to implement the licensee's emergency plan. By specifying these measures for personnel designated to carry out site emergency actions, other onsite workers will also be protected because the onsite protective measures that were deemed appropriate to protect against hostile action would be provided via plant page announcements or at the direction of site security personnel to the site as a whole and would not be directed to any particular group of workers. The new requirement does not direct any specific actions, but will allow licensees flexibility to determine the most effective protective measures for onsite

personnel protection on a site-specific basis. It also will allow licensees to take advantage of new technologies or other innovations that can further enhance the protection of workers. (A discussion of this issue is also provided in Section II.A.5 of this document.)

V. Implementation

This final rule becomes effective **[INSERT DATE 30 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Licensees will be permitted to defer implementation of the final rule until **[INSERT DATE 180 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, except for the following rule changes:

(1) The new requirements under § 50.54(q) (emergency plan change process). Submittal of proposed emergency plan changes for prior NRC approval made on or after the effective date of the final rule must conform with the new requirements under § 50.54(q)(4). Submittal of emergency plan change documentation made on or after the effective date of the final rule must conform with the new requirements under § 50.54(q)(5);

(2) The new requirements under Part 50, Appendix E, Section IV.1-7 (evacuation time estimate updates), which each applicable licensee is required to implement within 365 days of the later of the date of availability of the most recent decennial census data from the U.S. Census Bureau or **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]**;

(3) The new requirements under Part 50, Appendix E, Section IV.A.7 (licensee coordination with OROs), which each applicable licensee is required to implement no later than **[INSERT DATE 30 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**. The implementation period for this requirement was revised from 180 days after publication of the final rule in the *Federal Register* in the proposed rule to 30 months after the effective date of the final rule based on comments that 180 days may not be sufficient time to obtain new or update existing arrangements involving offsite resources that support onsite and offsite response

activities. The NRC believes that a 30-month time frame is more reasonable for this activity, and the final rule reflects this adjustment to the implementation schedule;

(4) The new requirements under Part 50, Appendix E, Section IV.A.9 (on-shift staffing analysis), which each applicable licensee must implement no later than **[INSERT DATE 365 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**. The implementation period for this requirement was revised from 180 days after publication of the final rule in the *Federal Register* in the proposed rule to 365 days after the effective date of the final rule based on comments that 180 days may not be sufficient time to perform the on-shift staffing analysis. However, licensees are expected to take interim compensatory measures to address any staffing shortfalls identified in the staffing analysis within 30 days of when the results of the staffing analysis are available, and then implement long-term corrective actions within 24 months of performing the staffing analysis;

(5) The new requirements under Part 50, Appendix E, Section IV.D.3 (backup means for alert and notification systems). Where FEMA has approved a nuclear power reactor site ANS design report including the backup ANS capability, this rule provision must be implemented by **[INSERT DATE 12 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**. Where the ANS design report does not include backup ANS means or is in need of revision to ensure adequate backup ANS capability, a revision of the ANS design report must be submitted to FEMA for review by **[INSERT DATE 18 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]** and the FEMA-approved backup ANS means must be implemented within 365 days after FEMA approval. However, the total time period to implement a FEMA-approved backup ANS means shall not exceed **[INSERT DATE 3 YEARS AND 6 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**;

(6) The new requirements under Part 50, Appendix E, Section IV.E.8.d (emergency response organization augmentation at alternative facility), which each applicable licensee is

required to implement no later than **[INSERT DATE 36 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, with the exception of the capability for staging emergency response organization personnel at an alternative facility (or facilities) and the capability for communications with the EOF, control room, and plant security, which must be implemented no later than **[INSERT DATE 180 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**; and

(7) The new requirements under Part 50, Appendix E, Section IV.F.2 (challenging drills and exercises), which each applicable licensee is required to conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year of the first hostile action exercise. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a. The implementation schedule for the changes in Appendix E, Section IV.F.2, allows current licensees the flexibility to complete biennial exercises that are already in the planning process when the final rule becomes effective, without having to consider the new requirements of the final rule.

Certain applicants for an early site permit under Part 52, or a combined license under Part 52, can defer compliance with this final rule. Such an applicant can defer compliance if its application complies with all applicable, current (prior to this rulemaking) EP regulations, and the applicant, if it becomes an early site permit holder or a combined licensee, request to amend its early site permit or combined license before December 31, 2013, to comply with the amended EP regulations in this final rule. The applicant, if it becomes a combined licensee, may not operate the facility until the NRC has approved the license amendment demonstrating compliance with this rule. If the applicant does not receive a combined license or early site permit before December 31, 2013, the applicant shall revise its combined license or early site permit application to comply with those changes no later than December 31, 2013.

In the proposed rule, the NRC also requested input on the implementation schedule for each element of the proposed rule for current licensees. The NRC received a number of comments on the appropriateness of the proposed implementation schedule, including whether arbitrary implementation deadlines were needed or if schedules should be site-specific to allow licensees to budget resources and properly coordinate EP program changes with OROs. The NRC believes that a single fixed implementation schedule is warranted to avoid wide variations among licensees in implementing the new requirements, to ensure that new requirements with long lead times, such as those involving biennial exercises, are addressed in a timely manner, and to avoid potential problems for offsite agencies that support multiple sites.

VI. Guidance

The NRC revised existing guidance and provided new guidance for the new requirements in this final rule. This guidance is intended to provide an acceptable method of how licensees and applicants can meet the requirements of the final rule.

VII. Criminal Penalties

Section 223 of the Atomic Energy Act of 1954, as amended (AEA), provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under Sections 161b, 161i, or 161o of the AEA. For the purposes of Section 223 of the AEA, the Commission is amending 10 CFR Parts 50 and 52 and Appendix E to Part 50 under Sections 161b, 161i, and 161o of the AEA.

VIII. Agreement State Compatibility

Under the Policy Statement on Adequacy and Compatibility of Agreement States

Programs, approved by the Commission on June 20, 1997, and published in the *Federal Register* (62 FR 46517; September 3, 1997), this rule is classified as compatibility “NRC.” Compatibility is not required for Category “NRC” regulations. The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the AEA or the provisions of this chapter. Although an Agreement State may not adopt program elements reserved to the NRC, it may wish to inform its licensees of certain requirements by a mechanism that is consistent with the particular State’s administrative procedure laws. Category “NRC” regulations do not confer regulatory authority on the State.

IX. Availability of Documents

The NRC is making the documents identified below available to interested persons through one or more of the following methods, as indicated.

Public Document Room (PDR). The NRC Public Document Room is located at 11555 Rockville Pike, Rockville, Maryland 20852.

Regulations.gov (Web). These documents may be viewed and downloaded electronically through the Federal e-Rulemaking Portal <http://www.regulations.gov>, Docket number NRC-2008-0122.

NRC’s Electronic Reading Room (ERR). The NRC’s public electronic reading room is located at www.nrc.gov/reading-rm.html.

Document	PDR	Web	ERR (ADAMS)
NRC Order EA-02-026, “Order for Interim Safeguards and Security Compensatory Measures,” issued February 25, 2002	X		ML020510635

Document	PDR	Web	ERR (ADAMS)
SRM-M041214B- "Briefing on Emergency Preparedness Program Initiatives, 1:00 P.M., Tuesday, December 14, 2004, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated December 20, 2004	X		ML043550354
Bulletin 2005-02 (BL-05-02), "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005	X		ML051990027
SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance," dated September 20, 2006	X		ML061910707
SRM to SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance" dated January 8, 2007	X		ML070080411
Memorandum to the Commission, "Rulemaking Plan for Enhancements to Emergency Preparedness Regulations and Guidance," dated April 17, 2007	X		ML070440148
SRM-M060502, "Staff Requirements – Briefing on Status of Emergency Planning Activities, (Two sessions) 9:30A.M. and 1:00 P.M., Tuesday, May 2, 2006, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to public attendance)" dated June 29, 2006	X		ML061810014
"Summary of March 5, 2008 Meeting to Discuss Emergency Preparedness Draft Preliminary Rule Language," dated April 3, 2008	X	X	ML080940227
Draft Preliminary Rule Language, Emergency Preparedness Rulemaking, February, 2008	X	X	ML080370069

Document	PDR	Web	ERR (ADAMS)
"Summary of July 8, 2008 Meeting to Discuss Comments on Emergency Preparedness Draft Preliminary Rule Language," dated August 6, 2008	X	X	ML082180005
Order EA-02-261, "Access Authorization Order," issued January 7, 2003 (68 FR 1643; January 13, 2003)	X		ML030060360
Order EA-03-039, "Security Personnel Training and Qualification Requirements (Training) Order," issued April 29, 2003 (68 FR 24514; May 7, 2003)	X		ML030910625
Order EA-03-086, "Revised Design Basis Threat Order," issued April 29, 2003 (68 FR 24517; May 7, 2003)	X		ML030740002
Federal Register Notice – Final Rule to Amend 10 CFR 73.1: Design Basis Threat (72 FR 12705; March 19, 2007)	X		ML070520692
Information Notice (IN) 91-77, "Shift Staffing at Nuclear Power Plants," dated November 26, 1991	X		ML031190405
IN 93-81, "Implementation of Engineering Expertise On-Shift," dated October 12, 1993	X		ML031070314
IN 95-48, "Results of Shift Staffing Study," dated October 10, 1995	X		ML031060170
NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated November 1980	X		ML040420012
NUMARC/NESP-007, Revision 2, "Methodology for Development of Emergency Action Levels," dated January 1992	X		ML041120174

Document	PDR	Web	ERR (ADAMS)
NEI 99-01, Revision 5, "Methodology for Development of Emergency Action Level," dated September 2007	X		ML073330643
Regulatory Issue Summary 2004-15, "Emergency Preparedness Issues: Post-9/11," dated October 18, 2004	X		Non-Publicly Available
NEI 06-04, "Conducting a Hostile Action-Based Emergency Response Drill," Rev. 1, dated October 30, 2007	X		ML073100460
RIS 2008-08, "Endorsement of Revision 1 to Nuclear Energy Institute Guidance Document NEI 06-04, "Conducting a Hostile Action-Based Emergency Response Drill," dated March 19, 2008	X		ML080110116
IN 2002-25, "Challenges to Licensees' Ability to Provide Prompt Public Notification and Information During an Emergency Preparedness Event," dated August 26, 2002	X		ML022380474
IN 2005-06, "Failure to Maintain Alert and Notification System Tone Alert Radio Capability," dated March 30, 2005	X		ML050680335
IN 2006-28, "Siren System Failures Due to Erroneous Siren System Signal," dated December 22, 2006	X		ML062790341
IN 1996-19, "Failure of Tone Alert Radios to Activate When Receiving a Shortened Activation Signal," dated April 2, 1996	X		ML031060187
Regulatory Guide (RG) 1.155, "Station Blackout," issued August 1988	X		ML003740034
IN 85-80, "Timely Declaration of an Emergency Class, Implementation of an Emergency Plan, and Emergency Notifications," dated October 15, 1985	X		ML031180307

Document	PDR	Web	ERR (ADAMS)
Emergency Preparedness Position (EPPOS)-2, "Emergency Preparedness Position (EPPOS) on Timeliness of Classification of Emergency Conditions," dated August 1, 1995	X		ML023040462
NUREG/CR-6953 Vol. 1, "Review of NUREG-0654 Supplement 3, Criteria for Protective Action Recommendations for Severe Accidents," dated December 2007	X		ML080360602
NUREG/CR-6863, "Development of Evacuation Time Estimates for Nuclear Power Plants," dated January 2005	X		ML050250240
NUREG/CR-6864, "Identification and Analysis of Factors Affecting Emergency Evacuations," dated January 2005	X		ML050250245
Withdrawal of Emergency Preparedness Position (EPPOS) 4, "Emergency Plan and Implementing Procedure Changes," dated November 19, 1998	X		ML050800537
RIS 2005-02, "Clarifying the Process for Making Emergency Plan Changes," dated February 14, 2005	X		ML042580404
"Summary of the Public Meeting to Discuss Selected Topics for the Review of Emergency Preparedness Regulations and Guidance for Commercial Nuclear Power Plants," dated September 27, 2005	X		ML052650446
"Discussion of NREP 'Parking Lot' Items," dated August 11, 2005	X		ML052000263
Transcripts for August 31, 2005 and September 1, 2005 Portion of the Emergency Preparedness Public Meeting	X		ML052620366

Document	PDR	Web	ERR (ADAMS)
"Summary and Analysis of Comments (Received Between August 31 and October 31, 2005)," dated February 28, 2006	X		ML060450376
"Summary and Analysis of Site-Specific Comments (Received Between August 31 and October 31, 2005)," dated March 31, 2006	X		ML060860401
Transcript of Public Meeting for Follow Up Discussions of Selected Topics for the Review of Emergency Preparedness Regulations and Guidance for Commercial Nuclear Power Plants, held May 19, 2006.			ML061590186
NUREG-0696, "Functional Criteria for Emergency Response Facilities," dated February 1981	X		ML051390358
SRM to SECY-04-0236, "Southern Nuclear Operating Company's Proposal to Establish a Common Emergency Operating Facility at Its Corporate Headquarters," dated February 23, 2005	X		ML050550131
NUREG-0737, "Clarification of TMI Action Plan Requirements," Supplement 1, "Requirements for Emergency Response Capabilities," dated January 1983	X		ML051390367
Comments submitted by Nuclear Energy Institute on EP draft preliminary rule language (Letter identifier for comments: NEI1 - X)	X	X	ML081690809
Comments submitted by Union of Concerned Scientists on EP draft preliminary rule language (Letter identifier for comments: NGO1 - X)	X	X	ML081840067

Document	PDR	Web	ERR (ADAMS)
Comments submitted by PA Bureau of Radiation Protection on EP draft preliminary rule language (Letter identifier for comments: SPA1 - X)	X	X	ML081690778
EP proposed rule Regulatory Analysis and Backfit Analysis	X	X	ML091180228
EP proposed rule Environmental Assessment	X	X	ML091180223
EP Paperwork Burden Analysis	X	X	ML091180224
NRC comment responses for EP draft preliminary rule language	X	X	ML091180198
Summary of Category 3 Public Meetings to Discuss the Proposed Rule on Enhancements to Emergency Preparedness Regulations and Related Guidance Documents dated July 22, 2009	X	X	ML092020566
Summary of September 17, 2009, Meeting to Discuss the Proposed Rule on Enhancements to Emergency Preparedness Regulations and Related Guidance Documents (October 16, 2009)	X	X	ML092881256
SRM to SECY-07-0009, "Possible Reactivation of Construction and Licensing Activities for the Watts Bar Nuclear Plant Unit 2," dated July 25, 2007	X	X	ML072060688
SECY-09-0007, "Proposed Rule Related to Enhancements to Emergency Preparedness Regulations (10 CFR Part 50)," dated January 9, 2009	X	X	ML082890481
SRM to SECY-09-0007, "Proposed Rule Related to Enhancements to Emergency Preparedness Regulations (10 CFR Part 50)," dated April 16, 2009	X		ML091060206

Document	PDR	Web	ERR (ADAMS)
SRM-M091208, "Staff Requirements – Briefing on the Proposed Rule: Enhancements to Emergency Preparedness Regulations, 9:30 A.M., Tuesday, December 8, 2009, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated January 13, 2010	X		ML100130067
Information from November 15, 2010 Public Meeting to Discuss the Proposed Implementation Dates of the Emergency Preparedness Final Rule.	X	X	ML102770561

X. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Pub. L. 104-113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless using such a standard is inconsistent with applicable law or is otherwise impractical. The NRC is not aware of any voluntary consensus standard that could be used instead of the proposed Government-unique standards. The NRC will consider using a voluntary consensus standard if an appropriate standard is identified.

XI. Finding of No Significant Environmental Impact: Availability

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR part 51, that this rule is not a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required.

The NRC requested public comments on any environmental justice considerations that may be related to this rule and no comments were received. The NRC also requested the views of the States on the environmental assessment for this rule and no comments were received.

XII. Paperwork Reduction Act Statement

This final rule contains new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These requirements were approved by the Office of Management and Budget, approval number 3150-0011.

The burden to the public for these information collections is estimated to average 123 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments on any aspect of these information collections, including suggestions for reducing the burden, to the Information Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to INFOCOLLECTS.Resource@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0011), Office of Management and Budget, Washington, DC 20503.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

XIII. Regulatory Analysis: Availability

The Commission has prepared a regulatory analysis on this regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. Availability of the regulatory analysis is indicated in Section IX of this document.

XIV. Regulatory Flexibility Certification

Under the Regulatory Flexibility Act (5 U.S.C. 605(b)), the Commission certifies that this rule does not have a significant economic impact on a substantial number of small entities. This rule affects only the licensing and operation of nuclear power plants. The companies that own these plants do not fall within the scope of the definition of “small entities” set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

XV. Backfit Analysis

As required by 10 CFR 50.109, the Commission has completed a backfit analysis for the final rule. The Commission finds that the backfits contained in the final rule, when considered in the aggregate, will constitute a substantial increase in emergency preparedness and are justified in view of this increased protection of the public health and safety. Availability of the backfit analysis is indicated in Section IX of this document.

XVI. Congressional Review Act

Under the Congressional Review Act of 1996, the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of the OMB.

List of Subjects

10 CFR Part 50

Antitrust, Classified information, Criminal penalties, Fire protection, Intergovernmental relations, Nuclear power plants and reactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements.

10 CFR Part 52

Administrative practice and procedure, antitrust, backfitting, combined license, early site permit, emergency planning, fees, inspections, limited work authorization, nuclear power plants and reactors, probabilistic risk assessment, prototype, reactor siting criteria, redress of site, reporting and recordkeeping requirements, standard design, standard design certification.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553, the NRC is proposing to adopt the following amendments to 10 CFR Part 50 and Part 52.

PART 50 - DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

1. The authority citation for Part 50 continues to read as follows:

AUTHORITY: Secs. 102, 103, 104, 105, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2132, 2133, 2134, 2135, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005). Section 50.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 (42 U.S.C. 5841). Section 50.10 also issued under secs. 101, 185, 68 Stat. 955, as amended (42 U.S.C. 2131, 2235); sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332).

Sections 50.13, 50.54(dd), and 50.103 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C. 2138). Sections 50.23, 50.35, 50.55, and 50.56 also issued under sec. 185, 68 Stat. 955 (42 U.S.C. 2235). Sections 50.33a, 50.55a and Appendix Q also issued under sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.34 and 50.54 also issued under sec. 204, 88 Stat. 1245 (42 U.S.C. 5844). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97-415, 96 Stat. 2073 (42 U.S.C. 2239). Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80 and 50.81 also issued under sec. 184, 68

Stat. 954, as amended (42 U.S.C. 2234). Appendix F also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

2. Section 50.47 is amended by revising paragraphs (b)(3), (b)(10) and (d)(1) to read as follows:

§ 50.47 Emergency plans.

* * * * *

(b) * * *

(3) Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

* * * * *

(10) A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

* * * * *

(d) * * *

(1) Arrangements for requesting and effectively using offsite assistance on site have been made, arrangements to accommodate State and local staff at the licensee's Emergency Operations Facility have been made, and other organizations capable of augmenting the planned onsite response have been identified.

* * * * *

3. Section 50.54 is amended as follows:
- a. Revise paragraphs (q), (gg)(1), (gg)(1)(i), and (gg)(2);
 - b. Remove and reserve paragraphs (r), (s)(1), (s)(2)(i), and (u).

§ 50.54 Conditions of licenses.

* * * * *

(q) *Emergency Plans.*

(1) Definitions for the purpose of this section:

(i) *Change* means an action that results in modification or addition to, or removal from, the licensee's emergency plan. All such changes are subject to the provisions of this section except where the applicable regulations establish specific criteria for accomplishing a particular change.

(ii) *Emergency plan* means the document(s), prepared and maintained by the licensee, that identify and describe the licensee's methods for maintaining emergency preparedness and responding to emergencies. An emergency plan includes the plan as originally approved by the NRC and all subsequent changes made by the licensee with, and without, prior NRC review and approval under § 50.54(q).

(iii) *Emergency planning function* means a capability or resource necessary to

prepare for and respond to a radiological emergency, as set forth in the elements of section IV. of appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

(iv) *Reduction in effectiveness* means a change in an emergency plan that results in reducing the licensee's capability to perform an emergency planning function in the event of a radiological emergency.

(2) A holder of a license under this part, or a combined license under part 52 of this chapter after the Commission makes the finding under § 52.103(g) of this chapter, shall follow and maintain the effectiveness of an emergency plan that meets the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

(3) The licensee may make changes to its emergency plan without NRC approval only if the licensee performs and retains an analysis demonstrating that the changes do not reduce the effectiveness of the plan and the plan, as changed, continues to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

(4) The changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in § 50.54(q)(1)(iv) may not be implemented without prior approval by the NRC. A licensee desiring to make such a change shall submit an application for an amendment to its license. In addition to the filing requirements of §§ 50.90 and 50.91, the request must include all emergency plan pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

(5) The licensee shall retain a record of each change to the emergency plan made without prior NRC approval for a period of three years from the date of the change and shall submit, as specified in § 50.4, a report of each such change, including a summary of its analysis, within 30 days after the change is put in effect.

(6) The nuclear power reactor licensee shall retain the emergency plan and each change for which prior NRC approval was obtained pursuant to § 50.54(q)(4) as a record until the Commission terminates the license for the nuclear power reactor.

* * * * *

(r) [Reserved].

* * * * *

(s)(1) [Reserved].

* * * * *

(2)(i) [Reserved].

* * * * *

(u) [Reserved].

* * * * *

(gg)(1) Notwithstanding 10 CFR 52.103, if following the conduct of the exercise required by paragraph IV.f.2.a of appendix E to part 50 of this chapter, FEMA identifies one or more deficiencies in the state of offsite emergency preparedness, the holder of a combined license under 10 CFR part 52 may operate at up to 5 percent of rated thermal power only if the Commission finds that the state of onsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. The NRC will base this finding on its assessment of the applicant's

onsite emergency plans against the pertinent standards in § 50.47 and appendix E to this part. Review of the applicant's emergency plans will include the following standards with offsite aspects:

(i) Arrangements for requesting and effectively using offsite assistance onsite have been made, arrangements to accommodate State and local staff at the licensee's Emergency Operations Facility have been made, and other organizations capable of augmenting the planned onsite response have been identified.

* * * * *

(2) The condition in this paragraph, regarding operation at up to 5 percent power, ceases to apply 30 days after FEMA informs the NRC that the offsite deficiencies have been corrected, unless the NRC notifies the combined license holder before the expiration of the 30-day period that the Commission finds under paragraphs (s)(2) and (3) of this section that the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

* * * * *

4. In Appendix E to Part 50, Sections I, II, and IV are amended as follows:

a. In Section I, add two paragraphs to the end of the section and number each paragraph in the section;

b. In Section II, revise paragraph H;

c. In Section IV, revise the introductory text to the section, number each paragraph in the introduction, revise paragraphs A., A.2.c, A.7, B.1, B.2, C.1, D.1, D.3, E.5, E.8, E.9.c, E.9.d, F.1, F.2.a, F.2.a.(ii), F.2.a.(iii), F.2.b, F.2.c, F.2.c.(1), F.2.c.(2), F.2.c.(3), F.2.d, F.2.f, F.2.g, and F.2.h;

d. In Section IV, redesignate paragraph E.8 as E.8.a; add new paragraphs E.8.b, E.8.c, E.8.d, and E.8.e; and

e. In Section IV, add new paragraphs A.9, C.2, F.2.c.(4), F.2.c.(5), F.2.i, F.2.j, and I.

Appendix E to Part 50 – Emergency Planning and Preparedness for Production and Utilization Facilities

* * * * *

I. Introduction

1. Each applicant for a construction permit is required by § 50.34(a) to include in the preliminary safety analysis report a discussion of preliminary plans for coping with emergencies. Each applicant for an operating license is required by § 50.34(b) to include in the final safety analysis report plans for coping with emergencies. Each applicant for a combined license under subpart C of part 52 of this chapter is required by § 52.79 of this chapter to include in the application plans for coping with emergencies. Each applicant for an early site permit under subpart A of part 52 of this chapter may submit plans for coping with emergencies under § 52.17 of this chapter.

2. This appendix establishes minimum requirements for emergency plans for use in attaining an acceptable state of emergency preparedness. These plans shall be described generally in the preliminary safety analysis report for a construction permit and submitted as part of the final safety analysis report for an operating license. These plans, or major features thereof, may be submitted as part of the site safety analysis report for an early site permit.

3. The potential radiological hazards to the public associated with the operation of research and test reactors and fuel facilities licensed under 10 CFR parts 50 and 70 involve considerations different than those associated with nuclear power reactors. Consequently, the size of Emergency Planning Zones¹ (EPZs) for facilities other than power reactors and the degree to which compliance with the requirements of this section and sections II, III, IV, and V of this appendix as necessary will be determined on a case-by-case basis.²

4. Notwithstanding the above paragraphs, in the case of an operating license authorizing only fuel loading and/or low power operations up to 5 percent of rated power, no NRC or FEMA review, findings, or determinations concerning the state of offsite emergency preparedness or the adequacy of and the capability to implement State and local offsite emergency plans, as defined in this Appendix, are required prior to the issuance of such a license.

5. Each applicant for a combined license or early site permit under part 52 of this chapter whose application is docketed before **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]** may defer compliance with any change to emergency preparedness regulations under the final rule issued **[INSERT DATE OF FINAL RULE] [INSERT FR CITATION OF FINAL RULE]**. If that applicant chooses to defer compliance, it shall subsequently request to amend the combined license or early site permit to comply with those changes no later than

¹ EPZs for power reactors are discussed in NUREG-0396; EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," December 1978. The size of the EPZs for a nuclear power plant shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the EPZs also may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. Generally, the plume exposure pathway EPZ for nuclear power plants with an authorized power level greater than 250 MW thermal shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius.

² Regulatory Guide 2.6 will be used as guidance for the acceptability of research and test reactor emergency response plans.

December 31, 2013. An applicant that does not receive a combined license or early site permit before December 31, 2013, shall revise its combined license or early site permit application to comply with those changes no later than December 31, 2013. Notwithstanding any Commission finding under 10 CFR 52.103(g) regarding the combined license holder's facility, the combined license holder may not operate the facility until the NRC has approved the license amendment demonstrating compliance with the final rule.

6. The Tennessee Valley Authority Watts Bar Nuclear Plant, Unit 2, holding a construction permit under the provisions of part 50 of this chapter, shall meet the requirements of the final rule issued **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]** as applicable to operating nuclear power reactor licensees.

II. The Preliminary Safety Analysis Report

* * * * *

H. A preliminary analysis reflecting the need to include facilities, systems, and methods for identifying the degree of seriousness and potential scope of radiological consequences of emergency situations within and outside the site boundary, including capabilities for dose projection using real-time meteorological information and for dispatch of radiological monitoring teams within the EPZs; and a preliminary analysis reflecting the role of the onsite technical support center and the emergency operations facility in assessing information, recommending protective action, and disseminating information to the public.

* * * * *

IV. Content of Emergency Plans

1. The applicant's emergency plans shall contain, but not necessarily be limited to,

information needed to demonstrate compliance with the elements set forth below, i.e., organization for coping with radiological emergencies, assessment action, activation of emergency organization, notification procedures, emergency facilities and equipment, training, maintaining emergency preparedness, and recovery. In addition, the emergency response plans submitted by an applicant for a nuclear power reactor operating license under this part, or for an early site permit (as applicable) or combined license under 10 CFR part 52, shall contain information needed to demonstrate compliance with the standards described in § 50.47(b), and they will be evaluated against those standards.

2. This nuclear power reactor license applicant shall also provide an analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations, using the most recent U.S. Census Bureau data as of the date the applicant submits its application to the NRC.

3. Nuclear power reactor licensees shall use NRC approved evacuation time estimates (ETEs) and updates to the ETEs in the formulation of protective action recommendations and shall provide the ETEs and ETE updates to State and local governmental authorities for use in developing offsite protective action strategies.

4. Within 365 days of the later of the date of the availability of the most recent decennial census data from the U.S. Census Bureau or **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]**, nuclear power reactor licensees shall develop an ETE analysis using this decennial data and submit it under § 50.4 to the NRC. These licensees shall submit this ETE analysis to the NRC at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.

5. During the years between decennial censuses, nuclear power reactor licensees shall estimate EPZ permanent resident population changes once a year, but no later than 365 days

from the date of the previous estimate, using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. These licensees shall maintain these estimates so that they are available for NRC inspection during the period between decennial censuses and shall submit these estimates to the NRC with any updated ETE analysis.

6. If at any time during the decennial period, the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ to increase by 25 percent or 30 minutes, whichever is less, from the nuclear power reactor licensee's currently NRC approved or updated ETE, the licensee shall update the ETE analysis to reflect the impact of that population increase. The licensee shall submit the updated ETE analysis to the NRC under § 50.4 no later than 365 days after the licensee's determination that the criteria for updating the ETE have been met and at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.

7. After an applicant for a combined license under part 52 of this chapter receives its license, the licensee shall conduct at least one review of any changes in the population of its EPZ at least 365 days prior to its scheduled fuel load. The licensee shall estimate EPZ permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. If the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ, to increase by 25 percent or 30 minutes, whichever is less, from the licensee's currently approved ETE, the licensee shall update the ETE analysis to reflect the impact of that population increase. The licensee shall submit the updated ETE analysis to the

NRC for review under § 50.4 of this chapter no later than 365 days before the licensee's scheduled fuel load.

A. Organization

The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency. Specifically, the following shall be included:

* * * * *

2. A description of the onsite emergency response organization (ERO) with a detailed discussion of:

* * * * *

c. Authorities, responsibilities, and duties of an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures.

* * * * *

7. By **[INSERT DATE 30 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, identification of, and a description of the assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site. For purposes of this Appendix, "hostile action" is defined as an act directed 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. This includes

attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force.

* * * * *

9. By **[INSERT DATE 365 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, for nuclear power reactor licensees, a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.

B. Assessment Actions

1. The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. By **[INSERT DATE 180 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, for nuclear power reactor licensees, these action levels must include hostile action that may adversely affect the nuclear power plant. The initial emergency action levels shall be discussed and agreed on by the applicant or licensee and state and local governmental authorities, and approved by the NRC. Thereafter, emergency action levels shall be reviewed with the State and local governmental authorities on an annual basis.

2. A licensee desiring to change its entire emergency action level scheme shall submit

an application for an amendment to its license and receive NRC approval before implementing the change. Licensees shall follow the change process in § 50.54(q) for all other emergency action level changes.

* * * * *

C. Activation of Emergency Organization

1. The entire spectrum of emergency conditions that involve the alerting or activating of progressively larger segments of the total emergency organization shall be described. The communication steps to be taken to alert or activate emergency personnel under each class of emergency shall be described. Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies. The emergency classes defined shall include: (1) notification of unusual events, (2) alert, (3) site area emergency, and (4) general emergency. These classes are further discussed in NUREG-0654/FEMA-REP-1.

2. By **[INSERT DATE 180 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, nuclear power reactor licensees shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level. Licensees shall not construe these criteria as a grace period to attempt to restore plant conditions to avoid declaring an emergency action due

to an emergency action level that has been exceeded. Licensees shall not construe these criteria as preventing implementation of response actions deemed by the licensee to be necessary to protect public health and safety provided that any delay in declaration does not deny the State and local authorities the opportunity to implement measures necessary to protect the public health and safety.

D. Notification Procedures

1. Administrative and physical means for notifying local, State, and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary, shall be described. This description shall include identification of the appropriate officials, by title and agency, of the State and local government agencies within the EPZs.

* * * * *

3. A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency. The licensee shall demonstrate that the appropriate governmental authorities have the capability to make a public alerting and notification decision promptly on being informed by the licensee of an emergency condition. Prior to initial operation greater than 5 percent of rated thermal power of the first reactor at a site, each nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ. The design objective of the prompt public alert and notification system shall be to have the capability to essentially complete the initial alerting and initiate notification of the public within the plume exposure pathway EPZ within about

15 minutes. The use of this alerting and notification capability will range from immediate alerting and notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the appropriate governmental authorities to make a judgment whether or not to activate the public alert and notification system. The alerting and notification capability shall additionally include administrative and physical means for a backup method of public alerting and notification capable of being used in the event the primary method of alerting and notification is unavailable during an emergency to alert or notify all or portions of the plume exposure pathway EPZ population. The backup method shall have the capability to alert and notify the public within the plume exposure pathway EPZ, but does not need to meet the 15-minute design objective for the primary prompt public alert and notification system. When there is a decision to activate the alert and notification system, the appropriate governmental authorities will determine whether to activate the entire alert and notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public alert and notification system shall remain with the appropriate governmental authorities.

4. If FEMA has approved a nuclear power reactor site's alert and notification design report, including the backup alert and notification capability, as of **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]**, then the backup alert and notification capability requirements in Section IV.D.3 must be implemented by **[INSERT DATE 12 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**. If the alert and notification design report does not include a backup alert and notification capability or needs revision to ensure adequate backup alert and notification capability, then a revision of the alert and notification design report must be submitted to FEMA for review by **[INSERT DATE 18 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, and the FEMA-approved backup alert and notification means must be implemented within 365 days after FEMA approval. However, the total time period to implement

a FEMA-approved backup alert and notification means must not exceed **[INSERT DATE 3 YEARS AND 6 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**.

E. Emergency Facilities and Equipment

* * * * *

5. Arrangements for medical service providers qualified to handle radiological emergencies onsite;

* * * * *

8.a. (i) A licensee onsite technical support center and an emergency operations facility from which effective direction can be given and effective control can be exercised during an emergency; (ii) For nuclear power reactor licensees, a licensee onsite operational support center;

b. For a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, either a facility located between 10 miles and 25 miles of the nuclear power reactor site(s), or a primary facility located less than 10 miles from the nuclear power reactor site(s) and a backup facility located between 10 miles and 25 miles of the nuclear power reactor site(s). An emergency operations facility may serve more than one nuclear power reactor site. An emergency operations facility may be located more than 25 miles from a nuclear power reactor site as long as provisions are made for locating NRC and offsite responders closer to the nuclear power reactor site so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site. Provisions for locating NRC and offsite responders closer to a nuclear power reactor site that is more than 25 miles from the emergency operations facility shall include the following: 1) space for members of an NRC site team and Federal, State, and local

responders; 2) additional space for conducting briefings with emergency response personnel; 3) communication with other licensee and offsite emergency response facilities; 4) access to plant data and radiological information; and 5) access to copying equipment and office supplies;

c. By **[INSERT DATE 180 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, for a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, a facility having the following capabilities: 1) the capability for obtaining and displaying plant data and radiological information for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves; 2) the capability to analyze plant technical information and provide technical briefings on event conditions and prognosis to licensee and offsite response organizations for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves; and 3) the capability to support response to events occurring simultaneously at more than one nuclear power reactor site if the emergency operations facility serves more than one site; and

d. For nuclear power reactor licensees, an alternative facility (or facilities) that would be accessible even if the site is under threat of or experiencing hostile action, to function as a staging area for augmentation of emergency response staff and collectively having the following characteristics: the capability for communication with the emergency operations facility, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action. The requirements in this paragraph 8.d must be implemented no later than **[INSERT DATE 36 MONTHS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, with the exception of the capability for staging emergency response organization personnel at the alternative facility (or facilities) and the capability for communications with the emergency operations facility, control room, and plant security, which must be implemented no later than **[INSERT DATE 180 DAYS**

AFTER THE EFFECTIVE DATE OF THE FINAL RULE].

e. A licensee with an approved emergency operations facility on **[INSERT THE EFFECTIVE DATE OF THE FINAL RULE]** shall not be subject to the requirements of paragraph 8.b of this section;

9. * * *

c. Provision for communications among the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility; and among the nuclear facility, the principal State and local emergency operations centers, and the field assessment teams. Such communications systems shall be tested annually.

d. Provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility. Such communications shall be tested monthly.

F. Training.

1. The program to provide for: (a) The training of employees and exercising, by periodic drills, of emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) The participation in the training and drills by other persons whose assistance may be needed in the event of a radiological emergency shall be described. This shall include a description of specialized initial training and periodic retraining programs to be provided to each of the following categories of emergency personnel:

* * * * *

2. The plan shall describe provisions for the conduct of emergency preparedness exercises as follows: Exercises shall test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public alert and notification system, and ensure that emergency organization personnel are familiar with their duties.³

a. An initial full participation⁴ exercise which tests as much of the licensee, State, and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted for each site at which a power reactor is located. Nuclear power reactor licensees shall submit exercise scenarios under § 50.4 at least 60 days before use in a biennial exercise.

* * * * *

(ii) For a combined license issued under part 52 of this chapter, this exercise must be conducted within two years of the scheduled date for initial loading of fuel. If the first full participation exercise is conducted more than one year before the scheduled date for initial loading of fuel, an exercise which tests the licensee's onsite emergency plans must be conducted within one year before the scheduled date for initial loading of fuel. This exercise need not have State or local government participation. If FEMA identifies one or more deficiencies in the state of offsite emergency preparedness as the result of the first full participation exercise, or if the Commission finds that the state of emergency preparedness

³ Use of site specific simulators or computers is acceptable for any exercise.

⁴ Full participation when used in conjunction with emergency preparedness exercises for a particular site means appropriate offsite local and State authorities and licensee personnel physically and actively take part in testing their integrated capability to adequately assess and respond to an accident at a commercial nuclear power plant. "Full participation" includes testing major observable portions of the onsite and offsite emergency plans and mobilization of state, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario.

does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, the provisions of § 50.54(gg) apply.

(iii) For a combined license issued under part 52 of this chapter, if the applicant currently has an operating reactor at the site, an exercise, either full or partial participation⁵, shall be conducted for each subsequent reactor constructed on the site. This exercise may be incorporated in the exercise requirements of Sections IV.F.2.b. and c. in this appendix. If FEMA identifies one or more deficiencies in the state of offsite emergency preparedness as the result of this exercise for the new reactor, or if the Commission finds that the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, the provisions of § 50.54(gg) apply.

b. Each licensee at each site shall conduct a subsequent exercise of its onsite emergency plan every 2 years. Nuclear power reactor licensees shall submit exercise scenarios under § 50.4 at least 60 days before use in an exercise. The exercise may be included in the full participation biennial exercise required by paragraph 2.c. of this section. In addition, the licensee shall take actions necessary to ensure that adequate emergency response capabilities are maintained during the interval between biennial exercises by conducting drills, including at least one drill involving a combination of some of the principal functional areas of the licensee's onsite emergency response capabilities. The principal functional areas of emergency response include activities such as management and coordination of emergency response, accident assessment, event classification, notification of offsite authorities, assessment of the onsite and offsite impact of radiological releases,

⁵ Partial participation when used in conjunction with emergency preparedness exercises for a particular site means appropriate offsite authorities shall actively take part in the exercise sufficient to test direction and control functions; i.e., (a) protective action decision making related to emergency action levels, and (b) communication capabilities among affected State and local authorities and the licensee.

protective action recommendation development, protective action decision making, plant system repair and mitigative action implementation. During these drills, activation of all of the licensee's emergency response facilities (Technical Support Center (TSC), Operations Support Center (OSC), and the Emergency Operations Facility (EOF)) would not be necessary, licensees would have the opportunity to consider accident management strategies, supervised instruction would be permitted, operating staff in all participating facilities would have the opportunity to resolve problems (success paths) rather than have controllers intervene, and the drills may focus on the onsite exercise training objectives.

c. Offsite plans for each site shall be exercised biennially with full participation by each offsite authority having a role under the radiological response plan. Where the offsite authority has a role under a radiological response plan for more than one site, it shall fully participate in one exercise every two years and shall, at least, partially participate in other offsite plan exercises in this period. If two different licensees each have licensed facilities located either on the same site or on adjacent, contiguous sites, and share most of the elements defining co-located licensees,⁶ then each licensee shall:

- (1) Conduct an exercise biennially of its onsite emergency plan;
- (2) Participate quadrennially in an offsite biennial full or partial participation exercise;

⁶ Co-located licensees are two different licensees whose licensed facilities are located either on the same site or on adjacent, contiguous sites, and that share most of the following emergency planning and siting elements:

- a. Plume exposure and ingestion emergency planning zones;
- b. Offsite governmental authorities;
- c. Offsite emergency response organizations;
- d. Public notification system; and/or
- e. Emergency facilities.

(3) Conduct emergency preparedness activities and interactions in the years between its participation in the offsite full or partial participation exercise with offsite authorities, to test and maintain interface among the affected State and local authorities and the licensee. Co-located licensees shall also participate in emergency preparedness activities and interaction with offsite authorities for the period between exercises;

(4) Conduct a hostile action exercise of its onsite emergency plan in each exercise cycle; and

(5) Participate in an offsite biennial full or partial participation hostile action exercise in alternating exercise cycles.

* * * * *

d. Each State with responsibility for nuclear power reactor emergency preparedness should fully participate in the ingestion pathway portion of exercises at least once every exercise cycle. In States with more than one nuclear power reactor plume exposure pathway EPZ, the State should rotate this participation from site to site. Each State with responsibility for nuclear power reactor emergency preparedness should fully participate in a hostile action exercise at least once every cycle and should fully participate in one hostile action exercise by December 31, 2015. States with more than one nuclear power reactor plume exposure pathway EPZ should rotate this participation from site to site.

* * * * *

f. Remedial exercises will be required if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot 1) find

reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency or 2) determine that the Emergency Response Organization (ERO) has maintained key skills specific to emergency response. The extent of State and local participation in remedial exercises must be sufficient to show that appropriate corrective measures have been taken regarding the elements of the plan not properly tested in the previous exercises.

g. All exercises, drills, and training that provide performance opportunities to develop, maintain, or demonstrate key skills must provide for formal critiques in order to identify weak or deficient areas that need correction. Any weaknesses or deficiencies that are identified in a critique of exercises, drills, or training must be corrected.

h. The participation of State and local governments in an emergency exercise is not required to the extent that the applicant has identified those governments as refusing to participate further in emergency planning activities, pursuant to § 50.47(c)(1). In such cases, an exercise shall be held with the applicant or licensee and such governmental entities as elect to participate in the emergency planning process.

i. Licensees shall use drill and exercise scenarios that provide reasonable assurance that anticipatory responses will not result from preconditioning of participants. Such scenarios for nuclear power reactor licensees must include a wide spectrum of radiological releases and events, including hostile action. Exercise and drill scenarios as appropriate must emphasize coordination among onsite and offsite response organizations.

j. The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in

paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each eight year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a.

* * * * *

I. Onsite Protective Actions During Hostile Action

By **[INSERT DATE 180 DAYS AFTER THE EFFECTIVE DATE OF THE FINAL RULE]**, for nuclear power reactor licensees, a range of protective actions to protect onsite personnel during hostile action must be developed to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the licensee's emergency plan.

**PART 52 - LICENSES, CERTIFICATIONS, AND APPROVALS FOR NUCLEAR
POWER PLANTS**

5. The authority citation for Part 52 continues to read as follows:

AUTHORITY: Secs. 103, 104, 161, 182, 183, 186, 189, 68 Stat. 936, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2133, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, 202, 206, 88 Stat. 1242, as amended, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

6. In Section 52.79, paragraph (a)(17) is revised to read as follows:

§ 52.79 Contents of applications; technical information in final safety analysis report.

(a) * * *

(17) The information with respect to compliance with technically relevant positions of the Three Mile Island requirements in § 50.34(f) of this chapter, with the exception of §§ 50.34(f)(1)(xii), (f)(2)(ix), (f)(2)(xxv), and (f)(3)(v);

* * * * *

Dated at Rockville, Maryland, this ____ day of _____, 2011.

For the Nuclear Regulatory Commission.

Annette Vietti-Cook,
Secretary of the Commission.

6. In Section 52.79, paragraph (a)(17) is revised to read as follows:

§ 52.79 Contents of applications; technical information in final safety analysis report.

(a) * * *

(17) The information with respect to compliance with technically relevant positions of the Three Mile Island requirements in § 50.34(f) of this chapter, with the exception of §§ 50.34(f)(1)(xii), (f)(2)(ix), (f)(2)(xxv), and (f)(3)(v);

* * * * *

Dated at Rockville, Maryland, this ____ day of _____, 2011.

For the Nuclear Regulatory Commission.

Annette Vietti-Cook,
Secretary of the Commission.

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OFFICE	NSIR: D	OE: D	ADM/DAS/RDB	CFO: D*	OGC
NAME	JWiggins	RZimmerman	CBlady	JDyer (RMitchell for)	BJones (JBiggins for)
DATE	09/22/10	09/23/10	09/21/10	10/07/10	03/21/11
OFFICE	NRR: D	EDO	SECY		
NAME	ELeeds	RBorchardt	AViettiCook		
DATE	03/28/11				

OFFICIAL RECORD

Regulatory Analysis and Backfit Analysis

Final Rulemaking: Enhancements to Emergency Preparedness Regulations (10 CFR Parts 50 and 52)

U.S. Nuclear Regulatory Commission
Office of Nuclear Security and Incident Response

September 1, 2010



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Executive Summary

The Nuclear Regulatory Commission (NRC) is enhancing the current emergency preparedness (EP) regulations pertaining to nuclear reactors. The final rulemaking: (1) codifies EP requirements imposed by Commission order after the terrorist attacks of September 11, 2001, as modified based upon experience and insights gained by the NRC during implementation, (2) codifies certain EP and response enhancements discussed within NRC Bulletin 2005-02, and (3) adds several new requirements that resulted from NRC staff review of EP regulations and guidance. The rulemaking implements changes addressing 11 aspects of EP. All of these changes affect power reactor licensees, and one affects non-power reactors.

The analysis presented in this document examines the benefits and costs of the new EP requirements relative to the baseline of current regulations, relevant orders, and voluntary actions on the part of industry. As a sensitivity analysis, the document also examines the benefits and costs of the final rulemaking relative to the baseline of current regulations only (excluding the Order, NRC Bulletin 2005-02, and industry voluntary actions). The key findings of the analysis are as follows:

- **Total Cost to Industry (including Backfits).** The final rule is expected to result in a total one-time cost across all nuclear power plant sites and non-power reactors of approximately \$32.0 million, followed by total annual costs on the order of \$2.6 million. The total present value of these costs is \$63.3 million (using a 7-percent discount rate) and \$80.4 million (using a 3-percent discount rate) over the next 30 years. Almost all of the estimated costs to industry qualify as backfits (see Section 4.3).
- **Average Cost per Site for Power Reactors.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$485,000 followed by annual costs of approximately \$40,000.
- **Average Cost per Site for Non-Power Reactors.** The average non-power reactor will incur a one-time cost of approximately \$14,000. The final rule will not impose any annual costs on non-power reactors.
- **Value of Benefits Not Reflected Quantitatively.** With the exception of some direct monetary savings to industry, the cost figures shown above do not reflect the value of the benefits of the final rule. These benefits are evaluated qualitatively in Section 4.1.
- **Costs to NRC.** The rule is expected to result in a one-time cost to NRC of approximately \$598,000, followed by annual costs of approximately \$192,000. The total present value of these NRC costs is \$2.9 million (using a 7-percent discount rate) and \$4.2 million (using a 3-percent discount rate).
- **Costs to Other Government Agencies.** The rule is expected to result in a one-time cost to other government agencies of approximately \$3.5 million, followed by annual costs of approximately \$316,000. The total present value of these other government

costs is \$7.3 million (using a 7-percent discount rate) and \$9.4 million (using a 3-percent discount rate).

- Decision Rationale. The rule is cost-justified because the regulatory initiatives for increased and consistent EP measures enable emergency personnel to respond earlier and more effectively to emergency events at nuclear power plants, increasing the public health and safety.

The final rule also will apply to any new reactors brought online after promulgation of the final rule, including Watts Bar Unit 2 as well as any units that would be built under the new reactor applications that NRC has received to date. Because EP program costs are primarily a site-based function, rather than a reactor-based function, the regulatory analysis and backfit analysis reflect costs associated with Watts Bar Unit 2 as well as those units covered by the new applications that (like Watts Bar Unit 2) would co-locate new reactors with currently operating reactors. For the new applications that would place new reactors at sites that are not co-located with operating reactors, this analysis estimates that one-time and annual impacts will be less than or equal to the corresponding impacts for operating reactors (i.e., because the development of EP plans for the new sites will not require that existing plans be analyzed and reworked). However, the quantitative results do not reflect any additional incremental cost for the non-co-located reactors due to the uncertainty associated with when and if these facilities actually will be licensed and operated.

Pre-Order Baseline Sensitivity Analysis. The regulatory analysis contains a sensitivity analysis that, like the main analysis, estimates the incremental costs of the final rule, but it assumes an alternative baseline consisting of only the regulations that were in effect *prior to* (1) issuance of NRC Order EA-02-26 on February 25, 2002, and (2) voluntary industry actions initiated in response to NRC Bulletin 2005-02. Relative to the pre-order baseline, the final rule is expected to result in a total one-time cost across all nuclear power plant sites of approximately \$59.0 million, followed by total annual costs on the order of \$2.6 million. The total present value of these costs is \$90.3 million (using a 7-percent discount rate) and \$107.4 million (using a 3-percent discount rate) over the next 30 years (see Section 4.2).

Abbreviations

ANS	Alert and Notification System
CFR	Code of Federal Regulations
CRGR	Committee to Review Generic Requirements
DHS	Department of Homeland Security
EAL	Emergency Action Level
EOF	Emergency Operations Facility
EP	Emergency Preparedness
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
ETE	Evacuation Time Estimate
FEMA	Federal Emergency Management Agency
ICM	Interim Compensatory Measure
JTA	Job Task Analysis
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ORO	Offsite Response Organization
SRM	Staff Requirements Memorandum
RIS	Regulatory Issue Summary

1. Introduction

This document presents a regulatory analysis of enhancements to the emergency preparedness (EP) requirements as set forth by the U.S. Nuclear Regulatory Commission (NRC) in Title 10 of the Code of Federal Regulations (10 CFR), Part 50, "Domestic Licensing of Production and Utilization Facilities" and Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." The final rule revises provisions contained in Sections 50.47, 50.54, and 52.79, and Appendix E to Part 50. This introduction is divided into three sections. Section 1.1 states the problem and the reasons for the rulemaking, Section 1.2 provides background information, and Section 1.3 discusses regulatory objectives related to adoption of the final rule.

1.1 Statement of the Problem and Reasons for the Rulemaking

Following the terrorist events of September 11, 2001, the NRC staff evaluated the EP planning basis given the resulting threat environment and concluded that it remains valid. However, the NRC staff recognized that security events differ from accidental events and that the EP regulations and guidance could be enhanced in this and other respects. In addition, NRC staff reviewed existing EP regulations and guidance and identified clarifications and enhancements to the regulations that recognize the benefits of advances in communication technologies and lessons learned through EP program implementation.

While licensees have implemented significant enhancements to their EP programs in response to the February 25, 2002, Commission Order, NRC Bulletin 2005-02, and various NRC generic communications, the current regulations do not encompass these elements. EP regulations and guidance could be enhanced to better reflect the security elements implemented in response to the attacks of September 11, 2001, advances in technology, and lessons learned. Therefore, the NRC is revising its regulations to codify the EP enhancements.

1.2 Background

1.2.1 Current Regulations Governing EP (10 CFR Part 50)

Part 50 codifies a set of EP planning standards in § 50.47(b) with supporting requirements in Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50.

1.2.2 Commission Orders

The Commission imposed several security orders on all operating power reactor licensees following September 11, 2001. On February 25, 2002, the NRC issued Order EA-02-26, "Interim Safeguards and Security Compensatory Measures (ICMs)," to all license holders for the operating commercial power reactors in the United States. Among other things, the Order required licensees to implement ICMs for the present threat level and take actions such as:

- Review the security and emergency plans to maximize compatibility,

- Assess the adequacy of staffing plans at emergency response facilities, and for licensees with an onsite emergency operations facility (EOF), identify alternative facilities capable of supporting emergency response,
- Develop plans, procedures and training regarding notification (including responding employees), activation, and coordination between the site and offsite response organizations (OROs),
- Conduct a review to ensure that responders are not assigned collateral duties that would prevent effective emergency response, and
- Implement site-specific Emergency Action Levels (EALs) to provide an anticipatory response to a credible threat.

1.2.3 NRC Bulletin 2005-02

The NRC issued Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," to obtain information regarding changes nuclear power reactor licensees made or were planning to make regarding security-based EP program capabilities and to evaluate how consistently such changes had been implemented. Specifically, the Bulletin focused on gathering information from licensees on five EP topic areas: security-based emergency classification levels and EALs; NRC notifications; onsite protective measures; emergency response organization (ERO) augmentation; and drill and exercise programs.

Nuclear plant licensees all responded that they had implemented, or planned to implement, the types of enhancements outlined in NRC Bulletin 2005-02. Further, the Nuclear Energy Institute (NEI) developed a white paper titled "Enhancements to Emergency Preparedness Programs for Hostile Action," issued May 2005 (revised November 18, 2005). The NRC staff endorsed this guidance in Regulatory Issue Summary (RIS) 2006-12, dated July 19, 2006, as an acceptable implementation methodology for the program enhancements discussed in NRC Bulletin 2005-02. However, these enhancements are voluntary. The NRC currently does not regard these voluntary actions in the licensing basis of the plants.

1.2.4 NRC Guidance Documents

NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (herein referred to as NUREG-0654) is the joint NRC and Federal Emergency Management Agency (FEMA) guidance that provides a basis for NRC licensees and State and local governments to develop radiological emergency plans and improve EP. It also is used by reviewers to determine the adequacy of State, local, and nuclear power plant licensee emergency plans and preparedness. NUREG-0654 provides guidance for each of the planning standards found in 10 CFR 50.47(b). Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 2, issued October 1981, endorsed NUREG-0654/FEMA-REP-1, Revision 1. Regulatory Guide 1.101 provides guidance to licensees and applicants on methods acceptable to the NRC staff for complying with the standards in 10 CFR 50.47 that must be met in onsite and offsite emergency response plans. Regulatory guides are not substitutes for regulations, and compliance with them is not required. Licensees and applicants may propose methods and solutions different from those specified in the guides if they provide a basis for the findings required for the issuance of a license by the Commission.

1.3 Regulatory Objectives

The NRC's objectives for the current rulemaking are to (1) codify EP requirements imposed by Commission order after the terrorist attacks of September 11, 2001, as modified based upon experience and insights gained by the NRC during implementation, (2) codify certain EP and response enhancements discussed within NRC Bulletin 2005-02, and (3) add several new requirements that resulted from NRC staff review of EP regulations and guidance.

2. Identification and Preliminary Analysis of Alternative Approaches

Prior to the rulemaking, the NRC staff conducted an extensive review of EP regulations and guidance and developed numerous recommendations. The NRC staff presented the analysis and recommendations to the Commission in SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance," dated September 20, 2006. SECY-06-0200 also prioritized the NRC staff's recommendations using specified criteria. The Commission, in a Staff Requirements Memorandum (SRM) dated January 8, 2007, approved a rulemaking effort for the various EP initiatives contained in SECY-06-0200. In SECY-07-0182, "Semi-annual Update on the Status of Emergency Preparedness Activities," the NRC staff committed to first conduct rulemaking on the issues identified as high-priority in SECY-06-0200.

Based on the preliminary analysis described above, the rulemaking will revise 10 CFR 50.47, 50.54, and 52.79, and Appendix E to Part 50 to incorporate a total of 11 regulatory initiatives:

1. Protection of onsite personnel
2. EALs for hostile action
3. Challenging drills and exercises
4. Evacuation time estimate (ETE) updating
5. Licensee coordination with OROs
6. On-shift staffing analysis
7. ERO augmentation and alternative facilities
8. Amended emergency plan change process
9. Emergency declaration timeliness
10. EOF – performance-based approach
11. Backup means for alert and notification systems (ANS)

The rulemaking will allow the NRC to achieve enhancements to EP at nuclear power plants as well as greater regulatory consistency across licensees.

The alternative to these initiatives is the "no-action alternative." Under the no-action alternative, NRC would not amend the current regulations regarding EP at nuclear power plant sites. Licensees would continue to comply with the Commission's Order and voluntary commitments from the generic communications. This option would avoid certain costs that the final rule will impose. However, taking no action would not enhance EP based on recent experience, would not enhance regulatory efficiency, and, moreover, would present a problem for establishing appropriate EP measures for new reactors that did not receive the Commission Order or generic communications.

3. Evaluation of Benefits and Costs

This section examines the benefits and costs expected to result from this rulemaking, and are presented in two subsections. Section 3.1 identifies attributes that are expected to be affected by the rulemaking. Section 3.2 describes how benefits and costs have been analyzed.

3.1 Identification of Affected Attributes

This section identifies the factors within the public and private sectors that the regulatory alternatives (discussed in Section 2) are expected to affect. These factors are classified as “attributes” using the list of potential attributes provided by NRC in Chapter 5 of its *Regulatory Analysis Technical Evaluation Handbook*.¹ Affected attributes include the following:

- Public Health (Accident) – The final rule will reduce the risk that public health will be affected by radiological releases resulting from an emergency.
- Occupational Health (Accident) – The final rule will reduce the risk that occupational health will be affected by radiological releases resulting from emergencies and by some hostile action.
- Industry Implementation – The final rule will require licensees to make facility modifications and to revise their emergency plans and procedures, among other implementation activities.
- Industry Operation – The final rule will require licensees to conduct additional EP activities beyond those currently being conducted. For example, licensees must track compliance over time with NRC’s challenging drill and exercise requirements.
- NRC Implementation – Under the final rule, NRC must develop or revise guidance and inspection procedures as a result of the new requirements.
- NRC Operation – The final rule will require the NRC to review biennial exercise scenarios and updated ETEs for each site on an ongoing basis.
- Other government – The final rule will result in one-time and annual costs to other government agencies. FEMA and State and local government agencies coordinate with NRC and licensees on EP activities. The final rule may require these other government agencies to review and revise guidance and procedures, and to conduct trainings.
- Regulatory Efficiency – The final rule will result in enhanced regulatory efficiency through regulatory and compliance improvements.

¹ *Regulatory Analysis Technical Evaluation Handbook, Final Report*, NUREG/BR-0184, Office of Nuclear Regulatory Research, January 1997.

- Off-Site Property – The final rule will reduce the risk that off-site property will be affected by radiological releases resulting from emergencies.
- On-Site Property – The final rule will reduce the risk that on-site property will be affected by radiological releases resulting from emergencies and some hostile action.

Attributes that are *not* expected to be affected under any of the rulemaking options include the following: safeguards and security considerations; occupational health (routine); public health (routine); environmental considerations; general public; improvements in knowledge; and antitrust considerations.

3.2 Analytical Methodology

This section describes the process used to evaluate benefits and costs associated with the various regulatory options. The benefits of the rule include any desirable changes in affected attributes (e.g., monetary savings, improved safety resulting from new physical protection requirements) while the costs include any undesirable changes in affected attributes (e.g., monetary costs, increased exposures).

The analysis evaluates several attributes on a quantitative basis. (These include industry implementation, industry operation, NRC implementation, NRC operation, other government.) Quantitative analysis requires a baseline characterization of the universe, including factors such as the number of licensees affected, the nature of the activities currently being conducted, and the types of new or modified systems and procedures that licensees will implement, or will no longer implement, as a result of the rule. In fact, however, licensees may respond to the rule in different ways depending on their own licensee-specific characteristics, such as (1) the physical characteristics of their sites, (2) the current contents of their emergency plans, (3) the organizational and managerial characteristics of their operations, (4) their approaches toward meeting new performance-based criteria, and (5) the characteristics of the local communities and their relationship with the local communities. Sections 3.2.1–3.2.4 describe the most significant analytical data and assumptions used in the quantitative analysis of these attributes. Additional details regarding the calculations used in the analysis are presented in an appendix to the analysis.

The analysis relies on a primarily qualitative (rather than quantitative) evaluation of several of the affected attributes (public health, occupational health, offsite property, and onsite property) due to the difficulty in quantifying the impact of the current rulemaking.² These attributes are affected by the regulatory options through the associated increases in effectiveness of emergency plans and emergency response activities. Quantification of any of these attributes would require estimation of factors such as (1) the frequency of various types of emergencies and emergency events, (2) the radiological consequences of such emergencies, and (3) pre-rule and post-rule impacts associated with such emergencies and hostile action.

² The regulatory efficiency attribute also is evaluated qualitatively, by definition. See NRC's *Regulatory Analysis Technical Evaluation Handbook*, Section 5.5.14.

3.2.1 Baselines for Analysis

This regulatory analysis measures the incremental impacts of the final rule relative to a “baseline,” which reflects anticipated behavior in the event that the final regulation is not imposed. The primary baseline used in this analysis assumes full licensee compliance with existing NRC requirements, including current regulations, relevant orders, and voluntary industry actions initiated in response to NRC Bulletin 2005-02. Section 4.1 presents the estimated incremental costs and savings of the final rule relative to this baseline. Unless otherwise noted, the estimated costs and savings presented in this document reflect this baseline and are referred to as the “main analysis.”

The NRC staff also has prepared a sensitivity analysis as part of this regulatory analysis, in accordance with the agency’s regulatory analysis guidelines. The sensitivity analysis, like the main analysis, estimates the incremental savings and costs of the final rule, but it assumes an alternative baseline consisting of only the regulations that were in effect before (1) issuance of NRC Order EA-02-26 on February 25, 2002, and (2) voluntary industry actions initiated in response to NRC Bulletin 2005-02. This analysis is referred to as the “pre-order baseline analysis,” and its results appear in Section 4.2.

3.2.2 EP Programs and Program Characteristics

The analysis models 65 sites administering a total of 104 operating power reactors. It assumes that incremental costs and savings will accrue to sites independent of the number of reactor facilities located at each site. It also assumes that the manner in which operating reactors comply with current EP requirements is substantially similar (except as indicated in Appendix A) and that all operating nuclear power reactors are in full compliance with the applicable baseline requirements. As a result, the analysis applies the same average cost per activity to each site, even though in reality some sites will incur higher or lower costs. Each operating licensee is assumed to apply for and receive a single 20-year license extension. Based on the extended license expiration dates, the analysis calculates the average remaining operating life across all reactors as 30 years. Therefore, costs and savings are estimated for the 65 reactor sites over a 30-year period, with each year’s costs or savings discounted back at a 7-percent and 3-percent discount rate, in accordance with NUREG/BR-0058, Rev. 4, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission.” (See Section 4.1 for these results.)

The final rule will also apply to any new reactors brought online after promulgation of the final rule. Watts Bar Unit 2 is assumed to be one such reactor. In addition, NRC has received applications to build other nuclear power reactors. For Watts Bar Unit 2 and the new applications that (like Watts Bar Unit 2) would co-locate new reactors with currently operating reactors, this analysis assumes that there will be no significant additional incremental cost or saving incurred (because EP program costs are primarily a site-based function, rather than a reactor-based function). For the new applications that would place new reactors at sites that are not co-located with operating reactors, this analysis estimates that one-time and annual impacts will be less than or equal to the corresponding impacts for operating reactors (i.e., because the development of EP plans for the new sites will not require that existing plans be analyzed and reworked). Nevertheless, Section 4 does not reflect any additional incremental cost for the non-co-located reactors due to the uncertainty associated with when and if these facilities actually will be licensed and operated.

The final rule also makes a conforming change to Part 52 that affects combined license applicants. The conforming change points applicants to the EP requirements in Part 50, Appendix E, instead of the EP requirements in Section 50.34(f). This change will have a cost impact only for combined license applications that have been or will have been submitted prior to promulgation of this final rule. Specifically, applications may cite Section 50.34(f) as the regulatory basis for some of the EP features disclosed in the application. Under the final rule, these applications instead will need to cite Part 50, Appendix E as the regulatory basis. NRC estimates that the cost impact associated with this revision will be insignificant relative to the overall cost of the final rule.

In addition, one of the final rule's regulatory initiatives will apply to non-power reactor licensees.³ As a result, the analysis also models the cost incurred by the 32 operating non-power reactors.

3.2.3 Incremental Requirements in the Final Rule

The NRC evaluated each of the 11 regulatory initiatives contained in the final rule relative to the applicable baselines described in Section 3.2.1. Based on this analysis, the NRC developed equations to estimate costs and savings using available data, augmented by assumptions when necessary. Appendix A documents this analysis, including the specific equations used to quantify costs and savings. The purpose of Appendix A is to show the per site cost assumptions used for this analysis.

3.2.4 Other Data and Assumptions

Information on operating non-power reactors, power reactors, and shutdown dates has been taken from NUREG-1350, Vol. 21, *NRC Information Digest, 2009-2010 Edition*. To the extent practical, quantitative information (e.g., costs and savings) and qualitative information (e.g., the nature and magnitude of impacts) on attributes affected by the rule have been developed by NRC staff. The analysis also considered input provided by stakeholders at public meetings.

The analysis assumes that the final rule becomes effective in August 2011, and that any one-time implementation costs are incurred during the first year. Ongoing (annual) costs of operation are assumed to begin in 2012, and are modeled on an annual cost basis. Costs and savings are expressed in 2010 dollars.

³ Amended Emergency Plan Change Process applies to both nuclear power reactor and non-power reactor licensees. See Section 4.1.8 and Appendix A.8.b.

4. Results

This section presents the analytical results which are organized into five separate sections:

- Section 4.1 presents results on the benefits and costs of the rule as a whole under the main analysis, as well as disaggregated results for each of the 11 regulatory initiatives that comprise the rule.
- Section 4.2 presents the results of the analysis under the pre-order baseline.
- Section 4.3 considers the findings relative to NRC's backfit rule.
- Section 4.4 addresses the applicability of a safety goal evaluation to the current rulemaking.
- Section 4.5 describes the information required for review by the Committee to Review Generic Requirements (CRGR).

4.1 Benefits and Costs Under the Main Analysis

This section summarizes the benefits and costs estimated for each regulatory initiative and for the rule as a whole. To the extent that the affected attributes could be analyzed quantitatively, the net effect of each option has been calculated and is presented below. However, some benefits and costs could be evaluated only on a qualitative basis.

Exhibits 4-1 and 4-2 summarize the results for the final rule as a whole, and Exhibit 4-3 shows the incremental costs for each of the 11 regulatory initiatives contained in the final rule. Relative to the no-action alternative (Option 1), the rule as a whole (Option 2) will result in a net quantitative cost estimated between \$73.5 million and \$94.0 million (7-percent and 3-percent discount rate, respectively). The majority of the costs associated with Option 2 will be incurred by industry (\$63.3 million - \$80.4 million, 7-percent and 3-percent discount rate, respectively).

The analysis estimates that Option 2 will result in qualitative benefits in the following attributes: public health (accident), occupational health (accident), regulatory efficiency, off-site property, and on-site property. Specifically, the benefits include a reduced risk that public health and occupational health will be affected by radiological releases resulting from radiological emergencies, including hostile action. There also will be enhanced regulatory efficiency through regulatory and compliance improvements, including changes in industry's planning efforts and in NRC's review and inspection efforts.

The final rule also will reduce the risk that off-site and on-site property will be affected by radiological releases resulting from emergencies, including hostile action. Although EP cannot affect the probability of the initiating hostile action, a high level of EP increases the likelihood of accident mitigation if the initiating event proceeds beyond the need for initial operator actions. An augmented EP program will reduce the risk that off-site and on-site property will be affected by radiological releases by improving the response to initiating events that could lead to severe accidents in the absence of mitigative response.

Exhibit 4-1
Summary of Overall Benefits and Costs

Net Monetary Savings (or Costs) - Total Present Value	Non-Monetary Benefits/Costs
Option 1: No Action \$0	<u>Qualitative Benefits and Costs:</u> None.
Option 2: Final Rule Industry: (\$63.3 million) using a 7% discount rate (\$80.4 million) using a 3% discount rate NRC: (\$2.9 million) using a 7% discount rate (\$4.2 million) using a 3% discount rate Other Government: (\$7.3 million) using a 7% discount rate (\$9.4 million) using a 3% discount rate	<u>Qualitative Benefits:</u> Public Health (Accident): Reduced risk that public health will be affected by radiological releases resulting from radiological emergencies. Occupational Health (Accident): Reduced risk that occupational health will be affected by radiological releases resulting from radiological emergencies and by some hostile action. Regulatory Efficiency: Enhanced regulatory efficiency through regulatory and compliance improvements, including changes in industry's planning efforts and in NRC's review and inspection efforts. Off-Site Property: Reduced risk that off-site property will be affected by radiological releases resulting from radiological emergencies. On-Site Property: Reduced risk that on-site property will be affected by radiological releases resulting from radiological emergencies and some hostile action. <u>Qualitative Costs:</u> None.

Exhibit 4-2
Summary of One-Time, Annual, and Overall Benefits and Costs

Entity	Total Savings and Costs				Average per Nuclear Power Plant Site		Average per Non-Power Reactor	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$31,970,550)	(\$2,582,300)	(\$63,312,212)	(\$80,425,107)	(\$484,962)	(\$39,728)	(\$14,000)	\$0
NRC	(\$597,600)	(\$192,400)	(\$2,932,780)	(\$4,207,814)	n/a	n/a	n/a	n/a
Other Government	(\$3,449,600)	(\$315,900)	(\$7,283,713)	(\$9,377,182)	n/a	n/a	n/a	n/a
Total	(\$36,017,750)	(\$3,090,600)	(\$73,528,706)	(\$94,010,103)	(\$484,962)	(\$39,728)	(\$14,000)	\$0

Exhibit 4-3
Summary of One-Time, Annual, and Overall Benefits and Costs,
by Regulatory Initiative

Section	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Protection of Onsite Personnel						
Industry	(\$2,613,000)	\$0	(\$2,613,000)	(\$2,613,000)	(\$40,200)	\$0
NRC	(\$18,800)	\$0	(\$18,800)	(\$18,800)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$2,631,800)</i>	<i>\$0</i>	<i>(\$2,631,800)</i>	<i>(\$2,631,800)</i>	<i>(\$40,200)</i>	<i>\$0</i>
Emergency Action Levels for Hostile Action						
Industry	(\$487,500)	\$0	(\$487,500)	(\$487,500)	(\$7,500)	\$0
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$487,500)</i>	<i>\$0</i>	<i>(\$487,500)</i>	<i>(\$487,500)</i>	<i>(\$7,500)</i>	<i>\$0</i>
Challenging Drills and Exercises						
Industry	(\$832,000)	(\$468,000)	(\$6,512,168)	(\$9,613,603)	(\$12,800)	(\$7,200)
NRC	(\$52,000)	(\$64,000)	(\$828,775)	(\$1,252,903)	n/a	n/a
Other Government	\$0	(\$279,500)	(\$3,392,323)	(\$5,244,568)	n/a	n/a
<i>Subtotal</i>	<i>(\$884,000)</i>	<i>(\$811,500)</i>	<i>(\$10,733,266)</i>	<i>(\$16,111,074)</i>	<i>(\$12,800)</i>	<i>(\$7,200)</i>
Evacuation Time Estimate Updating						
Industry	(\$7,228,000)	(\$785,200)	(\$16,758,060)	(\$21,961,578)	(\$111,200)	(\$12,080)
NRC	(\$376,000)	(\$36,400)	(\$817,791)	(\$1,059,014)	n/a	n/a
Other Government	(\$364,000)	(\$36,400)	(\$805,791)	(\$1,047,014)	n/a	n/a
<i>Subtotal</i>	<i>(\$7,968,000)</i>	<i>(\$858,000)</i>	<i>(\$18,381,641)</i>	<i>(\$24,067,605)</i>	<i>(\$111,200)</i>	<i>(\$12,080)</i>
Licensee Coordination with Offsite Response Organizations						
Industry	(\$133,250)	\$0	(\$133,250)	(\$133,250)	(\$2,050)	\$0
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	(\$715,000)	\$0	(\$715,000)	(\$715,000)	n/a	n/a
<i>Subtotal</i>	<i>(\$848,250)</i>	<i>\$0</i>	<i>(\$848,250)</i>	<i>(\$848,250)</i>	<i>(\$2,050)</i>	<i>\$0</i>
On-Shift Staffing Analysis						
Industry	(\$5,824,000)	\$0	(\$5,824,000)	(\$5,824,000)	(\$89,600)	\$0
NRC	(\$65,600)	\$0	(\$65,600)	(\$65,600)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$5,889,600)</i>	<i>\$0</i>	<i>(\$5,889,600)</i>	<i>(\$5,889,600)</i>	<i>(\$89,600)</i>	<i>\$0</i>

Section	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Emergency Response Organization Augmentation and Alternative Facilities						
Industry	(\$1,417,000)	(\$65,000)	(\$2,205,912)	(\$2,636,667)	(\$21,800)	(\$1,000)
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$1,417,000)</i>	<i>(\$65,000)</i>	<i>(\$2,205,912)</i>	<i>(\$2,636,667)</i>	<i>(\$21,800)</i>	<i>(\$1,000)</i>
Amended Emergency Plan Change Process – Power Reactor Licensees						
Industry	(\$1,183,000)	(\$154,100)	(\$3,053,329)	(\$4,074,549)	(\$18,200)	(\$2,371)
NRC	\$0	(\$92,000)	(\$1,116,614)	(\$1,726,298)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$1,183,000)</i>	<i>(\$246,100)</i>	<i>(\$4,169,943)</i>	<i>(\$5,800,847)</i>	<i>(\$18,200)</i>	<i>(\$2,371)</i>
Amended Emergency Plan Change Process – Non-Power Reactor Licensees						
Industry	(\$448,000)	\$0	(\$448,000)	(\$448,000)	(\$14,000)	\$0
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$448,000)</i>	<i>\$0</i>	<i>(\$448,000)</i>	<i>(\$448,000)</i>	<i>(\$14,000)</i>	<i>\$0</i>
Emergency Declaration Timeliness						
Industry	(\$286,000)	\$0	(\$286,000)	(\$286,000)	(\$4,400)	\$0
NRC	(\$15,600)	\$0	(\$15,600)	(\$15,600)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$301,600)</i>	<i>\$0</i>	<i>(\$301,600)</i>	<i>(\$301,600)</i>	<i>(\$4,400)</i>	<i>\$0</i>
Emergency Operations Facility - Performance Based Approach						
Industry	\$0	\$0	\$0	\$0	\$0	\$0
NRC	(\$54,000)	\$0	(\$54,000)	(\$54,000)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$54,000)</i>	<i>\$0</i>	<i>(\$54,000)</i>	<i>(\$54,000)</i>	<i>\$0</i>	<i>\$0</i>
Backup Means for Alert and Notification Systems						
Industry	(\$11,518,800)	(\$1,110,000)	(\$24,990,993)	(\$32,346,960)	(\$177,212)	(\$17,077)
NRC	(\$15,600)	\$0	(\$15,600)	(\$15,600)	n/a	n/a
Other Government	(\$2,370,600)	\$0	(\$2,370,600)	(\$2,370,600)	n/a	n/a
<i>Subtotal</i>	<i>(\$13,905,000)</i>	<i>(\$1,110,000)</i>	<i>(\$27,377,193)</i>	<i>(\$34,733,160)</i>	<i>(\$177,212)</i>	<i>(\$17,077)</i>

Section	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
TOTAL (All Regulatory Initiatives)						
Industry	(\$31,970,550)	(\$2,582,300)	(\$63,312,212)	(\$80,425,107)	Nuclear Power Plant: (\$484,962) Non-Power Reactor: (\$14,000)	Nuclear Power Plant: (\$39,728) Non-Power Reactor: \$0
NRC	(\$597,600)	(\$192,400)	(\$2,932,780)	(\$4,207,814)	n/a	n/a
Other Government	(\$3,449,600)	(\$315,900)	(\$7,283,713)	(\$9,377,182)	n/a	n/a
Total	(\$36,017,750)	(\$3,090,600)	(\$73,528,706)	(\$94,010,103)	Nuclear Power Plant: (\$484,962) Non-Power Reactor: (\$14,000)	Nuclear Power Plant: (\$39,728) Non-Power Reactor: \$0

*Results in 2010 dollars.

**Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.1 Protection of Onsite Personnel

The new measures for this regulatory initiative will protect onsite emergency responders and other onsite personnel in emergencies resulting from hostile actions. The NRC conducted analyses following the terrorist attacks of September 11, 2001, and determined that the current guidance for protection of personnel during an emergency would not be protective in hostile action scenarios. A lack of protection for emergency responders who are expected to implement the emergency plan could result in the plan not being implemented as required. These emergency responders are best able to mitigate any damage caused by the hostile action and to provide notifications to OROs to consider protective actions for the public should such be necessary. A lack of protection for onsite emergency responders could result in the responders not being able to provide an adequate protective response during hostile action scenarios. The final rule will require licensees to develop new protective measures, such as evacuating personnel from target buildings, taking cover during an armed attack, accounting for personnel after an attack, and providing emergency response training. Such measures are prudent to protect personnel necessary to safely shut down the reactor. The primary benefit of this initiative, therefore, is potentially saving lives and reducing exposures during hostile action, both in terms of the emergency responders and the local population.

- Total Cost to Industry. The regulatory initiative will lead to in a total one-time cost across all power reactor licensees of approximately \$2.6 million.

- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$40,000.
- **Costs to NRC.** The regulatory initiative will result in a one-time cost to NRC of approximately \$19,000.
- **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because, in the event of hostile action, the provision potentially will result in significant saving of lives and reduction in exposures for onsite personnel. Appendix A.1 presents more detailed information on the costs for the protection of onsite personnel regulatory initiative.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$2,613,000)	\$0	(\$2,613,000)	(\$2,613,000)	(\$40,200)	\$0
NRC	(\$18,800)	\$0	(\$18,800)	(\$18,800)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$2,631,800)</i>	<i>\$0</i>	<i>(\$2,631,800)</i>	<i>(\$2,631,800)</i>	<i>(\$40,200)</i>	<i>\$0</i>

Appendix A.1 presents additional detail on the cost analysis for the regulatory initiative addressing protection of onsite personnel. Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.2 Emergency Action Levels for Hostile Action

This regulatory initiative codifies generically applicable requirements similar to those imposed by the anticipatory EALs of the ICM Order and industry initiatives responding to NRC Bulletin 2005-02. In the aftermath of the terrorist attacks of September 11, 2001, the staff became aware that the currently approved nuclear plant EALs may not appropriately characterize hostile actions. Changes to EALs were warranted due to the potentially rapid and purposefully damaging nature of hostile actions. Without proper declaration of emergencies based on hostile action, OROs may not receive adequate and timely notification and the ERO may not activate in a timely manner to provide an adequate protective response during hostile action scenarios. The regulatory initiative will increase assurance that licensees are adequately prepared to conduct appropriate assessment and emergency classification during hostile action, thereby resulting in emergency personnel onsite and offsite receiving proper notification to rapidly respond with the appropriate resources. The benefit of these new measures is to provide licensees and EROs more time to prepare for and respond to emergency events, thereby potentially saving lives, radiation exposure and property.

- **Total Cost to Industry.** The regulatory initiative will lead to a total one-time cost across all power reactor licensees of approximately \$488,000.

- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$8,000.
- **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will allow emergency responders more time to coordinate a response effort in the event of hostile action. The additional time will potentially enable emergency responders to save more lives.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$487,500)	\$0	(\$487,500)	(\$487,500)	(\$7,500)	\$0
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$487,500)</i>	<i>\$0</i>	<i>(\$487,500)</i>	<i>(\$487,500)</i>	<i>(\$7,500)</i>	<i>\$0</i>

Appendix A.2 presents additional detail on the cost analysis for the regulatory initiative addressing EALs for hostile action. Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.3 Challenging Drills and Exercises

The challenging drills and exercises initiative originated from NRC Bulletin 2005-02, as well as from an SRM issued on June 29, 2006. NRC regulations are designed to ensure that licensee ERO personnel are prepared to respond to any emergency. Drill and exercise programs are intended to ensure that ERO personnel develop and maintain the key skills necessary for mitigating emergencies. In the aftermath of the terrorist attacks of September 11, 2001, the staff became aware that hostile actions pose circumstances that are different from the conditions traditionally practiced in EP drill and exercise programs. The ERO is the primary organization trained to effectively mitigate damage caused by an emergency and to notify OROs of the event and, if necessary, of the need to take protective actions. Including hostile action in licensee drill and exercise programs will better prepare the ERO to respond to such events. This regulatory change will require enhanced scenario content for drills and exercises to include hostile action scenarios, and reduce preconditioning of licensee staff through a wider spectrum of challenges, thus improving licensee ERO capabilities under all accident scenarios. The benefit will be increased assurance that emergency plans would be implemented during any emergency and as a result, improved protection of public health and safety during an emergency.

- **Total Cost to Industry.** The regulatory initiative will lead to a total one-time cost across all power reactor licensees of approximately \$832,000, followed by total annual costs on the order of \$468,000. The total present value of these costs is approximately \$6.5 million (using a 7-percent discount rate) and \$9.6 million (using a 3-percent discount rate) over the next 30 years.

- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$13,000 followed by annual costs of approximately \$7,000.
- **Costs to NRC.** The regulatory initiative will result in a one-time cost to NRC of approximately \$52,000, followed by annual costs of approximately \$64,000. The total present value of these NRC costs is \$829,000 (using a 7-percent discount rate) and \$1.3 million (using a 3-percent discount rate).
- **Costs to Other Government Agencies.** The rule will result in annual costs to other government agencies to participate in hostile action drills and exercises. The annual cost is approximately \$279,500. The total present value of these costs is \$3.4 million (using a 7-percent discount rate) and \$5.2 million (using a 3-percent discount rate).
- **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will improve the execution of EP plans and better protect public health and safety during an emergency.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$832,000)	(\$468,000)	(\$6,577,951)	(\$9,812,197)	(\$12,800)	(\$7,200)
NRC	(\$52,000)	(\$64,000)	(\$837,771)	(\$1,280,061)	n/a	n/a
Other Government	\$0	(\$279,500)	(\$3,392,323)	(\$5,244,568)	n/a	n/a
Subtotal	(\$884,000)	(\$811,500)	(\$10,733,266)	(\$16,111,074)	(\$12,800)	(\$7,200)

Appendix A.3 presents additional detail on the cost analysis for the regulatory initiative addressing challenging drills and exercises.

Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.4 Evacuation Time Estimate Updating

The purpose of ETEs is to analyze expected traffic flow during an evacuation and identify any constraint that could challenge efficient evacuation. The ETE facilitates evacuation planning to provide an adequate protective response in the unlikely event of a severe accident. ETE results provide emergency planners information to support protective action decisions, including whether evacuation or sheltering in place is the better response to a severe accident. Existing EP regulations are ambiguous on updating ETEs. The changes to the regulations and guidance, which originated from NRC staff review, will require the periodic review and updating of the ETEs as well as information on evacuation plan improvements. The staff is in the process of changing its guidance for the recommendation of protective actions to protect the public. The best protective action strategy is conditional on the evacuation time for some accident scenarios. ETEs performed in accordance with standard methods will improve the information used for determining the best protective action strategy for each site. The primary benefit of this change will be to aid in the

development of the appropriate protective action strategy for each site. In addition, the identification of potential evacuation challenges and the consideration of methods to improve evacuation plans will lead to enhanced protection of public health and safety.

- **Total Cost to Industry.** The regulatory initiative will lead to a total one-time cost across all power reactor licensees of approximately \$7.2 million, followed by total annual costs on the order of \$785,000. The total present value of these costs is approximately \$16.8 million (using a 7-percent discount rate) and \$22.0 million (using a 3-percent discount rate) over the next 30 years.
- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$111,000 followed by annual costs of approximately \$12,000.
- **Costs to NRC.** The regulatory initiative will result in a one-time cost to NRC of approximately \$376,000, followed by annual costs of approximately \$36,000. The total present value of these NRC costs is \$818,000 (using a 7-percent discount rate) and \$1.1 million (using a 3-percent discount rate).
- **Costs to Other Government Agencies.** The rule will result in a one-time cost to other government agencies of approximately \$364,000, followed by annual costs of approximately \$36,000. The total present value of these other government costs is \$806,000 (using a 7-percent discount rate) and \$1.1 million (using a 3-percent discount rate).
- **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will result in updated EP plans, more effective emergency responses, and better protection to the local population in case of an emergency event.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$7,228,000)	(\$785,200)	(\$16,758,060)	(\$21,961,578)	(\$111,200)	(\$12,080)
NRC	(\$376,000)	(\$36,400)	(\$817,791)	(\$1,059,014)	n/a	n/a
Other Government	(\$364,000)	(\$36,400)	(\$805,791)	(\$1,047,014)	n/a	n/a
<i>Subtotal</i>	<i>(\$7,968,000)</i>	<i>(\$858,000)</i>	<i>(\$18,381,641)</i>	<i>(\$24,067,605)</i>	<i>(\$111,200)</i>	<i>(\$12,080)</i>

Appendix A.4 presents additional detail on the cost analysis for the regulatory initiative addressing ETE updating.

Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.5 Licensee Coordination with Offsite Response Organizations

This regulatory initiative originated in the Order and from the NRC staff's observation of Department of Homeland Security (DHS) Comprehensive Reviews. Currently, licensees are not explicitly required to coordinate with OROs and identify in their emergency plans the

assistance expected from ORO personnel during hostile action directed at a nuclear power plant. The DHS Comprehensive Review program determined that, at many sites, OROs had not planned for the competing resource demands that would occur during hostile action. The final rule will require licensees to identify in their emergency plans the assistance expected from State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site. These regulations require licensees to know which OROs would respond during an emergency and how to communicate with those OROs. The primary benefit will be to increase assurance that resources are available to respond to hostile action at a nuclear power plant. This change will enhance protection of public health and safety.

- **Total Cost to Industry.** The regulatory initiative will lead to a total one-time cost across all power reactor licensees on the order of \$133,000.
- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$2,000.
- **Costs to Other Government Agencies.** Additionally, the regulatory initiative will result in a one-time cost to other government agencies of approximately \$715,000.
- **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will increase the effectiveness of important aspects of the EP plan, thereby potentially saving lives in the event of an emergency.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$133,250)	\$0	(\$133,250)	(\$133,250)	(\$2,050)	\$0
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	(\$715,000)	\$0	(\$715,000)	(\$715,000)	n/a	n/a
Subtotal	(\$848,250)	\$0	(\$848,250)	(\$848,250)	(\$2,050)	\$0

Appendix A.5 presents additional detail on the cost analysis for the regulatory initiative addressing licensee coordination with OROs.

Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.6 On-Shift Staffing Analysis

This regulatory initiative will codify generically applicable requirements similar to those imposed by the 2002 ICM Order requirements limiting on-shift staff staffing analysis for individuals performing emergency plan functions. The final rule requires nuclear power reactor licensees to perform a detailed analysis, such as a job task analysis (JTA) or a time motion analysis, to demonstrate that on-shift personnel could implement the plan effectively without having competing responsibilities that could prevent them from performing their primary emergency plan tasks. The regulatory initiative will increase assurance that

appropriate shift resources are available for emergency plan implementation so that during an emergency, licensees will be able to carry out their emergency plans in timely fashion as needed to protect public health and safety. The lack of adequate staff on shift has the potential to delay implementation of the emergency plan during plant transients that may lead to an emergency. The primary benefit of this requirement will be to increase assurance of effective and timely emergency plan implementation and timely protective action recommendations to OROs, should that be necessary. This will enhance protection of public health and safety in the event of an emergency.

- **Total Cost to Industry.** The final rule will lead to a total one-time cost across all power reactor licensees of approximately \$5.8 million.
- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$90,000.
- **Costs to NRC.** The regulatory initiative will result in a one-time cost to NRC of approximately \$66,000.
- **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will reduce the possibility that emergency plans will fail as a result of foreseeable conflicts caused by multiple responsibilities. Therefore, the public will be better protected because onsite staff will be able to better fulfill all aspects of the emergency plan, and protective action recommendations to State and local government authorities will be more timely and accurate.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$5,824,000)	\$0	(\$5,824,000)	(\$5,824,000)	(\$89,600)	\$0
NRC	(\$65,600)	\$0	(\$65,600)	(\$65,600)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$5,889,600)</i>	<i>\$0</i>	<i>(\$5,889,600)</i>	<i>(\$5,889,600)</i>	<i>(\$89,600)</i>	<i>\$0</i>

Appendix A.6 presents additional detail on the cost analysis for the regulatory initiative addressing on-shift staffing analysis. Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.7 Emergency Response Organization Augmentation and Alternative Facilities

This regulatory initiative will codify generically applicable requirements for the use of an alternative emergency response facility or facilities similar to those requirements imposed by Order EA-02-26 and addressed in NRC Bulletin 2005-02. The alternative facility or facilities will protect ERO personnel from hostile action and increases assurance of timely ERO augmentation so responders can travel quickly to the site. In the event of hostile action, the onsite EP facilities may not be accessible by emergency response personnel, which may

prevent the ERO from taking the necessary actions to mitigate facility damage or implementing measures to protect public health and safety. Alternative facilities provide a place where the ERO can gather and prepare to enter the site as soon as it is safe to do so. If the ERO cannot gather in a timely manner, the full augmentation of the on shift ERO would be delayed. The alternative facility would be equipped to allow the ERO to begin preparations for damage mitigation efforts when they can access the site. The primary benefit of this regulatory initiative is greater assurance that the emergency response effort will be effective in the event that hostile action compromises primary emergency response facilities.

- **Total Cost to Industry.** The regulatory initiative will lead to a total one-time cost across all power reactor licensees on the order of \$1.4 million, followed by total annual costs of approximately \$65,000. The total present value of these costs is \$2.2 million (using a 7-percent discount rate) and \$2.6 million (using a 3-percent discount rate) over the next 30 years.
- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$22,000 followed by annual costs of approximately \$1,000.
- **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will increase assurance that EP plans would be executed effectively in the event of hostile actions, thereby better protecting public health and safety.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$1,417,000)	(\$65,000)	(\$2,205,912)	(\$2,636,667)	(\$21,800)	(\$1,000)
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
Subtotal	(\$1,445,000)	(\$65,000)	(\$2,205,912)	(\$2,636,667)	(\$21,800)	(\$1,000)

Appendix A.7 presents additional detail on the cost analysis for the regulatory initiative addressing ERO augmentation and alternative facilities.

Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.8 Amended Emergency Plan Change Process

Current regulations require licensees to “maintain in effect” their emergency plans. The objective of this regulatory initiative, which originated in NRC staff review and applies both to power reactors and non-power reactors, is not an improvement in current safety, but rather ensuring that the current level of safety is not reduced by changes to the emergency plan. The final rule will substantially clarify what changes would reduce the effectiveness of the licensee’s plans, minimizing licensees’ uncertainty regarding what changes would require

prior NRC staff review and what changes would not. This outcome, if achieved, will result in the following benefits:

- Facilitate the decision process for changes, resulting in less review and evaluation time.
 - Minimize licensee's exposure to potential violations for making changes without needed prior NRC staff review.
 - Minimize the increasing trend by some licensees of avoiding enforcement action by submitting all EP plan changes for NRC review, resulting in fewer costs of submittal and NRC staff charges.
- **Total Cost to Industry.** The regulatory initiative will lead to a total one-time cost across all power reactor licensees of approximately \$1.2 million, followed by total annual costs of about \$154,000. In addition, the regulatory initiative will result in a one-time cost across all non-power reactors of approximately \$448,000. Non-power reactors do not incur annual costs. The total present value of these costs is \$4.6 million (using a 7-percent discount rate) and \$6.3 million (using a 3-percent discount rate) over the next 30 years.
 - **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$18,000 followed by annual costs of approximately \$2,000. The average non-power reactor will incur a one-time cost of approximately \$14,000 and no annual costs.
 - **Costs to NRC.** The regulatory initiative will result in an annual cost of \$92,000. The total present value of these NRC costs is \$1.1 million (using a 7-percent discount rate) and \$1.7 million (using a 3-percent discount rate).
 - **Decision Rationale.** Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will increase assurance that current levels of safety will not be reduced and the licensee's emergency plan, as modified, will continue to meet the requirements in Appendix E to Part 50, and for nuclear power reactors, the planning standards of 10 CFR 50.47(b).

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Nuclear Power Reactor Licensees						
Industry	(\$1,183,000)	(\$154,100)	(\$3,053,329)	(\$4,074,549)	(\$18,200)	(\$2,371)
NRC	\$0	(\$92,000)	(\$1,116,614)	(\$1,726,298)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
Non-Power Reactor Licensees						
Industry	(\$448,000)	\$0	(\$448,000)	(\$448,000)	(\$14,000)	\$0
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
Subtotal	(\$1,631,000)	(\$246,100)	(\$4,617,943)	(\$6,248,847)	(\$16,814)	(\$2,371)

Appendix A.8 presents additional detail on the cost analysis for the regulatory initiative addressing Amended Emergency Plan Change Process.

Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.9 Emergency Declaration Timeliness

Current EP regulations do not establish timeliness criteria for the emergency declaration process. This regulatory initiative, which originated from NRC staff review, will require licensees to have the capability to assess, classify, and declare an emergency within 15 minutes of the availability of information that an EAL has been exceeded and to promptly declare the emergency as soon as possible following identification of the appropriate classification. While this action already is largely conducted on a voluntary basis by the industry, codification of the rule will result in increased assurance that the emergency plan will be effectively implemented. Thus, the objective of the regulatory initiative is to ensure that licensee emergency declarations are performed in a timely manner so as to support timely implementation of emergency response actions. The primary benefit will be to enhance the NRC's assurance that protective actions can be implemented on a timely basis, thereby protecting public health and safety.

- **Total Cost to Industry.** The regulatory initiative will lead to a total one-time cost across all power reactor licensees of approximately \$286,000.
- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$4,000.
- **Costs to NRC.** The regulatory initiative will result in a one-time cost to NRC of approximately \$16,000.

- Decision Rationale. Although the NRC did not quantify the benefits of this provision, the NRC staff did qualitatively examine benefits and concluded that the provision will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will increase assurance in the ability of licensees to conduct timely emergency declarations in the event of an emergency, which, in turn, will allow emergency personnel to respond as quickly as possible to protect the public.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$286,000)	\$0	(\$286,000)	(\$286,000)	(\$4,400)	\$0
NRC	(\$15,600)	\$0	(\$15,600)	(\$15,600)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$301,600)</i>	<i>\$0</i>	<i>(\$301,600)</i>	<i>(\$301,600)</i>	<i>(\$4,400)</i>	<i>\$0</i>

Appendix A.9 presents additional detail on the cost analysis for the regulatory initiative addressing the timeliness of emergency declarations.

Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.10 Emergency Operations Facility – Performance-Based Approach

This provision will revise the EP regulations to make the requirements for EOFs more performance-based. This regulatory initiative, which originated from NRC staff review, will allow licensees to locate an EOF more than 25 miles from a site and multi-site licensees to consolidate their EOFs if those licensees can demonstrate their emergency response strategies will adequately cope with an emergency at any of the associated plants. The new measures will provide specific functional requirements for EOFs, thereby ensuring that the necessary capabilities will be in place for the protection of public health and safety. The primary benefit of this provision will be the reduction in costs achieved by licensees that choose to locate their EOFs more than 25 miles from a site or consolidate their EOFs.

- Total Savings to Industry. The analysis assumes there will be no incremental costs to licensees for this regulatory initiative because the rule will not require location of an EOF more than 25 miles from a site or consolidation of EOFs. Instead, a licensee voluntarily will choose to pursue consolidation only if the incremental savings will exceed the incremental costs. These savings have not been quantified in the analysis.
- Costs to NRC. The regulatory initiative will result in a one-time cost to NRC of approximately \$54,000.
- Decision Rationale. The provision's savings to licensees will exceed the costs to the NRC and, therefore, that the provision is cost-justified.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	\$0	\$0	\$0	\$0	\$0	\$0
NRC	(\$54,000)	\$0	(\$54,000)	(\$54,000)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$54,000)</i>	<i>\$0</i>	<i>(\$54,000)</i>	<i>(\$54,000)</i>	<i>\$0</i>	<i>\$0</i>

Appendix A.10 presents additional detail on the cost analysis for the regulatory initiative addressing the EOF performance-based approach.

Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.1.11 Backup Means for ANS

This regulatory initiative, which originated from NRC staff review, will require that the public ANS has backup methods for both the alert and notification functions. Licensees (or the responsible offsite authorities) must demonstrate that the site's alert and notification capability includes administrative and physical means for a backup method. A backup means of alerting and notifying the public will increase the likelihood that an adequate protective response can be implemented when the primary means of alert and notification is unavailable. The primary benefit of this provision will be to provide increased assurance that the public will be alerted and notified of any emergent event at the nuclear power plant, thereby increasing the effectiveness of the emergency plan, saving lives, and increasing public safety and confidence.

- **Total Cost to Industry.** The regulatory initiative will result in a total one-time cost across all power reactor licensees of approximately \$11.5 million, followed by total annual costs on the order of \$1.1 million. The total present value of these costs is \$25.0 million (using a 7-percent discount rate) and \$32.3 million (using a 3-percent discount rate) over the next 30 years.
- **Average Cost per Site.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$177,000 followed by annual costs of approximately \$17,000.
- **Costs to NRC.** The regulatory initiative will result in a one-time cost to NRC of approximately \$16,000.
- **Costs to Other Government Agencies.** The regulatory initiative will result in a one-time cost to other government agencies of approximately \$2.4 million.
- **Decision Rationale.** Although the NRC did not quantify the benefits of this regulatory initiative, the NRC staff did qualitatively examine benefits and concluded that the regulatory initiative will provide health and safety-related benefits, as discussed above. The regulatory initiative is cost-justified because it will increase assurance that the local population will be notified of emergency events, thereby increasing the effectiveness of the emergency plan, saving lives, and increasing

public confidence and safety. Appendix A.11 contains a more detailed analysis of the costs associated with the backup means for ANS provisions of the final rule.

Entity	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	(\$11,518,800)	(\$1,110,000)	(\$24,990,993)	(\$32,346,960)	(\$177,212)	(\$17,077)
NRC	(\$15,600)	\$0	(\$15,600)	(\$15,600)	n/a	n/a
Other Government	(\$2,370,600)	\$0	(\$2,370,600)	(\$2,370,600)	n/a	n/a
<i>Subtotal</i>	<i>(\$13,905,000)</i>	<i>(\$1,110,000)</i>	<i>(\$27,377,193)</i>	<i>(\$34,733,160)</i>	<i>(\$177,212)</i>	<i>(\$17,077)</i>

Appendix A.11 presents additional detail on the cost analysis for the regulatory initiative addressing the backup means for ANS. Not all 65 sites will incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) will be less than the cost per affected site (both figures are shown in Appendix A).

4.2 Sensitivity Analysis – Pre-Order Baseline

The NRC has performed a sensitivity analysis using an alternative baseline (called the “pre-order baseline”) that considers the incremental costs of the final rule relative to only those regulations that were in effect before the NRC issued Order EA-02-26 and Bulletin 2005-02. The purpose of this sensitivity analysis is to account for relevant cost impacts of the orders and post-Bulletin industry initiatives in addition to those that are incremental to the final rule. These impacts already have been incurred, but they have not previously been quantified. The key findings of the sensitivity analysis are presented below:

- **Total Cost to Industry.** The final rule will lead to a total one-time cost across all reactor sites of approximately \$59.0 million, followed by total annual costs on the order of \$2.6 million. The total present value of these costs is \$90.3 million (using a 7-percent discount rate) and \$107.4 million (using a 3-percent discount rate) over the next 30 years.
- **Average Cost per Site for Power Reactors.** The average nuclear power plant site, which may include multiple units, will incur a one-time cost of approximately \$901,000 followed by annual costs of approximately \$40,000.
- **Average Cost per Site for Non-Power Reactors.** The average non-power reactor will incur a one-time cost of approximately \$14,000. The final rule will not impose any annual costs on non-power reactors.
- **Value of Benefits Not Reflected Above.** With the exception of some monetary savings to industry, the cost figures shown above do not reflect the value of the benefits of the final rule. These benefits are evaluated qualitatively in Section 4.1. (See Sections 4.1.1 - 4.1.11 for a detailed discussion on the benefits of each regulatory initiative of the final rule.)

- **Costs to NRC.** The rule will result in a one-time cost to NRC of approximately \$1.6 million, followed by annual costs of approximately \$236,000. The total present value of these costs is \$4.4 million (using a 7-percent discount rate) and \$6.0 million (using a 3-percent discount rate).
- **Costs to Other Government Agencies.** The final rule will result in a one-time cost to other government agencies of approximately \$12.1 million, followed by annual costs of approximately \$316,000. The total present value of these costs is \$15.9 million (using a 7-percent discount rate) and \$18.0 million (using a 3-percent discount rate).
- **Decision Rationale.** Although the NRC did not quantify the benefits of this rule, the NRC staff did qualitatively examine benefits and concluded that the rule will provide substantial health and safety-related benefits. The rule is cost-justified because the regulatory initiatives for increased and consistent EP measures will increase the effectiveness of emergency planning and response efforts, thereby saving lives of emergency personnel (during hostile action) and the public in the event of an emergency (hostile action or non-hostile action). Exhibit 4-4 below presents a more detailed cost analysis.

Exhibit 4-4
Sensitivity Analysis under the Pre-Order Baseline:
Industry, NRC, and Other Government Savings and Costs, by Regulatory Initiative

Section	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Protection of Onsite Personnel						
Industry	(\$4,771,000)	\$0	(\$4,771,000)	(\$4,771,000)	(\$73,400)	\$0
NRC	(\$38,800)	\$0	(\$38,800)	(\$38,800)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$4,809,800)</i>	<i>\$0</i>	<i>(\$4,809,800)</i>	<i>(\$4,809,800)</i>	<i>(\$73,400)</i>	<i>\$0</i>
Emergency Action Levels for Hostile Action						
Industry	(\$6,428,500)	\$0	(\$6,428,500)	(\$6,428,500)	(\$98,900)	\$0
NRC	(\$94,000)	\$0	(\$94,000)	(\$94,000)	n/a	n/a
Other Government	(\$143,000)	\$0	(\$143,000)	(\$143,000)	n/a	n/a
<i>Subtotal</i>	<i>(\$6,665,500)</i>	<i>\$0</i>	<i>(\$6,665,500)</i>	<i>(\$6,665,500)</i>	<i>(\$98,900)</i>	<i>\$0</i>
Challenging Drills and Exercises						
Industry	(\$9,594,000)	(\$468,000)	(\$15,274,168)	(\$18,375,603)	(\$147,600)	(\$7,200)
NRC	(\$791,000)	(\$107,200)	(\$2,092,098)	(\$2,802,512)	n/a	n/a
Other Government	(\$5,060,000)	(\$279,500)	(\$8,452,323)	(\$10,304,568)	n/a	n/a
<i>Subtotal</i>	<i>(\$15,445,000)</i>	<i>(\$854,700)</i>	<i>(\$25,818,589)</i>	<i>(\$31,482,683)</i>	<i>(\$147,600)</i>	<i>(\$7,200)</i>
Evacuation Time Estimate Updating						
Industry	(\$7,228,000)	(\$785,200)	(\$16,758,060)	(\$21,961,578)	(\$111,200)	(\$12,080)
NRC	(\$376,000)	(\$36,400)	(\$817,791)	(\$1,059,014)	n/a	n/a
Other Government	(\$364,000)	(\$36,400)	(\$805,791)	(\$1,047,014)	n/a	n/a
<i>Subtotal</i>	<i>(\$7,968,000)</i>	<i>(\$858,000)</i>	<i>(\$18,381,641)</i>	<i>(\$24,067,605)</i>	<i>(\$111,200)</i>	<i>(\$12,080)</i>
Licensee Coordination with Offsite Response Organizations						
Industry	(\$1,066,000)	\$0	(\$1,066,000)	(\$1,066,000)	(\$16,400)	\$0
NRC	(\$37,800)	\$0	(\$37,800)	(\$37,800)	n/a	n/a
Other Government	(\$4,160,000)	\$0	(\$4,160,000)	(\$4,160,000)	n/a	n/a
<i>Subtotal</i>	<i>(\$5,263,800)</i>	<i>\$0</i>	<i>(\$5,263,800)</i>	<i>(\$5,263,800)</i>	<i>(\$16,400)</i>	<i>\$0</i>
On-Shift Staffing Analysis						
Industry	(\$12,337,000)	\$0	(\$12,337,000)	(\$12,337,000)	(\$189,800)	\$0
NRC	(\$103,400)	\$0	(\$103,400)	(\$103,400)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$12,440,400)</i>	<i>\$0</i>	<i>(\$12,440,400)</i>	<i>(\$12,440,400)</i>	<i>(\$189,800)</i>	<i>\$0</i>

Section	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Emergency Response Organization Augmentation and Alternative Facilities						
Industry	(\$2,925,000)	(\$65,000)	(\$3,713,912)	(\$4,144,667)	(\$45,000)	(\$1,000)
NRC	(\$47,800)	\$0	(\$47,800)	(\$47,800)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$2,972,800)</i>	<i>(\$65,000)</i>	<i>(\$3,761,712)</i>	<i>(\$4,192,467)</i>	<i>(\$45,000)</i>	<i>(\$1,000)</i>
Amended Emergency Plan Change Process – Nuclear Power Reactor Licensees						
Industry	(\$1,183,000)	(\$154,100)	(\$3,053,329)	(\$4,074,549)	(\$18,200)	(\$2,371)
NRC	\$0	(\$92,000)	(\$1,116,614)	(\$1,726,298)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$1,183,000)</i>	<i>(\$246,100)</i>	<i>(\$4,169,943)</i>	<i>(\$5,800,847)</i>	<i>(\$18,200)</i>	<i>(\$2,371)</i>
Amended Emergency Plan Change Process – Non-Power Reactor Licensees						
Industry	(\$448,000)	\$0	(\$448,000)	(\$448,000)	(\$14,000)	\$0
NRC	\$0	\$0	\$0	\$0	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$448,000)</i>	<i>\$0</i>	<i>(\$448,000)</i>	<i>(\$448,000)</i>	<i>(\$14,000)</i>	<i>\$0</i>
Emergency Declaration Timeliness						
Industry	(\$1,488,500)	\$0	(\$1,488,500)	(\$1,488,500)	(\$22,900)	\$0
NRC	(\$15,600)	\$0	(\$15,600)	(\$15,600)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$1,504,100)</i>	<i>\$0</i>	<i>(\$1,504,100)</i>	<i>(\$1,504,100)</i>	<i>(\$22,900)</i>	<i>\$0</i>
Emergency Operations Facility – Performance-Based Approach						
Industry	\$0	\$0	\$0	\$0	\$0	\$0
NRC	(\$54,000)	\$0	(\$54,000)	(\$54,000)	n/a	n/a
Other Government	\$0	\$0	\$0	\$0	n/a	n/a
<i>Subtotal</i>	<i>(\$54,000)</i>	<i>\$0</i>	<i>(\$54,000)</i>	<i>(\$54,000)</i>	<i>\$0</i>	<i>\$0</i>
Backup Means for ANS						
Industry	(\$11,518,800)	(\$1,110,000)	(\$24,990,993)	(\$32,346,960)	(\$177,212)	(\$17,077)
NRC	(\$15,600)	\$0	(\$15,600)	(\$15,600)	n/a	n/a
Other Government	(\$2,370,600)	\$0	(\$2,370,600)	(\$2,370,600)	n/a	n/a
<i>Subtotal</i>	<i>(\$13,905,000)</i>	<i>(\$1,110,000)</i>	<i>(\$27,377,193)</i>	<i>(\$34,733,160)</i>	<i>(\$177,212)</i>	<i>(\$17,077)</i>

Section	Total Savings and Costs				Average per Site	
	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
TOTAL (All Regulatory Initiatives)						
Industry	(\$58,987,800)	(\$2,582,300)	(\$90,329,462)	(\$107,442,357)	Nuclear Power Plant: (\$900,612) Non-Power Reactor: (\$14,000)	Nuclear Power Plant: (\$39,728) Non-Power Reactor: \$0
NRC	(\$1,574,000)	(\$235,600)	(\$4,433,503)	(\$5,994,824)	n/a	n/a
Other Government	(\$12,097,600)	(\$315,900)	(\$15,931,713)	(\$18,025,182)	n/a	n/a
Total	(\$72,659,400)	(\$3,133,800)	(\$110,408,679)	(\$131,462,362)	Nuclear Power Plant: (\$900,612) Non-Power Reactor: (\$14,000)	Nuclear Power Plant: (\$39,728) Non-Power Reactor: \$0

Results in 2010 dollars.

4.3 Backfit Analysis

This section presents the NRC's evaluation of changes in the final rule in accordance with the Backfit Rule, 10 CFR 50.109. The backfit analysis examines the impacts of the rule relative to the baseline used in the regulatory analysis, which consists of existing requirements, the recently issued orders, and voluntary actions on part of the industry subsequent to NRC Bulletin 2005-02.

The backfit analysis examines the aggregation of the subset of regulatory requirements that constitute backfits as defined in 10 CFR 50.109(a)(1). The analysis excludes individual requirements that are not subject to the Backfit Rule or that do not fall within the definition of "backfitting" as defined in the Backfit Rule, which include requirements that fall into one or more of the following categories.

- Administrative matters. Revisions that make minor administrative changes, such as correction of typographic errors, correction of inconsistencies, relocating requirements from one section to another, and combining existing requirements into a single section, or changes in NRC administrative requirements, such as acceptable document formats, number of copies to be submitted, or an NRC administrative process.

- Information collection and reporting requirements. Revisions that either amend existing information collection and reporting requirements or impose new information and collection and reporting requirements, as set forth in the CRGR charter.
- Clarifications. Revisions that clarify current requirements to assure consistent understanding and implementation of the NRC's original intent for these requirements. These revisions remove the ambiguities that produced regulatory uncertainty without changing the underlying requirements stated in these sections.
- Permissive relaxations/Voluntary alternatives. Revisions that permit, but do not require, relaxations or alternatives to current requirements (i.e., licensees are free to either comply with current requirements or adopt the relaxed requirements/voluntary alternative as a binding requirement).

With the exception of two initiatives, one in Part 50, Appendix E, Section IV.E.8. allowing a performance-based approach for the EOF (which is expected to result in no cost to industry) and one in § 50.54(q) clarifying that licensees must submit for prior NRC approval under 10 CFR 50.90 any proposed change to their emergency plans that reduce the effectiveness of the emergency plans, the entire final rule qualifies as a backfit.

The amendment to § 50.54(q) requiring use of the license amendment process for changes to emergency plans that would reduce the effectiveness of the plans is not a change to existing requirements. Some confusion exists as to whether all proposed emergency plan changes submitted under § 50.4 will result in a reduction in effectiveness and whether Commission review of such submissions is necessary. The NRC is clarifying that the license amendment process is the correct process to use when reviewing submittals involving a proposed emergency plan change that the licensee has determined constitutes a reduction in effectiveness of the plan. The final rule language addresses this clarification. As part of this clarification, power reactor and non-power reactor licensees may need to review and possibly revise procedures and training to clarify the process for emergency plan changes (i.e., through 10 CFR 50.90 submittals).

This provision in the final rule is not a backfit. The Backfit Rule provides a "formal, systematic review to ensure" that "new or revised requirements or staff positions ... are properly justified and suitably defined. The requirements of this process are intended to ensure order, discipline, and predictability and to enhance optimal use of NRC staff and licensee resources." NUREG-1409, "Backfitting Guidelines", July 1990, ADAMS Accession No. ML032230247. In particular, the regulatory stability provided by the Backfit Rule applies only to the activities that were originally approved by issuance of a license, license amendment, or another regulatory approval. As explained in the Statements of Consideration for this final rule, a licensee's request under 10 CFR 50.54(q) asks for Commission authority to do what is not currently permitted under its license. In this circumstance, the licensee has no valid expectations protected by the Backfit Rule regarding the means for obtaining the new authority that is not permitted under the current license. This fundamental principle of the Backfit Rule can be found in many NRC rulemakings, including the original 10 CFR Part 52 rulemaking (54 FR 15372; April 18, 1989).

In addition, to the extent that using a license amendment process for making modifications to emergency plans that reduce the effectiveness of the plans is considered a change, it is a change to the NRC's regulatory process for addressing modifications to the emergency plan. The NRC's regulatory review process is not a licensee procedure required for

operating a plant that would be subject to backfit limitations. Furthermore, a licensee's procedural changes to address NRC administrative requirements do not constitute changes to procedures to "operate" a facility within the meaning of § 50.109(a)(1). The NRC only intended to provide backfitting protection to those aspects of licensee procedures needed to comply with the NRC's substantive technical requirements involving radiological health and safety and common defense and security.⁴ The Backfit Rule was not intended to address changes in aspects of licensee procedures needed to comply with changes or clarifications in NRC administrative requirements such as acceptable document formats, number of copies, or – as in this case – the process by which an NRC approval is provided. For these reasons, this clarification in 10 CFR 50.54(q) will not constitute a backfit under 10 CFR 50.109.

The NRC evaluated the aggregated set of requirements constituting backfits in accordance with 10 CFR 50.109 to determine if the costs of implementing the rule will be justified by a substantial increase in public health and safety or common defense and security. In performing this analysis, the NRC considered the quantitative and qualitative costs and benefits of the rule, as discussed below.

Collectively, the individual requirements in the final rule that qualify as backfits will result in an estimated net cost of approximately \$59.8 million to industry over the next 30 years (present value), assuming a 7-percent discount rate, or approximately \$75.9 million assuming a 3-percent discount rate.

For the average nuclear power plant site, these backfits will equate to an initial one-time cost of approximately \$467,000, followed by annual costs of about \$37,000 per year. For industry as a whole, NRC estimates that the backfits will result in approximately \$30.3 million in one-time costs, and about \$2.4 million in annual costs.

With regard to EP benefits afforded by the final rule's provisions, as documented in Section 4.1 of the regulatory analysis, the NRC considered them in qualitative terms. NRC also qualitatively determined whether the costs of the rule will be justified in light of the EP benefits. In contrast, the NRC evaluated costs in quantitative terms, as documented in Appendix A to the regulatory analysis.

In performing this analysis, the NRC considered the nine factors in 10 CFR 50.109, as follows:

(1) *Statement of the specific objectives that the backfit is designed to achieve;*

The rulemaking aims to enhance the current EP regulations pertaining to nuclear power reactors. The goals of the final rule are as follows:

- To enhance nuclear plant EP by codifying the requirements imposed by Commission orders issued after the terrorist attacks of September 11, 2001, as modified based upon experience and insights gained

⁴ The NRC notes that some NRC-compelled changes to procedures needed to comply with the NRC's substantive technical requirements involving radiological health and safety or common defense and security, would *not* constitute backfitting under § 50.109(a)(1). The most common example is an NRC-compelled change necessitated by a new statutory provision, where the statutory provision affords the NRC little discretion in implementing the statutory mandate. See U.S. Nuclear Regulatory Commission, "Criminal Penalties: Unauthorized Introduction of Weapons," *Federal Register*, Vol. 74, No. 197, October 14, 2009, pp. 52667-52675.

since implementation. These actions enhance the ability of nuclear plant EROs to respond to hostile action and implement emergency plans and an adequate protective response.

- To enhance nuclear plant EP by codifying the enhancements implemented by industry on a voluntary basis subsequent to the issuance of NRC Bulletin 2005-02. These actions enhance the ability of nuclear plant EROs to respond to hostile action and implement an adequate protective response.
- To enhance nuclear plant EP by codifying improvements to requirements in the areas of:
 - timeliness of declaration and the content of EAL schemes;
 - survivability, facilities and resources for EROs;
 - alerting and notification of the public, evacuation planning and adequate resources to implement evacuations; and,
 - training through drills and exercises that reflect the current threat environment.

(2) *General description of the activity that would be required by the licensee or applicant in order to complete the backfit;*

In general terms, the final rule will ensure that all licensees consistently implement new and existing EP measures. Detailed analysis of the activities and procedural changes required by the final rule are set forth in Appendix A to the regulatory analysis. A general description of each backfit is provided below:

- Protection of Onsite Personnel

The final rule will require licensees to review and revise plans, procedures, training, and guidance to address protective measures for onsite personnel (e.g., evacuation of personnel from target buildings, accounting for personnel after attack) in order to ensure that plant announcements are timely and convey the onsite protective measures deemed appropriate. This provision will affect power reactor licensees.

- EALs for Hostile Action

The new measures will require nuclear power reactor licensees to review their existing anticipatory EALs and update their plans, procedures, and training as needed to confirm that they comply with the rule requirements.

- Challenging Drills and Exercises

The final rule language will require licensees to change how they develop drill and exercise scenarios and make related changes to the emergency plan. Specifically, the drill and exercise scenarios must be designed to avoid biennial exercise scenarios that become predictable or precondition EROs to expect a sequential escalation of emergency classifications culminating in a

large radiological release. Licensees will need to submit these scenarios for NRC review. Licensees also will be required to use scenarios that demonstrate certain key functional skills in their exercises. This provision will affect power reactor licensees.

- ETE Updating

The final rule will clarify the need for licensees to review and update ETEs following the initial licensing of a nuclear power plant and to submit them to NRC for review. Specifically, the final rule will establish a requirement for licensees to update ETEs on a stated frequency (i.e., every 10 years) and when annual reviews show that the emergency planning zone (EPZ) permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ to increase by 25 percent or 30 minutes, whichever is less. This provision will affect power reactor licensees.

- Licensee Coordination with OROs

The final rule will require licensees to identify in their emergency plans the assistance expected from OROs during hostile action. Licensees will need to identify in their emergency plans the assistance expected from State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site. These regulations require licensees to know which OROs would respond during an emergency and how to communicate with those OROs. This provision will affect power reactor licensees.

- On-Shift Staffing Analysis

This change will require licensees to perform a detailed analysis, such as a JTA or a time motion analysis, to demonstrate that on-shift personnel can implement the plan effectively without having competing responsibilities that could prevent them from performing their primary emergency plan tasks. This provision will affect power reactor licensees.

- ERO Augmentation and Alternative Facilities

This change will require licensees to review and revise their plans, procedures, and training regarding ERO augmentation during hostile action. In addition, some sites may need to lease and/or equip a new facility to serve as an alternative facility. This provision will affect power reactor licensees.

- Emergency Declaration Timeliness

Nuclear power reactor licensees are already complying with the final rule language via a voluntary initiative that accomplishes the intent of the final rule. These licensees, however, will need to review and confirm or (if

necessary) revise existing site procedures and training to reflect the revised rule.

- Backup Means for ANS

The final rule will require that the public ANS has backup methods for both the alert and notification functions. Licensees must demonstrate that their site's alert and notification capability includes the administrative and physical means for a backup method of public alerting and notification. This provision will affect power reactor licensees.

(3) *Potential change in the risk to the public from the accidental off-site release of radioactive material;*

The rulemaking will not directly affect the likelihood of core damage or spent fuel damage. The rulemaking will provide added assurance that the risk resulting from offsite releases remains acceptably low. Although EP cannot affect the probability of the initiating event, a high level of EP will increase the likelihood of accident mitigation if the initiating event proceeds beyond the need for initial operator actions. An augmented EP program will enhance the protection of public health and safety by improving the response to initiating events that could lead to an accidental off-site release of radioactive material in the absence of mitigative response.

(4) *Potential impact on radiological exposure of facility employees;*

The rulemaking will not directly affect the likelihood of core damage or spent fuel damage. The rulemaking will provide added assurance that nuclear industry workers are not subjected to unnecessary radiological exposures as the result of emergency situations, including hostile action.

(5) *Installation and continuing costs associated with the backfit, including the cost of facility downtime or the cost of construction delay;*

The backfit analysis for the final rule sets forth the NRC's estimate of the initial costs for implementing the major elements of the final rule, and the ongoing costs to the licensees. The estimated one-time industry net cost associated with the backfits will be approximately \$30.3 million (or approximately \$467,000 for the average nuclear power plant site), and the annually recurring cost will be approximately \$2.4 million (or approximately \$37,000 for the average nuclear power plant program). Combining these initial and annual costs, this analysis estimates that the backfits associated with the final rule will cost industry approximately \$59.8 million (present value, assuming a 7-percent discount rate) to \$75.9 million (present value, assuming a 3-percent discount rate).

- (6) *The potential safety impact of changes in plant or operational complexity, including the relationship to final and existing regulatory requirements;*

The final rule will make changes with respect to the design of a nuclear power plant. Specifically, the changes involve the following:

- Licensees must provide alternative facilities for use during hostile action when onsite facilities (i.e., technical support center, operational support center, and/or EOF) are not available (e.g., due to emergency conditions).
- Licensees (or the responsible offsite authorities) must demonstrate that the site's alert and notification capability includes the administrative and physical means for a backup method of alerting and notification to be used in the event that the primary ANS is unavailable.

These design changes will not affect all nuclear power plants because some currently meet these requirements. This rule is not expected to have a significant effect on operational complexity beyond those reflected in the estimated costs to licensees.

- (7) *The estimated resource burden on the NRC associated with the backfit and the availability of such resources;*

The majority of the one-time costs incurred by NRC will come from reviewing and revising guidance documents to comply with the final rule. NRC will face additional costs to participate in EP exercise drills, review the emergency plans, coordinate with FEMA, develop procedures for ETE reviews, and review initial updates of ETEs. These activities will result in one-time costs of approximately \$544,000.

The NRC will face costs of annual operations to review biennial EP exercise scenario submittals and review ongoing updates of ETEs. These activities will result in annual costs of approximately \$100,000.

- (8) *The potential impact of differences in facility type, design or age on the relevancy and practicality of the backfit;*

For nuclear power reactor licensees, the EP requirements in the final rule will not directly relate to the facility type, design or age. Although the benefits and costs attributable to the final rule will vary for a variety of site-specific reasons (e.g., local population, transportation, and geography), the NRC does not believe they will vary significantly based upon the nuclear power reactor's facility type, design, or age.

- (9) *Whether the backfit is interim or final and, if interim, the justification for imposing the backfit on an interim basis.*

The backfit is final.

In light of the substantial benefits of the final rule as summarized in Sections 4.1.1-4.1.11, the NRC finds that the backfits contained in the final rule, when considered in the aggregate, will constitute a substantial increase in EP.

4.4 Safety Goal Evaluation

Safety goal evaluations are applicable only to regulatory initiatives considered to be generic safety enhancement backfits subject to the substantial additional protection standard at 10 CFR 50.109(a)(3).⁵ A safety goal evaluation is designed to determine whether a regulatory requirement should not be imposed generically on nuclear power plants because the residual risk is already acceptably low. The current rulemaking will apply generically to all reactors, and will provide added assurance that the public is protected from the consequences of nuclear reactor operations. Some aspects of the rule may indirectly qualify as generic safety enhancements because it is possible that they could indirectly affect the likelihood of core damage or spent fuel damage, which generally are the focus of a quantitative safety goal evaluation. However, the rulemaking will not directly affect the likelihood of core damage or spent fuel damage because EP plans are not activated until after a potential emergency situation has been identified. Therefore, a safety goal evaluation is not appropriate for the final rule.

4.5 CRGR Results

This section addresses regulatory analysis information requirements for rulemaking actions or staff positions subject to review by the CRGR. All information called for by the CRGR is presented in this regulatory analysis, or in the Federal Register Notice for the final rule. As a reference aid, Exhibit 4-5 provides a cross-reference between the relevant information and its location in this document or the Federal Register Notice.

⁵ A safety goal evaluation is not needed, therefore, for new requirements falling within the backfit exceptions at 10 CFR 50.109(a)(4)(i)-(iii).

Exhibit 4-5
Specific CRGR Regulatory Analysis Information Requirements

CRGR Charter Citation	Information Item to be Included in a Regulatory Analysis Prepared for CRGR Review	Where Item is Discussed
IV.B(1)	Proposed generic requirement or staff position as it is proposed to be sent out to licensees. When the objective or intended result of a proposed generic requirement or staff position can be achieved by setting a readily quantifiable standard that has an unambiguous relationship to a readily measurable quantity and is enforceable, the proposed requirements should specify the objective or result to be attained rather than prescribing how the objective or result is to be attained.	Final rule text in Federal Register Notice.
IV.B(iii)	The sponsoring office's position on whether the proposed action would increase requirements or staff positions, implement existing requirements or staff positions, or relax or reduce existing requirements or staff positions.	Regulatory Analysis, Section 4.1.
IV.B(iv)	The proposed method of implementation.	Regulatory Analysis, Section 6.
IV.B(vi)	Identification of the category of power reactors or nuclear materials facilities/activities to which the generic requirement or staff position will apply.	Regulatory Analysis, Section 3.2.2.
IV.B(vii) IV.B(viii)	If the proposed action involves a power reactor backfit and the exceptions at 10 CFR 50.109(a)(4) are not applicable, the items required at 10 CFR 50.109(c) and the required rationale at 10 CFR 50.109(a)(3) are to be included.	Regulatory Analysis, Section 4.3.
IV.B(x)	For proposed relaxations or decreases in current requirements or staff positions, a rationale is to be included for the determination that (a) the public health and safety and the common defense and security would be adequately protected if the proposed reduction in requirements or positions were implemented, and (b) the cost savings attributed to the action would be substantial enough to justify taking the action.	Federal Register Notice for the final rule.
IV.B(xii)	Preparation of an assessment of how the proposed action relates to the Commission's Safety Goal Policy Statement.	Regulatory Analysis, Section 4.4.

5. Decision Rationale

5.1 Regulatory Analysis

Relative to the “no-action” alternative, the final rule as a whole is expected to result in a net cost of approximately \$73.5 million (total present value over a 30-year period), assuming a 7-percent discount rate, or approximately \$94.0 million assuming a 3-percent discount rate. All of this cost will accrue to industry, except for approximately \$2.9 million (7 percent) or \$4.2 million (3 percent) and approximately \$7.3 million (7 percent) or \$9.4 million (3 percent) that will accrue to the NRC and other government agencies, respectively. The rule is expected to result in one-time industry costs of approximately \$32.0 million. This is equivalent to approximately \$485,000 for the average power reactor site, and \$14,000 for the average non-power reactor. The final rule language will generate annual industry costs of about \$2.6 million (\$40,000 per nuclear power plant site). Offsetting this net cost, the rule will result in substantial non-quantified benefits related to EP, as well as enhanced regulatory efficiency and effectiveness. The analysis discusses these benefits in Section 4.1 of this document. Based on the NRC's assessment of the costs and benefits of the final rule on licensee facilities, the agency has concluded that the final rule provisions are justified.

5.2 Backfit Analysis

The NRC conducted a backfit analysis of the final rule relative to the backfit requirements in 10 CFR 50.109. The final rule constitutes a backfit because it will impose new requirements on licensees. These new measures include developing measures and revising procedures and training related to protection of onsite personnel; reviewing and revising plans, procedures, and training regarding EALs; revising drill and exercise scenarios; reviewing and updating ETES; requiring coordination with OROs; reviewing plans, procedures, and training regarding the assignment of multiple responsibilities; reviewing and revising plans, procedures, and training regarding ERO augmentation; reviewing and revising existing site procedures and training to include new timeliness requirements for emergency declarations; and selecting and implementing a backup method of alerting and notification to be used in the event that the primary ANS is unavailable. These measures fall under the definition of a backfit because such efforts are new and are the result of a change in NRC's position.

In light of the substantial benefits of the final rule as summarized in Sections 4.1.1-4.1.11, the NRC finds that the backfits contained in the final rule, when considered in the aggregate, will constitute a substantial increase in EP and are justified in view of this increased protection of the public health and safety. Although EP cannot affect the probability of the initiating event, a high level of EP will increase the likelihood of accident mitigation if the initiating event proceeds beyond the need for initial operator actions. An EP program, augmented in compliance with the final EP rule, will substantially enhance public health and safety by improving the licensee and ORO response to events that could pose a threat to public health and safety.

6. Implementation

This section identifies how and when the final rule will be implemented, the required NRC actions to ensure implementation, and the impact on NRC resources.

6.1 Schedule

The final rule will be effective 30 days after its publication in the Federal Register. Licensees would be permitted to defer implementation of the final rule until 180 days after publication of the final rule in the Federal Register, except for the following rule changes: (1) the requirements under 10 CFR 50.54(q), which will become effective 30 days after publication of the final rule in the Federal Register; (2) the requirements under Part 50, Appendix E, Section IV.A.7., which each applicable licensee will be required to implement no later than 365 days after publication of the final rule in the Federal Register; (3) the requirements under Part 50, Appendix E, Section IV.F.2., which each applicable licensee will be required to implement over recurring eight year exercise cycles, with the first cycle beginning no later than the licensee's first biennial exercise conducted more than one year after the effective date of the final rule; and (4) the requirements under Part 50, Appendix E, Section IV.D.3., which each applicable licensee will be required to implement no later than its first biennial exercise conducted more than one year after the effective date of the final rule.

6.2 Impacts on Other Requirements

As discussed in Section 4.1, affected licensees will experience most of the impact of the revisions to the requirements. Nevertheless, the NRC expects the rulemaking to have a noticeable impact on agency resources, both initially and annually thereafter. In terms of one-time implementation costs, the NRC will face impacts to review the emergency plans and develop Temporary Instructions, and interact with FEMA. Furthermore, the NRC must develop procedures for ETE reviews, and review initial updates of ETEs. As shown in Exhibit 4.3, the one-time cost to NRC to comply with the requirements set forth in the 11 initiatives will be approximately \$598,000.

Additionally, the NRC expects the rulemaking to result in increased annual expenditures of agency resources. The NRC will face annual costs to review biennial EP exercise scenario submittals and review ongoing updates of ETEs. These activities will result in annual costs of approximately \$192,000.

Appendix A

Regulatory Analysis Assumptions, Inputs, and Results Per Facility,
by Regulatory Initiative

A.1: Protection of Onsite Personnel

NRC regulations do not currently require emergency plan provisions to protect onsite emergency responders and other onsite personnel in emergencies resulting from hostile action. The final rule codifies generically applicable requirements similar to the changes recommended in Bulletin 2005-02 requiring licensees to develop new protective measures (e.g., evacuation of personnel from target buildings, accounting for personnel after attack) and revise their procedures and training to ensure plant announcements are timely and convey the onsite protective measures deemed appropriate.

Assumptions:

- (1) Revised training materials (including content addressing onsite protective measures) replace existing training materials.
- (2) Revised procedures (including new onsite protective measures) are integrated into the current drill and exercise program at an insignificant cost to licensees.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Develop new protective measures	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (1,600)	\$ (1,600)
	Manager	\$150.00/hr	65	0 hrs/site	\$ -	\$ -	20 hrs/site	\$ (3,000)	\$ (3,000)
	EP staff	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	80 hrs/site	\$ (8,000)	\$ (8,000)
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (400)	\$ (400)
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (800)	\$ (800)
Review and revise emergency plan	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (1,600)	\$ (1,600)
	Manager	\$150.00/hr	65	0 hrs/site	\$ -	\$ -	20 hrs/site	\$ (3,000)	\$ (3,000)
	EP staff	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	80 hrs/site	\$ (8,000)	\$ (8,000)
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (400)	\$ (400)
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (800)	\$ (800)
Review and revise existing procedures	Executive	\$200.00/hr	65	4 hrs/site	\$ (800)	\$ (800)	4 hrs/site	\$ (800)	\$ (800)
	Manager	\$150.00/hr	65	20 hrs/site	\$ (3,000)	\$ (3,000)	20 hrs/site	\$ (3,000)	\$ (3,000)
	EP staff	\$100.00/hr	65	80 hrs/site	\$ (8,000)	\$ (8,000)	40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	20 hrs/site	\$ (1,000)	\$ (1,000)	20 hrs/site	\$ (1,000)	\$ (1,000)
	Licensing	\$100.00/hr	65	8 hrs/site	\$ (800)	\$ (800)	8 hrs/site	\$ (800)	\$ (800)
Review and revise training	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	8 hrs/site	\$ (1,200)	\$ (1,200)	4 hrs/site	\$ (600)	\$ (600)
	EP staff	\$100.00/hr	65	20 hrs/site	\$ (2,000)	\$ (2,000)	20 hrs/site	\$ (2,000)	\$ (2,000)
	Clerical	\$50.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	8 hrs/site	\$ (400)	\$ (400)
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Coordinate and develop industry guidance (NEI White Paper)	Executive	\$200.00/hr	65	8 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	24 hrs/site	\$ (3,600)	\$ (3,600)	0 hrs/site	\$ -	\$ -
	EP staff	\$100.00/hr	65	80 hrs/site	\$ (8,000)	\$ (8,000)	0 hrs/site	\$ -	\$ -
	Clerical	\$50.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	16 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost				320 hrs/site	\$ (33,200)	\$ (33,200)	372 hrs/site	\$ (40,200)	\$ (40,200)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (NRC inspection guidance, bulletin preparation)	Executive	\$100.00/hr		0 hrs	\$ -		8 hrs	\$ (800)	
	Manager	\$100.00/hr		0 hrs	\$ -		20 hrs	\$ (2,000)	
	Staff	\$100.00/hr		200 hrs	\$ (20,000)		100 hrs	\$ (10,000)	
	Clerical	\$100.00/hr		0 hrs	\$ -		40 hrs	\$ (4,000)	
	Attorney	\$100.00/hr		0 hrs	\$ -		20 hrs	\$ (2,000)	
Total NRC Implementation Cost				200 hrs	\$ (20,000)		188 hrs	\$ (18,800)	
NRC OPERATIONS (ANNUAL)									
None.									
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
None.									
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				520 hrs			560 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.

A.2: Emergency Action Levels for Hostile Action

NRC regulations currently do not require an emergency action level scheme for hostile action and do not address the issue of anticipatory response to hostile action. For nuclear power reactor licensees, the final rule codifies generically applicable requirements similar to the anticipatory EALs contained in the Interim Compensatory Measures Order (EA-02-26) and the recommended changes in NRC Bulletin 2005-02 in Part 50, Appendix E to require licensees to consider hostile action that may adversely affect the plant in their EAL schemes, which will allow the licensees to make event declarations based on credible threats and hostile action.

Assumptions:

(1) Current industry practice is sufficient to comply with the rule. Nonetheless, licensees must review their existing anticipatory EALs and training to confirm that they comply with the rule requirements.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Review existing EALs - Nuclear Power Reactor Licensees	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	0 hrs/site	\$ -	\$ -	4 hrs/site	\$ (600)	\$ (600)
	EP Staff	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	24 hrs/site	\$ (2,400)	\$ (2,400)
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (800)	\$ (800)
Review and revise EAL training Nuclear Power Reactor Licensees	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	8 hrs/site	\$ (1,200)	\$ (1,200)	2 hrs/site	\$ (300)	\$ (300)
	EP staff	\$100.00/hr	65	80 hrs/site	\$ (8,000)	\$ (8,000)	8 hrs/site	\$ (800)	\$ (800)
	Clerical	\$50.00/hr	65	8 hrs/site	\$ (400)	\$ (400)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Review and revise emergency plan - Nuclear Power Reactor Licensees	Executive	\$200.00/hr	65	2 hrs/site	\$ (400)	\$ (400)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	24 hrs/site	\$ (3,600)	\$ (3,600)	2 hrs/site	\$ (300)	\$ (300)
	EP staff	\$100.00/hr	65	80 hrs/site	\$ (8,000)	\$ (8,000)	8 hrs/site	\$ (800)	\$ (800)
	Clerical	\$50.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	16 hrs/site	\$ (1,600)	\$ (1,600)	4 hrs/site	\$ (400)	\$ (400)
Review and revise procedures Nuclear Power Reactor Licensees	Executive	\$200.00/hr	65	4 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	40 hrs/site	\$ (6,000)	\$ (6,000)	2 hrs/site	\$ (300)	\$ (300)
	EP staff	\$100.00/hr	65	200 hrs/site	\$ (20,000)	\$ (20,000)	8 hrs/site	\$ (800)	\$ (800)
	Clerical	\$50.00/hr	65	40 hrs/site	\$ (2,000)	\$ (2,000)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	16 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
Conduct initial EAL training (30 managers at 4 hour training; 12 security managers at 4 hour training; 50 ERO staff members at 2 hour training; one trainer per 30 trainees)	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	176 hrs/site	\$ (26,400)	\$ (26,400)	0 hrs/site	\$ -	\$ -
	EP staff	\$100.00/hr	65	104 hrs/site	\$ (10,400)	\$ (10,400)	0 hrs/site	\$ -	\$ -
	Clerical	\$50.00/hr	65	4 hrs/site	\$ (200)	\$ (200)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost				818 hrs/site	\$ (91,400)	\$ (91,400)	70 hrs/site	\$ (7,500)	\$ (7,500)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (six month effort for Bulletin preparation) and endorse security EALs in a regulatory guide	Executive	\$100.00/hr		100 hrs	\$ (10,000)		0 hrs	\$ -	
	Manager	\$100.00/hr		120 hrs	\$ (12,000)		0 hrs	\$ -	
	Staff	\$100.00/hr		560 hrs	\$ (56,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr		60 hrs	\$ (6,000)		0 hrs	\$ -	
	Attorney	\$100.00/hr		100 hrs	\$ (10,000)		0 hrs	\$ -	
Total NRC Implementation				940 hrs	\$ (94,000)		0 hrs	\$ -	
NRC OPERATIONS (ANNUAL)									
None.									
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
State and Local Government - Conduct initial ORO training (10 staff per site at 2 hour training; one trainer per 30 trainees)	Executive	\$100.00/hr	65	0 hrs/site	\$ -		0 hrs/site	\$ -	
	Manager	\$100.00/hr	65	0 hrs/site	\$ -		0 hrs/site	\$ -	
	Staff	\$100.00/hr	65	22 hrs/site	\$ (2,200)		0 hrs/site	\$ -	
	Clerical	\$100.00/hr	65	0 hrs/site	\$ -		0 hrs/site	\$ -	
	Attorney	\$100.00/hr	65	0 hrs/site	\$ -		0 hrs/site	\$ -	
Total State and Local Implementation Cost				22 hrs	\$ (2,200)		0 hrs/site	\$ -	
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				1,780 hrs			70 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) State and Local Government labor rates assumed to be the same as NRC wage rates.
- (3) See discussion of methodology in Section 3.2 of the Regulatory Analysis.

A.3: Challenging Drills and Exercises

The final rule language adopts elements of NRC Bulletin 2005-02 and requires licensees to revise drill and exercise scenarios. Specifically, the drill and exercise scenarios must be designed to avoid biennial exercise scenarios that become predictable or precondition emergency response organizations to expect a sequential escalation of emergency classifications culminating in a large radiological release. Licensees must submit these scenarios for NRC review. In addition, licensees must use certain scenarios and demonstrate certain key functional skills in their exercises and track implementation of the various scenario objectives.

Assumptions:

- (1) All sites develop drill and exercise plans and conduct initial exercises by the end of CY09 in response to NRC Bulletin 2005-02.
- (2) NRC reviews biennial exercise scenarios as they are used by licensees (annual cost, assuming 32.5 are submitted per year).

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Develop and review 8-year plan	Executive	\$200.00/hr	65	8 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	40 hrs/site	\$ (6,000)	\$ (6,000)	8 hrs/site	\$ (1,200)	\$ (1,200)
	EP staff	\$100.00/hr	65	80 hrs/site	\$ (8,000)	\$ (8,000)	40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	8 hrs/site	\$ (400)	\$ (400)
	Licensing	\$100.00/hr	65	16 hrs/site	\$ (1,600)	\$ (1,600)	8 hrs/site	\$ (800)	\$ (800)
Review and update emergency plan and exercise objective tracking scheme	Executive	\$200.00/hr	65	4 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	80 hrs/site	\$ (12,000)	\$ (12,000)	8 hrs/site	\$ (1,200)	\$ (1,200)
	EP staff	\$100.00/hr	65	160 hrs/site	\$ (16,000)	\$ (16,000)	40 hrs/site	\$ (4,000)	\$ (4,000)
	Licensing	\$100.00/hr	65	40 hrs/site	\$ (4,000)	\$ (4,000)	8 hrs/site	\$ (800)	\$ (800)
Conduct initial hostile action pilot exercise (4 executives at 8 hour tabletop and exercise, 30 managers at 8 hour tabletop and exercise; 100 ERO and security staff members at 4 hour exercise)	Executive	\$200.00/hr	65	32 hrs/site	\$ (6,400)	\$ (6,400)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	240 hrs/site	\$ (36,000)	\$ (36,000)	0 hrs/site	\$ -	\$ -
	EP staff	\$100.00/hr	65	400 hrs/site	\$ (40,000)	\$ (40,000)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost				1,148 hrs/site	(\$134,800)	(\$134,800)	128 hrs/site	(\$12,800)	(\$12,800)
INDUSTRY OPERATIONS (ANNUAL)									
Track compliance with required exercise scenario elements	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (1,200)	\$ (1,200)
	EP staff	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Submit scenario to NRC for review	Executive	\$200.00/hr	32.5	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	32.5	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (1,200)	\$ (600)
	EP staff	\$100.00/hr	32.5	0 hrs/site	\$ -	\$ -	16 hrs/site	\$ (1,600)	\$ (800)
	Clerical	\$50.00/hr	32.5	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (400)	\$ (200)
	Licensing	\$100.00/hr	32.5	0 hrs/site	\$ -	\$ -	8 hrs/site	\$ (800)	\$ (400)
Total Industry Operations Cost				0 hrs/site	\$ -	\$ -	88 hrs/site	(\$9,200)	(\$7,200)

Challenging Drills and Exercises (continued)

Requirement	Cost Inputs		Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
NRC IMPLEMENTATION (ONE-TIME)								
Review and revise guidance (Bulletin 2005-02 preparation)	Executive	\$100.00/hr	0 hrs	\$ -		0 hrs	\$ -	
	Manager	\$100.00/hr	0 hrs	\$ -		0 hrs	\$ -	
	Staff	\$100.00/hr	300 hrs	\$ (30,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr	0 hrs	\$ -		0 hrs	\$ -	
	Attorney	\$100.00/hr	0 hrs	\$ -		0 hrs	\$ -	
Compile RIS 2006-12 (review NEI White Paper)	Executive	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Manager	\$100.00/hr	16 hrs	\$ (1,600)		0 hrs	\$ -	
	Staff	\$100.00/hr	360 hrs	\$ (36,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Attorney	\$100.00/hr	20 hrs	\$ (2,000)		0 hrs	\$ -	
Review NEI-06-04, Rev. C	Executive	\$100.00/hr	16 hrs	\$ (1,600)		0 hrs	\$ -	
	Manager	\$100.00/hr	20 hrs	\$ (2,000)		0 hrs	\$ -	
	Staff	\$100.00/hr	240 hrs	\$ (24,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Attorney	\$100.00/hr	20 hrs	\$ (2,000)		0 hrs	\$ -	
Review and endorse NEI-06-04 Rev. 1 and review RIS 2008-08	Executive	\$100.00/hr	16 hrs	\$ (1,600)		0 hrs	\$ -	
	Manager	\$100.00/hr	20 hrs	\$ (2,000)		0 hrs	\$ -	
	Staff	\$100.00/hr	160 hrs	\$ (16,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Attorney	\$100.00/hr	20 hrs	\$ (2,000)		0 hrs	\$ -	
Participate in first 10 initial hostile action pilot drills	Executive	\$100.00/hr	20 hrs	\$ (2,000)		0 hrs	\$ -	
	Manager	\$100.00/hr	80 hrs	\$ (8,000)		0 hrs	\$ -	
	Staff	\$100.00/hr	234 hrs	\$ (23,400)		0 hrs	\$ -	
	Clerical	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Attorney	\$100.00/hr	0 hrs	\$ -		0 hrs	\$ -	
Participate in last 55 initial hostile action pilot drills	Executive	\$100.00/hr	4 hrs	\$ (400)		0 hrs	\$ -	
	Manager	\$100.00/hr	24 hrs	\$ (2,400)		0 hrs	\$ -	
	Staff	\$100.00/hr	100 hrs	\$ (10,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Attorney	\$100.00/hr	0 hrs	\$ -		0 hrs	\$ -	
Review emergency plan and TI and develop inspection procedures	Executive	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Manager	\$100.00/hr	16 hrs	\$ (1,600)		120 hrs	\$ (12,000)	
	Staff	\$100.00/hr	360 hrs	\$ (36,000)		280 hrs	\$ (28,000)	
	Clerical	\$100.00/hr	8 hrs	\$ (800)		60 hrs	\$ (6,000)	
	Attorney	\$100.00/hr	20 hrs	\$ (2,000)		60 hrs	\$ (6,000)	
Interact with FEMA	Executive	\$100.00/hr	420 hrs	\$ (42,000)		0 hrs	\$ -	
	Manager	\$100.00/hr	420 hrs	\$ (42,000)		0 hrs	\$ -	
	Staff	\$100.00/hr	4,200 hrs	\$ (420,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr	20 hrs	\$ (2,000)		0 hrs	\$ -	
	Attorney	\$100.00/hr	200 hrs	\$ (20,000)		0 hrs	\$ -	
Total NRC Implementation Cost			6,678 hrs	\$ (739,000)		520 hrs	\$ (52,000)	
NRC OPERATIONS (ANNUAL)								
Review of biennial exercise submittals	Executive	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Manager	\$100.00/hr	16 hrs	\$ (1,600)		160 hrs	\$ (16,000)	
	Staff	\$100.00/hr	400 hrs	\$ (40,000)		480 hrs	\$ (48,000)	
	Clerical	\$100.00/hr	8 hrs	\$ (800)		0 hrs	\$ -	
	Attorney	\$100.00/hr	0 hrs	\$ -		0 hrs	\$ -	
Total NRC Operations Cost			432 hrs	\$ (43,200)		640 hrs	\$ (64,000)	
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)								
FEMA - Review and revise guidance (REP program FEMA exercise evaluation criteria) - 3 FTE per year for staff	Executive	\$100.00/hr	420 hrs	\$ (42,000)		0 hrs	\$ -	
	Manager	\$100.00/hr	420 hrs	\$ (42,000)		0 hrs	\$ -	
	Staff	\$100.00/hr	4,200 hrs	\$ (420,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr	420 hrs	\$ (42,000)		0 hrs	\$ -	
	Attorney	\$100.00/hr	420 hrs	\$ (42,000)		0 hrs	\$ -	
State and Local - Participate in initial hostile action pilot drills	Executive	\$100.00/hr	65	32 hrs/site	\$ (3,200)	0 hrs/site	\$ -	
	Manager	\$100.00/hr	65	240 hrs/site	\$ (24,000)	0 hrs/site	\$ -	
	Staff	\$100.00/hr	65	400 hrs/site	\$ (40,000)	0 hrs/site	\$ -	
	Clerical	\$100.00/hr	65	16 hrs/site	\$ (1,600)	0 hrs/site	\$ -	
	Attorney	\$100.00/hr	65	0 hrs/site	\$ -	0 hrs/site	\$ -	
Total State, Local, and FEMA Implementation Cost			6,568 hrs	\$ (656,800)			\$ -	
OTHER GOVERNMENT OPERATIONS (ANNUAL)								
State and Local - Participate in hostile action drills once every 8 years	Executive	\$100.00/hr	8	n/a		16 hrs/site	\$ (1,600)	
	Manager	\$100.00/hr	8	n/a		120 hrs/site	\$ (12,000)	
	Staff	\$100.00/hr	8	n/a		200 hrs/site	\$ (20,000)	
	Clerical	\$100.00/hr	8	n/a		8 hrs/site	\$ (800)	
	Attorney	\$100.00/hr	8	n/a		0 hrs/site	\$ -	
Total State, Local, and FEMA Operations Cost						344 hrs	\$ (34,400)	
TOTAL			14,826 hrs			1,720 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) FEMA labor rates assumed to be the same as NRC wage rates.
- (3) See discussion of methodology in Section 3.2 of the Regulatory Analysis.
- (4) Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site would be less than the cost per affected site (both figures shown above).

A.4: Evacuation Time Estimate Updating

Under existing regulations, applicants and licensees must provide estimates of the time required to evacuate the public from the plume exposure pathway emergency planning zone (EPZ). The final rule clarifies the need to review and update the evacuation time estimates (ETEs) following the initial licensing of a nuclear power plant. Specifically, the final rule establishes a requirement for licensees to evaluate an EPZ's population and to update ETEs on a stated frequency (i.e., every 10 years) and when annual reviews show that the EPZ permanent resident population increases such that certain ETE values increase by 25 percent or 30 minutes, whichever is less, from the licensee's currently approved or confirmed ETE.

Assumptions:

- (1) All sites require an initial update to ETEs using 2010 Census data.
- (2) Although sites reassess population annually, ETE updates are needed once every 10 years due to new Census data.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
INDUSTRY IMPLEMENTATION (ONE-TIME)								
Establish process to obtain and analyze annual Census Bureau population updates for EPZ	Executive	\$200.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	n/a		8 hrs/site	\$ (1,200)	\$ (1,200)
	EP staff	\$100.00/hr	65	n/a		32 hrs/site	\$ (3,200)	\$ (3,200)
	Clerical	\$50.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
Review existing ETE	Executive	\$200.00/hr	65	n/a		4 hrs/site	\$ (800)	\$ (800)
	Manager	\$150.00/hr	65	n/a		8 hrs/site	\$ (1,200)	\$ (1,200)
	EP staff	\$100.00/hr	65	n/a		40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	n/a		8 hrs/site	\$ (800)	\$ (800)
Initial update to existing ETEs	\$ 100,000	65	n/a		1 estimate/site	\$ (100,000)	\$ (100,000)	
Total Industry Implementation Cost						100 hrs/site	\$ (111,200)	\$ (111,200)
INDUSTRY OPERATIONS (ANNUAL)								
Obtain and analyze annual Census Bureau population updates for EPZ	Executive	\$200.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	n/a		4 hrs/site	\$ (600)	\$ (600)
	EP staff	\$100.00/hr	65	n/a		8 hrs/site	\$ (800)	\$ (800)
	Clerical	\$50.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
Review Updated ETE	Executive	\$200.00/hr	6.5	n/a		4 hrs/site	\$ (800)	\$ (80)
	Manager	\$150.00/hr	6.5	n/a		8 hrs/site	\$ (1,200)	\$ (120)
	EP staff	\$100.00/hr	6.5	n/a		40 hrs/site	\$ (4,000)	\$ (400)
	Clerical	\$50.00/hr	6.5	n/a		0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	6.5	n/a		8 hrs/site	\$ (800)	\$ (80)
Update ETEs	\$ 100,000	65	n/a		1 time/10 years	\$ (10,000)	\$ (10,000)	
Total Industry Operations Cost						72 hrs/site	\$ (18,200)	\$ (12,080)
NRC IMPLEMENTATION (ONE-TIME)								
Develop procedures for ETE reviews (Standard Review Plan)	Executive	\$100.00/hr		n/a		0 hrs	\$ -	
	Manager	\$100.00/hr		n/a		16 hrs	\$ (1,600)	
	Staff	\$100.00/hr		n/a		80 hrs	\$ (8,000)	
	Clerical	\$100.00/hr		n/a		16 hrs	\$ (1,600)	
	Attorney	\$100.00/hr		n/a		8 hrs	\$ (800)	
Review initial updates of ETEs	Executive	\$100.00/hr	65	n/a		4 hrs/site	\$ (400)	
	Manager	\$100.00/hr	65	n/a		8 hrs/site	\$ (800)	
	Staff	\$100.00/hr	65	n/a		40 hrs/site	\$ (4,000)	
	Clerical	\$100.00/hr	65	n/a		0 hrs/site	\$ -	
	Attorney	\$100.00/hr	65	n/a		4 hrs/site	\$ (400)	
Total NRC Implementation Cost						176 hrs	\$ (17,600)	
NRC OPERATIONS (ANNUAL)								
Review ongoing updates of ETEs	Executive	\$100.00/hr	6.5	n/a		4 hrs/site	\$ (400)	
	Manager	\$100.00/hr	6.5	n/a		8 hrs/site	\$ (800)	
	Staff	\$100.00/hr	6.5	n/a		40 hrs/site	\$ (4,000)	
	Clerical	\$100.00/hr	6.5	n/a		0 hrs/site	\$ -	
	Attorney	\$100.00/hr	6.5	n/a		4 hrs/site	\$ (400)	
Total NRC Operations Cost						56 hrs/site	\$ (5,600)	

Evacuation Time Estimate Updating (continued)

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)								
Review initial ETEs	Executive	\$100.00/hr	65	n/a		4 hrs/site	\$ (400)	
	Manager	\$100.00/hr	65	n/a		8 hrs/site	\$ (800)	
	Staff	\$100.00/hr	65	n/a		40 hrs/site	\$ (4,000)	
	Clerical	\$100.00/hr	65	n/a		0 hrs/site	\$ -	
	Attorney	\$100.00/hr	65	n/a		4 hrs/site	\$ (400)	
Total State and Local Government Implementation Cost						56 hrs	\$ (5,600)	
OTHER GOVERNMENT OPERATIONS (ANNUAL)								
Review updated ETEs	Executive	\$100.00/hr	6.5	n/a		4 hrs/site	\$ (400)	
	Manager	\$100.00/hr	6.5	n/a		8 hrs/site	\$ (800)	
	Staff	\$100.00/hr	6.5	n/a		40 hrs/site	\$ (4,000)	
	Clerical	\$100.00/hr	6.5	n/a		0 hrs/site	\$ -	
	Attorney	\$100.00/hr	6.5	n/a		4 hrs/site	\$ (400)	
Total State and Local Government Operations Cost				n/a		56 hrs	\$ (5,600)	
TOTAL						516 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.
- (3) "n/a" means that the issue was not in the Orders or the Bulletin.
- (4) State and local government labor rates assumed to be the same as NRC wage rates.
- (5) Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site would be less than the cost per affected site (both figures shown above).

A.5: Licensee Coordination with Offsite Response Organizations

The current regulations do not require licensees to coordinate with offsite response organizations (OROs) to identify the assistance expected from State and local agencies during hostile action directed at the site. The final rule implements elements of Commission Order EA-02-26 explicitly requiring licensees to coordinate with OROs to identify in their emergency plans the resources expected from offsite personnel during hostile action. Licensees may need to review and update memoranda of understanding and letters of agreement executed with OROs.

Assumptions:

None.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Review and update letters of agreement and memoranda of understanding with OROs	Executive	\$200.00/hr	65	16 hrs/site	\$ (3,200)	\$ (3,200)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	31 hrs/site	\$ (4,650)	\$ (4,650)	3 hrs/site	\$ (450)	\$ (450)
	EP staff	\$100.00/hr	65	62 hrs/site	\$ (6,200)	\$ (6,200)	16 hrs/site	\$ (1,600)	\$ (1,600)
	Clerical	\$50.00/hr	65	6 hrs/site	\$ (300)	\$ (300)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost				115 hrs/site	\$ (14,350)	\$ (14,350)	19 hrs/site	\$ (2,050)	\$ (2,050)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (Temporary Instruction 2515/148 Rev 2)	Executive	\$100.00/hr		8 hrs	\$ (800)		0 hrs	\$ -	
	Manager	\$100.00/hr		30 hrs	\$ (3,000)		0 hrs	\$ -	
	Staff	\$100.00/hr		290 hrs	\$ (29,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr		40 hrs	\$ (4,000)		0 hrs	\$ -	
	Attorney	\$100.00/hr		10 hrs	\$ (1,000)		0 hrs	\$ -	
Total NRC Implementation Cost				378 hrs	\$ (37,800)		0 hrs/site	\$ -	
NRC OPERATIONS (ANNUAL)									
None.									
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
State and Local Government coordination	Executive	\$100.00/hr	65	34 hrs/site	\$ (3,400)		0 hrs/site	\$ -	
	Manager	\$100.00/hr	65	68 hrs/site	\$ (6,800)		0 hrs/site	\$ -	
	Staff	\$100.00/hr	65	136 hrs/site	\$ (13,600)		34 hrs/site	\$ (3,400)	
	Clerical	\$100.00/hr	65	14 hrs/site	\$ (1,400)		0 hrs/site	\$ -	
	Attorney	\$100.00/hr	65	14 hrs/site	\$ (1,400)		0 hrs/site	\$ -	
State and Local Government review and revise plan and procedures	Executive	\$100.00/hr	65	8 hrs/site	\$ (800)		4 hrs/site	\$ (400)	
	Manager	\$100.00/hr	65	40 hrs/site	\$ (4,000)		8 hrs/site	\$ (800)	
	Staff	\$100.00/hr	65	160 hrs/site	\$ (16,000)		40 hrs/site	\$ (4,000)	
	Clerical	\$100.00/hr	65	16 hrs/site	\$ (1,600)		8 hrs/site	\$ (800)	
	Attorney	\$100.00/hr	65	40 hrs/site	\$ (4,000)		16 hrs/site	\$ (1,600)	
Total State and Local Government Implementation Cost				530 hrs/site	\$ (53,000)		110 hrs	\$ (11,000)	
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				1,023 hrs			129 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.
- (3) FEMA labor rates assumed to be the same as NRC wage rates.
- (4) State and local government labor rates assumed to be the same as NRC labor rates.

A.6: On-Shift Staffing Analysis

The current regulations do not clearly state that on-shift nuclear power reactor personnel assigned to emergency plan implementation must not have multiple responsibilities that would prevent them from performing their primary plan tasks. The final rule codifies generically applicable requirements similar to elements of the Commission Order EA 02-26 requiring that on-shift emergency response personnel must not have competing responsibilities that interfere with primary emergency response functions. To comply, the nuclear power plant licensees must conduct a detailed analysis, such as a job task analysis or time motion analysis. In addition, this change requires that nuclear power reactor licensees review plans, procedures, and training regarding assignment of multiple responsibilities, and re-assign responsibilities if necessary.

Assumptions:

(1) This analysis assumes that some plans, procedures, and training must be revised and some re-assignment is necessary because the regulations may exceed the 2002 Order.

Requirement	Cost Inputs		Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule			
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Develop industry-wide job task analysis template	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	24 hrs/site	\$ (4,800)	\$ (4,800)
	Manager	\$150.00/hr	65	0 hrs/site	\$ -	\$ -	72 hrs/site	\$ (10,800)	\$ (10,800)
	EP Staff	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	240 hrs/site	\$ (24,000)	\$ (24,000)
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	48 hrs/site	\$ (2,400)	\$ (2,400)
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	48 hrs/site	\$ (4,800)	\$ (4,800)
Conduct job task analysis	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	4 hrs/site	\$ (800)	\$ (800)
	Manager	\$150.00/hr	65	0 hrs/site	\$ -	\$ -	16 hrs/site	\$ (2,400)	\$ (2,400)
	EP Staff	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	160 hrs/site	\$ (16,000)	\$ (16,000)
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	40 hrs/site	\$ (2,000)	\$ (2,000)
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	16 hrs/site	\$ (1,600)	\$ (1,600)
Review and revise emergency plan	Executive	\$200.00/hr	65	8 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	40 hrs/site	\$ (6,000)	\$ (6,000)	8 hrs/site	\$ (1,200)	\$ (1,200)
	EP Staff	\$100.00/hr	65	160 hrs/site	\$ (16,000)	\$ (16,000)	40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	40 hrs/site	\$ (4,000)	\$ (4,000)	8 hrs/site	\$ (800)	\$ (800)
Review and revise procedures	Executive	\$200.00/hr	65	8 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	40 hrs/site	\$ (6,000)	\$ (6,000)	8 hrs/site	\$ (1,200)	\$ (1,200)
	EP Staff	\$100.00/hr	65	320 hrs/site	\$ (32,000)	\$ (32,000)	80 hrs/site	\$ (8,000)	\$ (8,000)
	Clerical	\$50.00/hr	65	32 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	40 hrs/site	\$ (4,000)	\$ (4,000)	8 hrs/site	\$ (800)	\$ (800)
Review and revise training	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	8 hrs/site	\$ (1,200)	\$ (1,200)	0 hrs/site	\$ -	\$ -
	EP Staff	\$100.00/hr	65	120 hrs/site	\$ (12,000)	\$ (12,000)	40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Conduct initial training (30 staff at 4 hour training; one trainer per 30 trainees)	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	4 hrs/site	\$ (600)	\$ (600)	0 hrs/site	\$ -	\$ -
	EP Staff	\$100.00/hr	65	120 hrs/site	\$ (12,000)	\$ (12,000)	0 hrs/site	\$ -	\$ -
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost			972 hrs/site	\$ (100,200)	\$ (100,200)	860 hrs/site	\$ (89,600)	\$ (89,600)	
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (Temporary Instructions, NEI job task analysis template)	Executive	\$100.00/hr		8 hrs	\$ (800)		16 hrs	\$ (1,600)	
	Manager	\$100.00/hr		30 hrs	\$ (3,000)		40 hrs	\$ (4,000)	
	Staff	\$100.00/hr		290 hrs	\$ (29,000)		480 hrs	\$ (48,000)	
	Clerical	\$100.00/hr		40 hrs	\$ (4,000)		80 hrs	\$ (8,000)	
	Attorney	\$100.00/hr		10 hrs	\$ (1,000)		40 hrs	\$ (4,000)	
Total NRC Implementation Cost			378 hrs	\$ (37,800)		656 hrs	\$ (65,600)		
NRC OPERATIONS (ANNUAL)									
None.									
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
None.									
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				1,350 hrs			1,516 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.

A.7: Emergency Response Organization Augmentation and Alternative Facilities

The current regulations do not require licensees to identify alternative facilities to support emergency response organization (ERO) augmentation during hostile action. The final rule codifies generically applicable requirements similar to those elements of Commission Order EA-02-26 and industry initiatives subsequent to NRC Bulletin 2005-02 directing licensees to provide alternative facilities for use during hostile action when onsite facilities (i.e., technical support center, operational support center, and/or emergency operations facility) are not available (e.g., due to emergency conditions). This change requires licensees to review and revise their plans, procedures, and training regarding ERO augmentation during a hostile action. In addition, some sites may need to lease and equip a new facility to serve as its alternative facility.

Assumptions:

(1) This analysis assumes that most sites would use present facilities, i.e. EOF, back up EOF, back up TSC.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Review and revise emergency plan	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	10 hrs/site	\$ (2,000)	\$ (2,000)
	Manager	\$150.00/hr	65	0 hrs/site	\$ -	\$ -	20 hrs/site	\$ (3,000)	\$ (3,000)
	EP staff	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	0 hrs/site	\$ -	\$ -	24 hrs/site	\$ (1,200)	\$ (1,200)
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	40 hrs/site	\$ (4,000)	\$ (4,000)
Review and revise procedures	Executive	\$200.00/hr	65	8 hrs/site	\$ (1,600)	\$ (1,600)	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	24 hrs/site	\$ (3,600)	\$ (3,600)	8 hrs/site	\$ (1,200)	\$ (1,200)
	EP staff	\$100.00/hr	65	80 hrs/site	\$ (8,000)	\$ (8,000)	16 hrs/site	\$ (1,600)	\$ (1,600)
	Clerical	\$50.00/hr	65	40 hrs/site	\$ (2,000)	\$ (2,000)	0 hrs/site	\$ -	\$ -
	Licensing	\$250.00/hr	65	8 hrs/site	\$ (2,000)	\$ (2,000)	0 hrs/site	\$ -	\$ -
Review and revise training	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	8 hrs/site	\$ (1,200)	\$ (1,200)	8 hrs/site	\$ (1,200)	\$ (1,200)
	EP staff	\$100.00/hr	65	40 hrs/site	\$ (4,000)	\$ (4,000)	16 hrs/site	\$ (1,600)	\$ (1,600)
	Clerical	\$50.00/hr	65	16 hrs/site	\$ (800)	\$ (800)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Equip alternative facility with necessary capabilities	\$2,000/site	65				1 per site	\$ (2,000)	\$ (2,000)	
Total Industry Implementation Cost				224 hrs/site	\$ (23,200)	\$ (23,200)	183 hrs/site	\$ (21,800)	\$ (21,800)
INDUSTRY OPERATIONS (ANNUAL)									
Maintain procedures and equipment for alternative facilities	\$1,000/site	65				1 per site	\$ (1,000)	\$ (1,000)	
Total Industry Operations Cost							\$ (1,000)	\$ (1,000)	
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (Temporary Instructions, Bulletin 2005-02 preparation)	Executive	\$100.00/hr		8 hrs	(800)		0 hrs	\$ -	
	Manager	\$100.00/hr		30 hrs	(3,000)		0 hrs	\$ -	
	Staff	\$100.00/hr		390 hrs	(39,000)		0 hrs	\$ -	
	Clerical	\$100.00/hr		40 hrs	(4,000)		0 hrs	\$ -	
	Attorney	\$100.00/hr		10 hrs	(1,000)		0 hrs	\$ -	
Total NRC Implementation Cost				478 hrs	(47,800)		0 hrs	\$ -	
NRC OPERATIONS (ANNUAL)									
None.									
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
None.									
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				702 hrs			183 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.

A.8.a: Amended Emergency Plan Change Process - Nuclear Power Reactor Licensees

Current regulations require nuclear power reactor licensees to "maintain in effect" their emergency plan. The final rule language clarifies the existing rule language by requiring nuclear power reactor licensees: to maintain capabilities and resources relative to the emergency plan, ensure changes to the approved emergency plan are properly evaluated, and ensure that proposed changes that reduce the effectiveness of the plan receive prior review by the NRC. To comply with the final rule, nuclear power reactor licensees may need to revise procedures and training to address use of the license amendment process for emergency plan changes that result in reductions in effectiveness. In addition, for emergency plan changes that do not result in a reduction in effectiveness, nuclear power reactor licensees must submit to NRC a summary of the analysis prepared to demonstrate the change does not reduce the effectiveness of the plan.

Assumptions:

- (1) Training is only for EP and licensing staff. Training is separate from other training, but is delivered at the same time as 10 CFR 50.90 training.
- (2) NRC receives 12 submittals (i.e., emergency plan changes that reduce the effectiveness of the plan) per year. The base cost to licensees to prepare 10 CFR 50.90 submittals is comparable to the cost of preparing current emergency plan change requests.
- (3) One of the 12 submittals results in a hearing. Hearings impose incremental costs on licensees and NRC. (4) NRC annual cost associated with participating in hearing process includes time of ASLB judges and staff.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
INDUSTRY IMPLEMENTATION (ONE-TIME)								
Review and revise existing procedures - Nuclear power reactor licensees	Executive	\$200.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	n/a		16 hrs/site	\$ (2,400)	\$ (2,400)
	EP Staff	\$100.00/hr	65	n/a		60 hrs/site	\$ (6,000)	\$ (6,000)
	Clerical	\$50.00/hr	65	n/a		40 hrs/site	\$ (2,000)	\$ (2,000)
	Licensing	\$100.00/hr	65	n/a		16 hrs/site	\$ (1,600)	\$ (1,600)
Review and revise training - Nuclear power reactor licensees	Executive	\$200.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	n/a		8 hrs/site	\$ (1,200)	\$ (1,200)
	EP Staff	\$100.00/hr	65	n/a		40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	65	n/a		20 hrs/site	\$ (1,000)	\$ (1,000)
	Licensing	\$100.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost						200 hrs/site	\$ (18,200)	\$ (18,200)
INDUSTRY OPERATIONS (ANNUAL)								
Participate in hearing process	Executive	\$200.00/hr	1	n/a		48 hrs/site	\$ (9,600)	\$ (148)
	Manager	\$150.00/hr	1	n/a		160 hrs/site	\$ (24,000)	\$ (369)
	EP Staff	\$100.00/hr	1	n/a		160 hrs/site	\$ (16,000)	\$ (246)
	Clerical	\$50.00/hr	1	n/a		40 hrs/site	\$ (2,000)	\$ (31)
	Licensing	\$100.00/hr	1	n/a		160 hrs/site	\$ (16,000)	\$ (246)
	Attorney	\$250.00/hr	1	n/a		320 hrs/site	\$ (80,000)	\$ (1,231)
Submit summary of analysis of changes to emergency plan not resulting in reduction in effectiveness	Executive	\$200.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	EP Staff	\$100.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Clerical	\$50.00/hr	65	n/a		2 hrs/site	\$ (100)	\$ (100)
	Licensing	\$100.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
	Attorney	\$250.00/hr	65	n/a		0 hrs/site	\$ -	\$ -
Total Industry Operations Cost						890 hrs/site	\$ (147,700)	\$ (2,371)
NRC IMPLEMENTATION (ONE-TIME)								
None.								
NRC OPERATIONS (ANNUAL)								
Participate in hearing process	Executive	\$100.00/hr	1	n/a		80 hrs/site	\$ (8,000)	
	Manager	\$100.00/hr	1	n/a		160 hrs/site	\$ (16,000)	
	Staff	\$100.00/hr	1	n/a		320 hrs/site	\$ (32,000)	
	Clerical	\$100.00/hr	1	n/a		40 hrs/site	\$ (4,000)	
	Attorney	\$100.00/hr	1	n/a		320 hrs/site	\$ (32,000)	
Total NRC Operations Cost						920 hrs	\$ (92,000)	
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)								
None.								
OTHER GOVERNMENT OPERATIONS (ANNUAL)								
None.								
TOTAL						2,010 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.
- (3) "n/a" means that the issue was not in the Orders or the Bulletin.
- (4) Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site would be less than the cost per affected site (both figures shown above).

A.8.b: Amended Emergency Plan Change Process - Non-Power Reactors

Current regulations require non-power reactors to "maintain in effect" their emergency plan. The final rule language clarifies the existing rule language by requiring non-power reactors: to maintain capabilities and resources relative to the emergency plan, ensure changes to the approved emergency plan are properly evaluated, and ensure that proposed changes that reduce the effectiveness of the plan receive prior review by the NRC. To comply with the final rule, non-power reactors may need to revise procedures and training to address use of the license amendment process for emergency plan changes that result in reductions in effectiveness. In addition, for emergency plan changes that do not result in a reduction in effectiveness, non-power reactors must submit to the NRC a summary of the analysis prepared to demonstrate the change does not reduce the effectiveness of the plan.

Assumptions:

- (1) Training is only for EP staff. Training is separate from other training, but is delivered at the same time as other EP training.
- (2) NRC does not receive any 10 CFR 50.90 submittals (i.e., emergency plan change that reduces the effectiveness of the plan) per year.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
INDUSTRY IMPLEMENTATION (ONE-TIME)								
Review and revise existing procedures - Non-power reactors	Executive	\$200.00/hr	32	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	32	n/a		0 hrs/site	\$ -	\$ -
	EP Staff	\$100.00/hr	32	n/a		80 hrs/site	\$ (8,000)	\$ (8,000)
	Clerical	\$50.00/hr	32	n/a		40 hrs/site	\$ (2,000)	\$ (2,000)
	Licensing	\$100.00/hr	32	n/a		0 hrs/site	\$ -	\$ -
Review and revise training - Non-power reactors	Executive	\$200.00/hr	32	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	32	n/a		0 hrs/site	\$ -	\$ -
	EP Staff	\$100.00/hr	32	n/a		40 hrs/site	\$ (4,000)	\$ (4,000)
	Clerical	\$50.00/hr	32	n/a		0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	32	n/a		0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost						160 hrs/site	\$ (14,000)	\$ (14,000)
INDUSTRY OPERATIONS (ANNUAL)								
None								
NRC IMPLEMENTATION (ONE-TIME)								
None								
NRC OPERATIONS (ANNUAL)								
None								
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)								
None.								
OTHER GOVERNMENT OPERATIONS (ANNUAL)								
None.								
TOTAL						160 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.
- (3) "n/a" means that the issue was not in the Orders or the Bulletin.
- (4) Not all 32 sites would incur certain costs resulting from the provision. As a result, the cost for the average site would be less than the cost per affected site (which is shown above).

A.9: Emergency Declaration Timeliness

The current emergency preparedness regulations do not establish timeliness criteria for the emergency declaration process. The final rule requires nuclear power reactor licensee to have the capability to assess, classify, and declare an emergency within 15 minutes of the availability of information that an EAL has been exceeded and to promptly declare the emergency as soon as possible following identification of the appropriate classification. Nuclear power reactor licensees are already complying with the final rule language via a voluntary initiative that accomplishes the intent of the final rule. These licensees, however, must review and revise existing site procedures and training to include the new timeliness requirements for emergency classifications.

Assumptions:

- (1) New training for emergency classification timeliness is integrated within the current training program coursework and delivered at the same time as other EP training without extending the duration of training courses.
- (2) Sites do not incur operating costs because the final rule only requires the capability to classify and declare an emergency within 15 minutes.

Requirement	Cost Inputs			Incremental Effort Due to Voluntary Initiative (PI)			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Review and revise existing procedures	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	20 hrs/site	\$ (3,000)	\$ (3,000)	4 hrs/site	\$ (600)	\$ (600)
	EP Staff	\$100.00/hr	65	80 hrs/site	\$ (8,000)	\$ (8,000)	16 hrs/site	\$ (1,600)	\$ (1,600)
	Clerical	\$50.00/hr	65	20 hrs/site	\$ (1,000)	\$ (1,000)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Review and revise training	Executive	\$200.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	65	10 hrs/site	\$ (1,500)	\$ (1,500)	4 hrs/site	\$ (600)	\$ (600)
	EP Staff	\$100.00/hr	65	40 hrs/site	\$ (4,000)	\$ (4,000)	16 hrs/site	\$ (1,600)	\$ (1,600)
	Clerical	\$50.00/hr	65	20 hrs/site	\$ (1,000)	\$ (1,000)	0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	65	0 hrs/site	\$ -	\$ -	0 hrs/site	\$ -	\$ -
Total Industry Implementation Cost				190 hrs/site	\$ (18,500)	\$ (18,500)	40 hrs/site	\$ (4,400)	\$ (4,400)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (e.g., withdraw EPPS-2, update NEI-99-02)	Executive	\$100.00/hr		0 hrs	\$ -		0 hrs	\$ -	
	Manager	\$100.00/hr		0 hrs	\$ -		16 hrs	\$ (1,600)	
	Staff	\$100.00/hr		0 hrs	\$ -		80 hrs	\$ (8,000)	
	Clerical	\$100.00/hr		0 hrs	\$ -		40 hrs	\$ (4,000)	
	Attorney	\$100.00/hr		0 hrs	\$ -		20 hrs	\$ (2,000)	
Total NRC Implementation Cost				0 hrs	\$ -		156 hrs	\$ (15,600)	
NRC OPERATIONS (ANNUAL)									
None.									
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
None.									
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				190 hrs			196 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.

A.10: Emergency Operations Facility - Performance Based Approach

Current regulations do not address EOF distance criteria or the capabilities and functional requirements for a consolidated EOF (such as capabilities to handle simultaneous events at two or more sites). The final rule establishes a performance standard for single-site or consolidated EOFs and for licensees that plan to consolidate multiple EOFs into one facility. The analysis assumes there are no incremental costs to licensees for this final rule change because the rule does not require any currently approved EOFs to be relocated or consolidation of EOFs. Rather, a licensee may voluntarily choose to pursue consolidation only if the incremental savings exceed the incremental costs.

Assumptions:

- (1) Consolidation of EOFs is optional. Therefore, the analysis does not calculate the incremental costs or savings incurred by licensees resulting from EOF consolidation.
- (2) NRC incurs costs to revise guidance.

Requirement	Cost Inputs		Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
INDUSTRY IMPLEMENTATION (ONE-TIME)								
None.								
INDUSTRY OPERATIONS (ANNUAL)								
None.								
NRC IMPLEMENTATION (ONE-TIME)								
Review and revise guidance (NUREG 0696, NUREG 0737 supplement 1)	Executive	\$100.00/hr	n/a			20 hrs	\$ (2,000)	
	Manager	\$100.00/hr	n/a			80 hrs	\$ (8,000)	
	Staff	\$100.00/hr	n/a			360 hrs	\$ (36,000)	
	Clerical	\$100.00/hr	n/a			40 hrs	\$ (4,000)	
	Attorney	\$100.00/hr	n/a			40 hrs	\$ (4,000)	
Total NRC Implementation Cost						540 hrs	\$ (54,000)	
NRC OPERATIONS (ANNUAL)								
None.								
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)								
None.								
OTHER GOVERNMENT OPERATIONS (ANNUAL)								
None.								
TOTAL						540 hrs		

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.
- (3) "n/a" means that the issue was not in the Orders or the Bulletin.

A.11: Backup Means for Alert and Notification Systems (ANS)

Existing regulations and guidance do not address requirements for backup alerting and notification capabilities when a major portion of the primary means is unavailable. The final rule requires licensees to demonstrate that the alert and notification capability includes a backup means of alert and notification in the event that the primary ANS is unavailable.

Assumptions:

- (1) Twenty-one sites already have backup power to sirens as a backup alerting mechanism. However, these sites are not fully compliant with the final rule and will need to upgrade their siren activation system in order to comply.
- (2) Thirty-two sites already use route alerting as a backup means of alerting, which complies with the final rule. These sites, however, need to review and verify their procedures to ensure there are adequate resources during hostile action.
- (3) Twelve sites do not have any backup means of alerting. Six of the sites need to implement backup power to sirens, while the other 6 need to implement route alerting as backup.
- (4) Thirty-two sites have backup Emergency Alert System (EAS) capabilities for public notification.
- (5) Thirty-three sites do not have a backup EAS capability. These sites incur incremental costs to acquire a backup EAS capability.

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site
INDUSTRY IMPLEMENTATION (ONE-TIME)								
Determine in conjunction with offsite officials and design means for backup ANS	Executive	\$200.00/hr	45	n/a		40 hrs/site	\$ (8,000)	\$ (5,538)
	Manager	\$150.00/hr	45	n/a		80 hrs/site	\$ (12,000)	\$ (8,308)
	EP Staff	\$100.00/hr	45	n/a		240 hrs/site	\$ (24,000)	\$ (16,615)
	Engineer	\$100.00/hr	45	n/a		240 hrs/site	\$ (24,000)	\$ (16,615)
	Clerical	\$50.00/hr	45	n/a		8 hrs/site	\$ (400)	\$ (277)
	Licensing	\$100.00/hr	45	n/a		40 hrs/site	\$ (4,000)	\$ (2,769)
Implement backup alerting system	Upgrade sirens	\$10,000/siren	6	n/a		50 sirens/site	\$ (500,000)	\$ (46,154)
	Implement route alerting	\$50,000/site	6	n/a		1 plan/site	\$ (50,000)	\$ (4,615)
Review and verify existing ANS backup	Executive	\$200.00/hr	53	n/a		0 hrs/site	\$ -	\$ -
	Manager	\$150.00/hr	53	n/a		8 hrs/site	\$ (1,200)	\$ (978)
	EP Staff	\$100.00/hr	53	n/a		40 hrs/site	\$ (4,000)	\$ (3,262)
	Clerical	\$50.00/hr	53	n/a		0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	53	n/a		8 hrs/site	\$ (800)	\$ (652)
Implement back-up to siren activation system	\$50,000/site	21	n/a		1 system/site	\$ (50,000)	\$ (16,154)	
Implement EAS backup notification system	\$50,000/site	33	n/a		1 system/site	\$ (50,000)	\$ (25,385)	
Develop administrative controls, maintenance procedures, training and testing program for means of backup ANS (full program)	Executive	\$200.00/hr	12	n/a		30 hrs/site	\$ (6,000)	\$ (1,108)
	Manager	\$150.00/hr	12	n/a		60 hrs/site	\$ (9,000)	\$ (1,662)
	EP Staff	\$100.00/hr	12	n/a		360 hrs/site	\$ (36,000)	\$ (6,646)
	Clerical	\$50.00/hr	12	n/a		0 hrs/site	\$ -	\$ -
	Licensing	\$100.00/hr	12	n/a		30 hrs/site	\$ (3,000)	\$ (554)
Develop administrative controls, maintenance procedures, training and testing program for means of backup ANS (partial program)	Executive	\$200.00/hr	21	n/a		8 hrs/site	\$ (1,600)	\$ (517)
	Manager	\$150.00/hr	21	n/a		8 hrs/site	\$ (1,200)	\$ (388)
	EP Staff	\$100.00/hr	21	n/a		80 hrs/site	\$ (8,000)	\$ (2,585)
	Clerical	\$50.00/hr	21	n/a		8 hrs/site	\$ (400)	\$ (129)
	Licensing	\$100.00/hr	21	n/a		8 hrs/site	\$ (800)	\$ (258)
Revise FEMA REP-10 ANS design report	Executive	\$200.00/hr	33	n/a		4 hrs/site	\$ (800)	\$ (406)
	Manager	\$150.00/hr	33	n/a		24 hrs/site	\$ (3,600)	\$ (1,828)
	EP Staff	\$100.00/hr	33	n/a		240 hrs/site	\$ (24,000)	\$ (12,185)
	Clerical	\$50.00/hr	33	n/a		16 hrs/site	\$ (800)	\$ (406)
	Licensing	\$100.00/hr	33	n/a		24 hrs/site	\$ (2,400)	\$ (1,218)
Total Industry Implementation Cos						1,604 hrs/site	\$ (826,000)	\$ (177,212)
INDUSTRY OPERATIONS (ANNUAL)								
Maintain back-up to siren system	\$200/siren	27	n/a		50 sirens/site	\$ (10,000)	\$ (4,154)	
Maintain route alerting system	\$5,000/site	38	n/a		1 system/site	\$ (5,000)	\$ (2,923)	
Maintain back-up to EAS	\$10,000/site	65	n/a		1 system/site	\$ (10,000)	\$ (10,000)	
Total Industry Operations Cos							\$ (25,000)	\$ (17,077)
NRC IMPLEMENTATION (ONE-TIME)								
Review and revise guidance (Inspection procedures)	Executive	\$100.00/hr		n/a		8 hrs	\$ (800)	
	Manager	\$100.00/hr		n/a		20 hrs	\$ (2,000)	
	Staff	\$100.00/hr		n/a		100 hrs	\$ (10,000)	
	Clerical	\$100.00/hr		n/a		8 hrs	\$ (800)	
	Attorney	\$100.00/hr		n/a		20 hrs	\$ (2,000)	
Total NRC Implementation Cost						156 hrs	\$ (15,600)	
NRC OPERATIONS (ANNUAL)								
None.								

Backup Means for Alert and Notification Systems (continued)

Requirement	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Final Rule		
	Unit Cost	Sites Affected	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	Units	Savings (Cost) Per Affected Site	Savings (Cost) Per Average Site	
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
FEMA to review and approve revised FEMA REP-10 ANS	Executive	\$100.00/hr	33	n/a		0 hrs/site	\$ -		
	Manager	\$100.00/hr	33	n/a		8 hrs/site	\$ (800)		
	Staff	\$100.00/hr	33	n/a		160 hrs/site	\$ (16,000)		
	Clerical	\$100.00/hr	33	n/a		8 hrs/site	\$ (800)		
	Attorney	\$100.00/hr	33	n/a		0 hrs/site	\$ -		
FEMA to review and revise guidance (REP-10, Guidance Memorandum AN-1, REP program manual, Civil Preparedness Guide 1-17)	Executive	\$100.00/hr		n/a		8 hrs	\$ (800)		
	Manager	\$100.00/hr		n/a		40 hrs	\$ (4,000)		
	Staff	\$100.00/hr		n/a		240 hrs	\$ (24,000)		
	Clerical	\$100.00/hr		n/a		16 hrs	\$ (1,600)		
	Attorney	\$100.00/hr		n/a		40 hrs	\$ (4,000)		
State and Local Government coordination	Executive	\$100.00/hr	65	n/a		34 hrs	\$ (3,400)		
	Manager	\$100.00/hr	65	n/a		68 hrs	\$ (6,800)		
	Staff	\$100.00/hr	65	n/a		136 hrs	\$ (13,600)		
	Clerical	\$100.00/hr	65	n/a		14 hrs	\$ (1,400)		
	Attorney	\$100.00/hr	65	n/a		14 hrs	\$ (1,400)		
State and Local Government review and revise plan and procedures	Executive	\$100.00/hr	65	n/a		8 hrs	\$ (800)		
	Manager	\$100.00/hr	65	n/a		40 hrs	\$ (4,000)		
	Staff	\$100.00/hr	65	n/a		160 hrs	\$ (16,000)		
	Clerical	\$100.00/hr	65	n/a		16 hrs	\$ (1,600)		
	Attorney	\$100.00/hr	65	n/a		40 hrs	\$ (4,000)		
Total Other Government Implementation Cos						1,050 hrs	\$ (105,000)		
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL						2,810 hrs			

Notes:

- (1) Hour estimates based on judgment of NRC staff.
- (2) See discussion of methodology in Section 3.2 of the Regulatory Analysis.
- (3) "n/a" means that the issue was not in the Orders or the Bulletin.
- (4) FEMA labor rates assumed to be the same as NRC wage rates.
- (5) Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site would be less than the cost per affected site (both figures shown above).

UNITED STATES NUCLEAR REGULATORY COMMISSION

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

FINAL RULE 10 CFR 50.47, 10 CFR 50.54,

10 CFR PART 50, APPENDIX E, AND 10 CFR 52.79

The Nuclear Regulatory Commission (NRC or Commission) is amending certain emergency preparedness (EP) requirements in its regulations that govern domestic licensing of production and utilization facilities: 10 CFR 50.47, 10 CFR 50.54, Appendix E to 10 CFR Part 50, and 10 CFR 52.79. The final rule codifies generically applicable requirements similar to those previously imposed by Commission orders, updates the EP regulations to include actions previously and voluntarily initiated by nuclear power plant licensees, and amends other licensee emergency plan requirements based on a comprehensive review of the NRC's EP regulations and guidance. The requirements enhance the ability of licensees in preparing to take and taking certain EP actions and protective measures in the event of a radiological emergency; address, in part, security-related EP issues identified after the terrorist events of September 11, 2001; clarify regulations to effect consistent emergency plan implementation among licensees; and modify certain EP requirements to be more effective and efficient.

BACKGROUND:

After the terrorist events of September 11, 2001, the NRC determined that it was necessary to require certain modifications of EP programs for operating power reactor licensees to ensure continued adequate protection of public health and safety. These modifications were issued to licensees via NRC Order EA-02-026, "Order for Interim Safeguards and Security

Compensatory Measures,” (Order EA-02-026), dated February 25, 2002. Order EA-02-026 was issued to the license holders of the 104 commercial nuclear power reactors in the United States. The NRC evaluated the EP planning basis for nuclear power reactors given the changed threat environment. In SECY-03-0165, “Evaluation of Nuclear Power Reactor Emergency Preparedness Planning Basis Adequacy in the Post-9/11 Threat Environment,” dated September 22, 2003 (not publicly available), the NRC staff reported to the Commission that the EP planning basis remained valid, including scope and timing issues. However, the NRC staff also recognized that security events differ from accident events due to the planned action to maximize damage and loss of life and that the EP response to such events also differed. The NRC staff noted several EP issues that required further action to better respond to the post-September 11, 2001 threat environment.

On December 14, 2004, the NRC staff briefed the Commission on EP program initiatives. During the briefing, the NRC staff informed the Commission of its intent to conduct a comprehensive review of EP regulations and guidance. On February 25, 2005, in response to the Commission’s staff requirements memorandum (SRM), SRM-M041214B, “Briefing on Emergency Preparedness Program Initiatives, 1:00 P.M., Tuesday, December 14, 2004, Commissioners’ Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance),” dated December 20, 2004, the NRC staff provided the Commission with a schedule of activities for the completion of the comprehensive review. The NRC staff, through SECY-05-0010, “Recommended Enhancements of Emergency Preparedness and Response at Nuclear Power Plants in Post-9/11 Environment,” dated January 10, 2005 (not publicly available), requested Commission approval of the NRC staff’s recommendations for enhancing, through new guidance documents, EP in the post-September 11, 2001 threat environment. In its SRM to SECY-05-0010, dated May 4, 2005 (not publicly available), the Commission directed the staff to provide the results of a comprehensive review of EP regulations and guidance. That

memorandum also approved the staff's recommendation to proceed with enhancements to address EP issues as described in SECY-05-0010. As a result, the NRC staff issued Bulletin 2005-02 (BL-05-02), "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005, which recommended enhancements that licensees could integrate into EP programs at power reactors. BL-05-02 also sought to obtain information from licensees on their actions taken to implement Order EA-02-026 and to modify their EP programs to adjust to the current threat environment. Based on the results of the post BL-05-02 inspections, meetings with members of the nuclear power industry, and licensees' responses to BL-05-02, the NRC determined that licensees were implementing strategies to satisfy Order EA-02-026 and enhance their programs to address the changed threat environment.

The NRC staff provided the results of its review to the Commission in SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance," dated September 20, 2006. In that paper, the NRC staff discussed the activities it had conducted to complete its review and recommended rulemaking for enhancements to the EP program. The staff divided the potential enhancements into two categories: security-related EP issues and other EP issues. The NRC staff evaluated each issue and assigned it a priority of high, medium, or low based on an analysis of the issue's relationship to reactor safety, physical security, EP, NRC strategic goals of openness and effectiveness, and stakeholder impact. The NRC staff identified 12 issues with a high priority, including six security-related EP issues and six non-security-related EP issues. The NRC staff recommended that the Commission approve rulemaking as the most effective and efficient means to ensure that the high priority EP issues were resolved with an opportunity for participation by all interested stakeholders.

In its SRM to SECY-06-0200, dated January 8, 2007, the Commission approved the NRC staff's recommendation to pursue rulemaking and guidance changes for enhancements to

the EP program. On April 17, 2007, the staff provided its rulemaking plan to the Commission via a memorandum.

On January 9, 2009, the NRC staff provided the proposed rule to the Commission in SECY-09-0007, "Proposed Rule Related to Enhancements to Emergency Preparedness Regulations (10 CFR Part 50)." In its SRM to SECY-09-0007, dated April 16, 2009, the Commission approved the publication of the proposed rule. The NRC published the proposed rule on the enhancements to EP regulations for public comment in the *Federal Register* on May 18, 2009 (74 FR 23254). Because it received several requests to lengthen the public comment period, the NRC extended the deadline for the public comment period from August 3, 2009, to October 19, 2009. During the public comment period, the NRC and the Federal Emergency Management Agency (FEMA) jointly held 11 public meetings to discuss the proposed rule and related guidance documents. The NRC received a total of 94 submittals and from these submittals, 687 individual comments were identified.

On December 8, 2009, NRC and FEMA staff briefed the Commission on the status of the EP rulemaking and comments received during the public comment period. In addition, a panel of external stakeholders briefed the Commission on their comments and views regarding the proposed rule. In SRM-M091208, "Staff Requirements – Briefing on the Proposed Rule: Enhancements to Emergency Preparedness Regulations, 9:30 A.M., Tuesday, December 8, 2009, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated January 13, 2010, the Commission directed the NRC staff to continue working with FEMA in considering comments from State and local officials, and other interested stakeholders, to enhance the EP regulations and guidance. The Commission also directed the NRC staff to address the impacts of the rule and to consider providing a public draft of the rule language and guidance documents via the NRC public website while working with the Advisory Committee on Reactor Safeguards on the draft final rule.

On November 15, 2010, the NRC and FEMA held a public meeting to discuss the proposed implementation dates for the final EP rule. The feedback from this meeting, as well as all the previous interactions, informed the NRC's schedule for the implementation of the new EP requirements.

DISCUSSION OF CHANGES:

The amendments to the EP requirements resulted in changes to the following existing sections and appendices in 10 CFR Parts 50 and 52:

- 10 CFR 50.47, "Emergency Plans"
- 10 CFR 50.54, "Conditions of Licenses"
- 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities"
- 10 CFR 52.79, "Contents of Applications; Technical Information in Final Safety Analysis Report"

The final rule contains 12 amendments that will require 10 CFR Part 50 licensees that are currently subject to the EP requirements to ensure that their EP programs meet the EP requirements in the final rule. The final rule similarly applies to certain applicants for construction permits under Part 50 with respect to their discussion of preliminary plans for coping with emergencies (§ 50.34(a)(10)), operating licenses under Part 50 (§ 50.34(b)(6)(v)), early site permits under Part 52 that choose to propose either major features of an, or a complete and integrated, emergency plan (§ 52.17(b)(2)), and combined licenses under Part 52 (§ 52.79(a)(21)). The first six amendments are security-related EP issues associated with Order EA-02-026 or BL 05-02, five amendments are non-security-related EP issues resulting from the comprehensive review of EP regulations and guidance, and one amendment is administrative.

1. On-Shift Staffing Analysis – The final rule requires nuclear power reactor licensees to perform a staffing analysis of on-shift personnel assigned emergency response duties to ensure that these emergency responders do not become overburdened during an emergency event. Section IV.A of Appendix E to 10 CFR Part 50 incorporates this requirement.
2. Emergency Action Levels (EALs) for Hostile Action – The final rule amends the regulations to require nuclear power reactor licensees to have EALs for events involving hostile action. Section IV.B of Appendix E to 10 CFR Part 50 incorporates this requirement.
3. Emergency Response Organization (ERO) Augmentation and Alternate Facilities – The final rule amends the regulations to require nuclear power reactor licensees to identify alternative facilities to support ERO augmentation during hostile action. This codifies the Order EA-02-026 requirements and the enhancement examples described in BL-05-02. Section IV.E of Appendix E to 10 CFR Part 50 incorporates this requirement.
4. Licensee Coordination with Offsite Response Organizations (OROs) During Hostile Action – The final rule amends the regulations to require licensees to identify and describe the assistance expected from ORO resources during an emergency, including hostile action. Section IV.A.7 of Appendix E to 10 CFR Part 50 incorporates this requirement.
5. Protection for Onsite Personnel – The final rule amends the regulations to require specific emergency plan provisions to protect onsite emergency responders and other onsite personnel in emergencies resulting from hostile action at nuclear power plants. The NRC created a new Section IV.I to incorporate this requirement in Appendix E to 10 CFR Part 50.

6. Challenging Drills and Exercises – The final rule amends the regulations to require licensees to include hostile action scenarios and other scenario variations in drills and exercises and to submit the scenarios for NRC review. The final rule also increases the exercise cycle from six to eight years to allow more flexibility in varying scenarios. Section IV.F of Appendix E to 10 CFR Part 50 incorporates these requirements.
7. Alert and Notification System (ANS) Backup Means – The final rule amends the regulations to require that backup measures for the alert and notification system be available. The backup measures would be implemented if the primary means of alerting and notification were unavailable during an emergency. Section IV.D of Appendix E to 10 CFR Part 50 incorporates this requirement.
8. Emergency Declaration Timeliness – The final rule amends the regulations to ensure that licensees have the capability to complete the emergency declaration within 15 minutes in the event of a radiological emergency. Section IV.C of Appendix E to 10 CFR Part 50 incorporates this requirement.
9. Emergency Operations Facility (EOF) – Performance-Based Approach – The final rule amends the regulations to provide performance-based criteria for EOFs. The regulations were also revised to remove the references to an EOF as a “near-site” facility and to incorporate specific EOF distance criteria in relation to a nuclear power plant site into the regulations. The regulations at 10 CFR 50.47(b)(3), 10 CFR 50.47(d)(1), and 10 CFR 50.54(gg)(1)(i) and Sections II, IV.E.8, IV.E.9.c, and IV.E.9.d of Appendix E to 10 CFR Part 50 incorporate these requirements.
10. Evacuation Time Estimate (ETE) Updating – The final rule amends the regulations to require licensees to review and update ETEs periodically. The regulation at 10 CFR 50.47(b)(10) and Section IV of Appendix E to 10 CFR Part 50 incorporate these requirements.

11. Amended Emergency Plan Change Process – The final rule ensures that (1) the effectiveness of the emergency plans is maintained, (2) changes to the approved emergency plan are properly evaluated, and (3) any change that reduces the effectiveness of the plan is reviewed by the NRC before implementation. The regulation at 10 CFR 50.54(q) and Section IV.B of Appendix E to 10 CFR Part 50 incorporate these requirements.
12. Removal of Completed One-Time Requirements – The final rule eliminates several regulatory provisions that required holders of licenses to take certain one-time actions to improve the state of EP following the Three Mile Island incident in 1979. These actions are complete and the requirements are no longer binding on any current licensee. The NRC removed the completed one-time requirements from 10 CFR 50.54(r), 10 CFR 50.54(s)(1), 10 CFR 50.54(s)(2)(i), and 10 CFR 50.54(u).

ENVIRONMENTAL ASSESSMENT

Identification of the Final Action:

The final action amends requirements for nuclear power reactor licensees to aid in ensuring more effective emergency plan implementation for potential events, including hostile actions taken against the site, and to codify enhancements to the regulations.

The Need for the Final Action:

Following the terrorist events of September 11, 2001, the NRC staff reviewed the EP program and concluded that the EP planning basis remained valid. However, the NRC determined that security events differ from accident events and that the EP regulations and guidance should be enhanced to ensure that licensees can implement their emergency plan in any circumstance, including hostile action, so that licensees continue to provide reasonable assurance of adequate protection of public health, safety, and the environment. The NRC staff conducted a

comprehensive review of the EP regulatory structure, including reviews of regulations and guidance documents. The comprehensive review of the EP program identified several areas where the implementation of EP regulations and guidance, recent technological advances, and lessons learned from actual events, drills, and exercises had revealed to the NRC areas for potential improvement and increased clarity for the EP program.

Environmental Impacts of the Rule Action

Under the final rule requirements, licensees will continue to provide reasonable assurance of adequate protection of the environment because the process, personnel, and equipment involved will remain essentially the same as those used under the existing EP requirements.

The final rule action results in modification of certain licensee EP procedures, drills, and exercises; EALs must include consideration of potential hostile actions; and backup methods are in place for the primary ANS. The rule action also changes the requirement that certain emergency response facilities be located near the licensee's reactor and that licensees should have alternative facilities designated for use during hostile action when onsite emergency facilities may not be safely accessed. Any new building or structure that may be erected by the licensee for use as an alternative facility will be subject to State and/or local building codes. These building codes are designed to protect the public's safety and general welfare related to the construction and occupancy of buildings and structures. The changes to facilities, procedures, drills, and exercises that will result from the rule action will enhance the ability of licensees to implement their EP programs in any circumstance.

The NRC staff has completed its evaluation of the final rule action and concludes that the final action will not have a significant radiological environmental impact for the following reasons:

- (1) The EP requirements in the final rule will not increase the probability or consequences of an accident because the process, personnel, and equipment involved in implementing the licensee's emergency plan will be essentially the same as those used under the existing EP requirements and will continue to require licensees to provide reasonable assurance of adequate protection of public health, safety, and the environment in implementing their EP programs. The changes to facilities, procedures, drills, and exercises that will result from the rule action will provide reasonable assurance that licensees can implement their EP programs in any circumstance.
- (2) The EP requirements in the final rule will not alter the types or quantities of radiological effluents, because the rule action will result in licensees implementing their EP program using essentially the same processes, personnel, and equipment as those used under their existing EP programs and will not change the current radiological effluent production and flow paths. The changes to facilities, procedures, drills, and exercises that will result from the rule action will provide reasonable assurance that licensees can implement their EP programs in any circumstance.
- (3) The EP requirements in the final rule will not increase occupational or public radiation exposure because licensees will continue to provide the existing level of reasonable assurance of adequate protection of public health, safety, and the environment as the existing EP program. The changes to facilities, procedures, drills, and exercises that will result from the rule action will better ensure that licensees can implement their EP programs in any circumstance.

The NRC also concludes that the rule action will not have a significant non-radiological impact for the following reasons:

- (1) The EP requirements in the final rule do not have the potential to impact any historic sites because the process, personnel, and equipment involved will be essentially the

same as those used under the existing EP requirements and will continue to require licensees to ensure adequate protection of public health, safety, and the environment in implementing their EP programs. Thus, the NRC determined that the final rule action will not have the potential to impact any historic sites.

- (2) The EP requirements in the final rule will not significantly alter the types or quantities of non-radiological plant effluents because the process, personnel, and equipment involved will be essentially the same as those used under the existing EP requirements and will continue to require licensees to ensure adequate protection of public health, safety, and the environment in implementing their EP programs. The changes to facilities, procedures, drills, and exercises that will result from the rule action will better ensure that licensees can implement their EP programs in any circumstance. Thus, the NRC determined that the final rule action will not change the non-radiological effluent production and flow paths.

Accordingly, the NRC concludes that the rule action will not have any significant radiological or non-radiological environmental impacts.

Environmental Impacts of Alternatives to the Rule Action

As an alternate to the final action, the NRC staff considered the no-action alternative. Maintaining the status quo (not revising 10 CFR 50.47, 10 CFR 50.54, Appendix E to 10 CFR Part 50, and 10 CFR 52.79(a)(17)) would result in no change in the environmental impacts of the current EP programs.

Agencies and Persons Consulted

The NRC sent a copy of the proposed rule and the draft environmental assessment to every State Liaison Officer and no comments on the environmental assessment were received.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the final action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the final action.

For further details with respect to the final action, see the final rule dated **[INSERT THE DATE OF THE FEDERAL REGISTER NOTICE]**. Documents may be examined and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) on the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>. Documents can also be access through the Federal e-Rulemaking Portal: <http://www.regulations.gov>, Docket ID: NRC-2008-0122. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff at 1-800-397-4209, or 301-415-4737, or send an e-mail to pdr.resource@nrc.gov.

**Summary of Public Comments Received on Proposed Revisions
to 10 CFR Parts 50 and 52
Enhancements to Emergency Preparedness Regulations**

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Office of Nuclear Security and Incident Response

[Insert Date]



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List of Acronyms

ACE	Alliance for Clean Energy
ANS	Alert and notification system
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
COL	Combined license
DBA	Design basis accident
DBT	Design basis threat
DHS	Department of Homeland Security
DPR	Division of Preparedness and Response
EAL	Emergency action level
EAS	Emergency alert system
ECL	Emergency classification level
ENS	Emergency notification system
EOC	Emergency operations center
EOF	Emergency operations facility
EP	Emergency preparedness
EPZ	Emergency planning zone
ERF	Emergency response facility
ERPA	Emergency response planning area
ERO	Emergency response organization
ESP	Early site permit
ETE	Evacuation time estimate
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FENOC	FirstEnergy Nuclear Operating Company
FOF	Force on force
FRN	Federal Register Notice
FSAR	Final safety analysis report
GE	General Emergency
HAB	Hostile action-based
HCM	Highway Capacity Manual
HP	Health Physics
HSEEP	Homeland Security Exercise Evaluation Program
HSPD	Homeland Security Presidential Directive
ICS	Incident Command System
INPO	Institute of Nuclear Power Operations
IPAWS	Integrated Public Alert and Warning System
ISG	Interim staff guidance
I&C	Instrumentation and control
JIC	Joint information center
JTA	Job/task analysis
KI	Potassium iodide
LERF	Large early release frequency
LLEA	Local law enforcement agency
LOA	Letter of agreement

List of Acronyms (continued)

LOS	Level of service
MACCS2	MELCOR Accident Consequence Code System, version 2
MOU	Memorandum of understanding
NEI	Nuclear Energy Institute
NIMS	National Incident Management System
NOUE	Notification of Unusual Event
NPP	Nuclear power plant
NRC	Nuclear Regulatory Commission
NSHC	No significant hazard consideration
NSIR	Nuclear Security and Incident Response
OMB	Office of Management and Budget
ORO	Offsite response organization
OSC	Operations support center
PAG	Protective action guide
PAR	Protective action recommendation
PI	Performance indicator
REP	Radiological emergency preparedness
RG	Regulatory guide
ROP	Reactor Oversight Process
RPV	Reactor pressure vessel
RTR	Research and test reactor
SAE	Site Area Emergency
SNL	Sandia National Laboratories
SOARCA	State-of-the-Art Reactor Consequence Analyses
SOC	Statement of considerations
STARS	Strategic Teaming and Resource Sharing
TSC	Technical support center

Introduction

On May 18, 2009, the Nuclear Regulatory Commission (NRC) published a request for comments on “Enhancements to Emergency Preparedness Regulations; Proposed Rule” in the *Federal Register* (74 FR 23254). On the same day, the NRC published a request for comments on several draft guidance documents on the proposed rule’s docket (Docket No. NRC-2008-0122) at www.regulations.gov, including:

- NSIR/DPR-ISG-01, “Interim Staff Guidance Emergency Planning for Nuclear Power Plants;”
- DG-1237, “Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors;” and
- NUREG/CR-7002, “Criteria for Development of Evacuation Time Estimates.”

Similarly, on May 18, 2009, the Federal Emergency Management Agency (FEMA) published in the *Federal Register* a request for comments on FEMA’s proposed Radiological Emergency Preparedness Program (REPP) Manual and proposed NUREG–0654/FEMA–REP–1, Rev. 1, Supplement 4.

Following the publication of these documents, the NRC and FEMA jointly conducted 11 public meetings in six different cities between June 2 and June 23, 2009. One additional public meeting was held by the NRC in Rockville, MD on September 17, 2009. At these meetings, the NRC introduced the proposed emergency preparedness (EP) requirements and associated onsite EP guidance documents, and answered questions from the meeting attendees. The NRC did not request or accept oral public comments at these meetings.

The NRC received 94 comment submissions¹ in response to its May 18, 2009 *Federal Register* notices. Some comments received by FEMA in response to the request for comments on FEMA’s proposed REPP Manual and proposed NUREG–0654/FEMA–REP–1, Rev. 1, Supplement 4, concerned NRC-jurisdictional EP issues. The NRC and FEMA determined that these comments should be addressed by the NRC. As a result, these comments were transferred to the NRC for resolution. Similarly, some comments received by the NRC concerned FEMA-jurisdictional issues and were transferred to FEMA for resolution and appear in FEMA’s comment resolution document associated with the REPP Manual and NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 4.

This comment summary document addresses NRC-jurisdictional comments submitted to the NRC in writing by October 29, 2009, as well as NRC-jurisdictional comments submitted in writing to FEMA.

Exhibit 1 shows the name, comment letter number, and organization of each individual that submitted a comment letter on the proposed regulations and draft guidance documents. This summary document references comments letters by comment letter ID number. For example,

¹ This document distinguishes between comment letters and comments. A comment letter is a single submission that contains one or more comments (also referred to as comment excerpts).

[0064] refers to comment ID number 0064 submitted by Kevin Leuer of Minnesota Homeland Security and Emergency Management. The comment letter ID number corresponds to the last four digits of the document ID as posted on www.regulations.gov. Because the comment summary document addresses a few comment excerpts received by FEMA, Exhibit 1 also shows the name, comment letter ID number, and organization of the individuals who submitted comment letters addressing NRC-jurisdictional issues to FEMA.

Exhibit 1: List of Comment Letters on Docket No. NRC-2008-0122

Comment Letter ID	Commenter Name	Commenter Organization
0025	Martin Vyenielo	Pennsylvania Department of Environmental Protection Bureau of Radiation Protection
0026	Alan Nelson	Nuclear Energy Institute (NEI)
0027	Richard Mothena	FPL
0028	Kevin Leuer	Minnesota Homeland Security and Emergency Management
0029	Jonathan Schwarz	Nebraska Emergency Management Agency
0030	John W. Pitesa	Duke Energy
0031	Robert Jelacic	West Virginia Radiological Emergency Preparedness
0032	Fred C. Mashburn	Tennessee Valley Authority
0035	Stephen Payne	North Carolina Division of Emergency Management
0036	Michael M. Cline	Virginia Department of Emergency Management
0037	Paul D. Parmenter	Missouri Emergency Management Agency
0038	Ernest Moore	South Carolina Military Department
0039	Thomas A. Conley	Kansas Department of Health and Environment
0040	Robert Cole	Nemaha County Emergency Management Agency
0042	John S. Fuoto	AMEC Earth and Environmental, Inc.
0043	James Foster	None given
0044	Dr. John Dwyer	Stone Crab Alliance
0045	James Foster	NEI Task Force
0046	James Foster	NEI Task Force
0047	Lewis Lacy	Nye County, Nevada Nuclear Waste Repository Project Office
0048	Herschel Specter	RBR Consultants, Inc.
0049	Eric Schrader	USNRC
0050	Steve Reese	Oregon State University Radiation Center
0051	Ralph A. Butler	University of Missouri
0052	Matthew Straeb	Global Security Systems, LLC
0053	Lewis Cuthbert	The Alliance for a Clean Environment (ACE)
0056	Kathy Hougen	None given
0057	Kathy Hougen	None given
0059	Kevin Leuer	Minnesota Homeland Security and Emergency Management
0060	George R. Sabo	Ashtabula County, Ohio Emergency Management Agency
0061	Anonymous	None given
0062	J. Frank Price	Alabama Emergency Management Agency
0063	Douglas R. Fleck	None given

Comment Letter ID	Commenter Name	Commenter Organization
0064	Kevin Leuer	Minnesota Homeland Security and Emergency Management
0065	Neil Batista	Miami-Dade Department of Emergency Management
0066	Randolph Sullivan	None given
0067	Mike Rose	San Onofre Nuclear Generating Station Interjurisdictional Planning Committee
0068	David Allard	Pennsylvania Department of Environmental Protection Bureau of Radiation Protection
0069	Andrew Velasquez	Illinois Emergency Management Agency
0070	Scott D. Portzline	Three Mile Island Alert
0071	Judge Nate McDonald	Matagorda County, Texas
0072	Mary Lampert	Pilgrim Watch, et al
0073	Bruce House	Tennessee Department of Environment and Conservation
0074	Thomas Myers	National Institute of Standards and Technology
0075	Thomas Joyce	PSEG Nuclear LLC
0076	T.A. Henderson	First Energy Nuclear Operating Company (FENOC)
0077	George R. Sabo	Ashtabula County, Ohio Emergency Management Agency
0078	Kevin Leuer	Minnesota Homeland Security and Emergency Management
0079	Kevin Leuer	Minnesota Homeland Security and Emergency Management
0082	John H. Campbell	State of Missouri
0083	Janice A. Dean	Environmental Protection Bureau, Office of the New York State Attorney General
0084	Jay Maisler	ENERCON
0085	Bill Potter	California Emergency Management Agency
0087	Jeffrey B. Archie	South Carolina Electric & Gas Company
0088	Richard Webster	Hudson River Sloop Clearwater, Inc.
0089	D. Hooper	Strategic Teaming and Resource Sharing (STARS)
0090	John F. McCann	Entergy Nuclear Operations
0091	McHenry Cornell	Florida Power & Light Company
0092	Christopher E. Boone	Southern Nuclear Operating Company
0093	Charles R. Pierce	Southern Nuclear Operating Company
0094	Gabor Salamon	Xcel Energy
0095	Richard B. Ennis	None given
0096	David Halstead	Florida Division of Emergency Management
0097	Mario H. Fontana, PhD, PE	University of Tennessee

Comment Letter ID	Commenter Name	Commenter Organization
0098	Atri Sen	IEM, Inc.
0099	Jeffrey A. Reinhart	Omaha Public Power District
0100	Jonathan Schwarz	Nebraska Emergency Management Agency
0101	John W. Pitesa	Duke Energy
0102	Alex Marion	Nuclear Energy Institute
0103	Timothy Rausch	PPL Susquehanna, TLC
0104	D.P. Helker	Exelon Nuclear
0105	Brian McCabe	Progress Energy
0106	Edward S. Gray	None given
0107	Elaine Wathen	North Carolina Division of Emergency Management
0108	Rochelle Becker	Alliance for Nuclear Responsibility
0109	Deborah Brancato	Riverkeeper, Inc.
0110	Brian McCabe	Progress Energy
0111	McHenry Cornell	Florida Power & Light Company
0112	Kevin Weinisch	KLD Associates, Inc.
0113	D. Hooper	Strategic Teaming and Resource Sharing (STARS)
0114	Brian McCabe	Progress Energy
0115	John F. McCann	Entergy Nuclear Operations
0118	D. Hooper	Strategic Teaming and Resource Sharing (STARS)
0119	Deborah Brancato	Riverkeeper, Inc.
0120	McHenry Cornell	Florida Power & Light Company
0121	Kevin Weinisch	KLD Associates, Inc.
0122	Kevin Weinisch	KLD Associates, Inc.
0123	Kevin Weinisch	KLD Associates, Inc.
0124	Kevin Weinisch	KLD Associates, Inc.
0125	Kevin Weinisch	KLD Associates, Inc.
0126	Kevin Weinisch	KLD Associates, Inc.
0127	Kevin Weinisch	KLD Associates, Inc.
0128	Kevin Weinisch	KLD Associates, Inc.
0129	Atri Sen	IEM, Inc.
0130	Atri Sen	IEM, Inc.
0131	D. Hooper	Strategic Teaming and Resource Sharing (STARS)
0132	McHenry Cornell	Florida Power & Light Company
0133	Deborah Brancato	Riverkeeper, Inc.
0134	John F. McCann	Entergy Nuclear Operations

Comment Letter ID	Commenter Name	Commenter Organization
0135	Paul Blasioli	Dominion Resources Services
FEMA-2008-0022-0044	Lewis Cuthbert	Alliance For A Clean Environment
FEMA-2008-0022-0048	Kevin Leuer	Minnesota Homeland Security and Emergency Management
FEMA-2008-0022-0050	Kevin Leuer	Minnesota Homeland Security and Emergency Management
FEMA-2008-0022-0059	Kevin Leuer	Minnesota Homeland Security and Emergency Management
FEMA-2008-0022-0078	Kevin Leuer	Minnesota Homeland Security and Emergency Management
FEMA-2008-0022-0079	James Turner	Delaware Emergency Management Agency
FEMA-2008-0022-0086	Mary Louise Meisenzahl	Monroe County, New York Office of Emergency Management
FEMA-2008-0022-0101	Michael Younger	Florida Division of Emergency Management
FEMA-2008-0022-0108	Cheryl Chubb	Louisiana Department of Environmental Quality
FEMA-2008-0022-0110	J. Frank Price	Alabama Emergency Management Agency
FEMA-2008-0022-0122	James Porcello	Emergency Management and Homeland Security Division
FEMA-2008-0022-0125	Eric Hoerner	Cumberland County Department of Public Safety

Some of the comment letters listed above contain only comment excerpts that are identical to comment excerpts from the same commenter in another submission. A few of the comment letters listed above are completely identical to other comment letters submitted by the same commenter, and other comment letters listed above are non-identical letters with the same substantive arguments as other comment letters from the same commenter. In each of the instances, the summaries in this document cite only one comment letter ID number per commenter. For example, comment letters [0064] and [0079] contain identical comment excerpts. The summary of a comment excerpt made in both submissions is cited only to the referenced submission. Exhibit 2 lists the submissions that are duplicative comment letters, comment letters with identical comment excerpts, and non-identical letters with the same substantive arguments as the referenced comment letters, and identifies the referenced comment letter ID number used in this document for citation to each letter. If the commenter submitted two or more identical comment letters, the referenced comment letter ID number is the lowest sequential comment letter number among the identical comment letters. However, where one comment letter contains only an excerpt that is identical to, or contains the same substantive argument as, another letter from the same commenter, the comment letter ID number of the more comprehensive comment letter serves as the referenced comment letter ID number.

Exhibit 2: List of Comment Letters With Identical Comment Excerpts

Referenced Comment Letter ID	Identical Comment Letter ID(s)*	Commenter Name	Commenter Organization
0043	0045 0046	James Foster	NEI Task Force
0053	FEMA-2008-0022-0044	Lewis Cuthbert	The Alliance for a Clean Environment (ACE)
0060	0077	George R. Sabo	Ashtabula County, Ohio Emergency Management Agency
0064	0059 0078 0079 FEMA-2008-0022-0048 FEMA-2008-0022-0050 FEMA-2008-0022-0059 FEMA-2008-0022-0078	Kevin Leuer	Minnesota Homeland Security and Emergency Management
0089	0113 0118 0131	D. Hooper	Strategic Teaming and Resource Sharing (STARS)
0091	0111 0120 0132	McHenry Cornell	Florida Power & Light Company
0109	0119 0133	Deborah Brancato	Riverkeeper, Inc.
0090	0115 0134	John F. McCann	Entergy Nuclear Operations
0130	0129	Atri Sen	IEM, Inc.

* The comment excerpts in each identical comment letter appear in the referenced comment letter. However, the identical comment letters may represent only a portion of the referenced comment letter. The identical comment letters contain substantively identical arguments to the referenced comment letter, but may have slight wording differences.

One commenter provided non-identical submissions that contained some substantively identical comment excerpts. For comment excerpts contained in multiple non-identical submissions, this document references only the first submission in which the comment excerpt appears. Specifically, in comment letter [0062], some comment excerpts are the same as those in comment letter [FEMA-2008-0022-0110]. For each of these comment excerpts, this document cites only comment letter [0062]. However, comment excerpts in comment letter [FEMA-2008-0022-0110] that do not appear in comment letter [0062] are cited to comment letter [FEMA-2008-0022-0110]. Exhibit 3 lists the comment letters that are non-identical but contain some of the same comment excerpts and identifies the referenced comment letter ID number.

Exhibit 3: List of Non-Identical Comment Letters

Referenced Comment Letter ID	Non-Identical Comment Letter ID	Commenter Name	Commenter Organization
0062	FEMA-2008-0022-0110	J. Frank Price	Alabama Emergency Management Agency

1. General Issues

1.1 Support

General Support

Comments: Two commenters stated that the proposed rule changes and guidance will be an improvement over the current situation. [0069, 0088]

NRC Response: No response is necessary.

1.2 Oppose

The Proposed Rule is Unnecessary

Comments: Three commenters stated that the proposed regulations are unnecessary because current regulations adequately protect public health and safety. [0063, 0076, 0106] One commenter claimed that the goal of the proposed rulemaking is to institute regulatory requirements, rather than to address specific deficiencies in the current emergency planning process. [0084] One commenter contended that FEMA provides sufficient oversight for offsite response organizations (OROs) and that those organizations do not need another federal agency “looking over their shoulder.” [0106] Another commenter argued that nuclear power plants (NPPs) pose minimal health risks and that emergency planning requirements have very little risk reduction potential. [0048]

NRC Response: The NRC disagrees in part with the commenters. The NRC agrees that the implementation of its EP regulations existing when the proposed rule was issued adequately protects public health and safety, but the rule changes are necessary to ensure new security-related EP requirements are consistently implemented by current and future licensees, to address participant preconditioning in drills and exercises, and to address other issues identified during EP program reviews, EP program implementation, and new reactor application reviews. No change was made to the final rule in response to these comments. The comment regarding FEMA’s oversight role for OROs and no need for another Federal agency to perform this role is addressed in Section 3.4, “Licensee Coordination with OROs During Hostile Action Events,” of the comment summary.

The Proposed Rule is Too Broad or Burdensome

Comments: One commenter argued that the proposed rulemaking exceeds the purpose of NRC Order EA-02-026. [0084] Another commenter argued that the NRC should simplify emergency planning requirements due to their limited potential benefits. [0048] Three commenters claimed that the proposed regulations and guidance impose a significant burden that the rule’s potential benefits do not justify. [0071, 0076, 0084]

NRC Response: The NRC disagrees with the commenters. The purpose of Order EA-02-026 was to require licensees to implement interim compensatory measures deemed necessary for addressing situations at NPPs that could involve hostile action following the events of September 11, 2001. These measures included several EP-related actions, such as identifying alternative facilities capable of supporting emergency response, conducting a review of staffing

to ensure that collateral duties were not assigned to responders that would prevent effective emergency response, and implementing site-specific hostile action emergency action levels (EALs). The rule changes regarding security-related EP issues are consistent with the intent of the NRC order (and subsequent generic communications such as NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events"). Comments on the potential burden and benefits that would be created by the rule are addressed in Section 5.3, "Regulatory Analysis," of the comment summary. No change was made to the final rule in response to these comments.

The Proposed Rule Does Not Sufficiently Address Health and Safety Concerns

Comments: Four commenters claimed that the proposed regulations do not adequately address public health and safety concerns [0053, 0072, 0088, 0109]; two of them argued that the proposed regulations allow industry cost concerns to supersede these public concerns. [0053, 0072] One commenter suggested that the NRC focused excessively on hostile action and certain non-security issues, and did not pay enough attention to underlying assumptions in current emergency planning. [0072]

NRC Response: The NRC disagrees with the commenters. As stated in the proposed rule, the NRC concluded that the implementation of its EP regulations existing when the proposed rule was issued ensures the adequate protection of public health and safety. The rule changes provide for enhancements to EP regulations to address specific topics and issues. These topics were identified as the top priority issues for EP rulemaking by the Commission. Because the NRC has determined that the amendments would not be necessary to ensure adequate protection of public health and safety or common defense and security, the NRC has considered costs in evaluating the amendments. Comments on the potential burden and benefits that would be created by the rule are addressed in Section 5.3, "Regulatory Analysis," of the comment summary. No change was made to the final rule in response to these comments.

1.3 Legal Basis

No comments generically addressed the legal basis of the proposed rule.

1.4 Technical Basis

Additional Quantitative Data Is Needed to Justify the Rulemaking

Comments: Two commenters argued that the NRC did not present or consider enough quantitative data to support the rulemaking. [0048, 0084] One of the commenters cited a statement by NRC Chairman Jaczko recommending greater use of quantitative data. [0048] The same commenter argued that the NRC should conduct quantitative analyses for a variety of potential hostile actions and develop specific emergency responses to each type of situation. [0048] The other commenter stated that the few examples that the NRC does present to support its decisions represent a limited sample of mostly outdated data and information. [0084]

NRC Response: The NRC disagrees with the commenters. Quantitative data was considered when available for a specific rulemaking topic. Use of data developed through new quantitative analyses may be considered in any future rulemaking. Examples used for other rulemaking topics, such as challenging drills and exercises, are based on several years of results, findings,

and lessons learned documented in NRC inspection reports, exercise reports, Department of Homeland Security (DHS) comprehensive reviews, and NRC generic communications. In many cases, only a few selected examples were discussed in the Statement of Considerations (SOC) for the proposed rule. No change was made to the final rule in response to these comments.

Comments: One commenter stated that the NRC needs to consider the “best science” available to inform its emergency preparedness rulemaking. [0048] In that vein, several commenters suggested specific data sources that the NRC should consider. Four commenters recommended that the NRC consider the results of research conducted at Sandia National Laboratories (SNL) as part of the State-of-the-Art Reactor Consequence Analyses (SOARCA) program. [0048, 0069, 0090, 0097] One of these commenters pointed out two specific conclusions of the SOARCA program that were made public on March 11, 2009: Large Early Release Frequency (LERF) should not be included in unmitigated sensitivity cases, and actual releases are much smaller and more delayed than the results of the 1982 Siting Study indicated. [0069] Another commenter agreed that SOARCA data had revealed smaller releases over longer release times than previous studies had estimated. [0097] One commenter suggested that the NRC support its use of SOARCA data with an explanation of the SOARCA program, comparing its methods and conclusions with previous accident consequence studies. [0090]

NRC Response: The NRC agrees in part with the commenters. Greater use of quantitative data may be considered to support future EP rulemaking activities. However, the SOARCA study is currently under review and the results were not used as the basis for changes to EP regulations in this rulemaking. No change was made to the final rule in response to these comments.

Comment: Commenters also suggested that the NRC consider data and information from: an RBR Consultants, Inc. traffic analysis [0048]; the MELCOR Accident Consequence Code System (MACCS2) consequence analyses [0048]; industry experience dealing with Hurricanes Katrina and Rita [0084]; NRC inspection data [0084]; and industry performance data from drills, exercises, and real events, especially any data with regards to hostile action. [0084]

NRC Response: The NRC disagrees in part with the commenters. The RBR analysis is being considered in studies the NRC staff is conducting to determine if a risk informed and performance based regulatory structure is feasible for oversight of EP. This work is just beginning and was not considered in this rulemaking. The MELCOR code is a probabilistic risk tool for estimating health consequences from hypothetical accidents. It was not used in this rulemaking but is being used in other studies conducted by the staff. The NRC studied the responses to Hurricanes Katrina and Rita and compared those responses to the current EP regulatory structure. That work can be found in NUREG/CR-6981, “Assessment of Emergency Response Planning and Implementation for Large Scale Evacuations.” The staff found that the state of EP at NPPs compared favorably to that in place at the time of the evacuations studied. As stated in the proposed rule SOC, regulatory experience gained through inspection and performance indicators led to and/or supported some of the rule changes. No change was made to the final rule in response to these comments.

2. Specific Request for Comments

2.1 *Whether the NRC should issue regulations requiring that licensees train responders and implement the National Incident Management System (NIMS)/Incident Command System (ICS) to improve the interface with OROs*

Support for a Requirement That Licensees Implement NIMS and ICS

Comments: Eight commenters favored a requirement that licensees implement NIMS and ICS. [0047, 0062, 0064, 0068, 0084, FEMA-2008-0022-0086, FEMA-2008-0022-0108, FEMA-2008-0022-0122] One commenter stated that NRC's requirements should be consistent with those stipulated by the radiological emergency preparedness (REP) program, Homeland Security Presidential Directive 5 (HSPD-5), and the Occupational Safety and Health Administration (OSHA)—each of which requires, or will require, NIMS and ICS. [FEMA-2008-0022-0110] One commenter stated that the requirements should apply to both reactor and non-reactor licensees. [0047] One commenter interpreted the purpose of the rule to be to implement NIMS, ICS, and the Homeland Security Exercise Evaluation Program (HSEEP), and pointed out that the rule changes do not achieve that goal. [0062] Six of the commenters agreed that the NIMS and ICS requirements would improve communication between onsite and OROs. [0047, 0064, 0068, 0084, FEMA-2008-0022-0108, FEMA-2008-0022-0122] One of those commenters stated that without the imposition of NIMS requirements, licensees would have too much discretion as to which emergency plan changes to communicate with offsite agencies. [0047] One commenter stated that if the NRC does not require licensees to implement NIMS and ICS, it should at least require licensee emergency response organizations (EROs) to have a basic awareness of the NIMS/ICS concepts and interfaces. [FEMA-2008-0022-0086] Another commenter suggested that the NRC add references to NIMS and ICS in Section II of NUREG-0654, and that licensees consider NIMS and ICS in their ERO structure. [0135]

NRC Response: The NRC disagrees with the commenters and is not requiring its licensees to implement NIMS/ICS or any specific incident management system. The NRC's position regarding NIMS/ICS is consistent with HSPD-5 directives to DHS that the use of NIMS/ICS is voluntary for the private sector. NIMS/ICS is designed to aid private sector stakeholders involved in domestic incident management activities to the degree that they are willing to embrace the potential benefits of the systems.

The NRC recognizes the benefits that its licensees may gain by incorporating elements of NIMS/ICS into their programs to enhance incident response management. However, the NRC is not requiring implementation of them because specifically making NIMS/ICS a requirement is not necessary to achieve this goal. The NRC's regulations in 10 CFR 50.47(b) and 10 CFR Part 50, Appendix E, as amended by the final rule, address coordination between onsite EROs and OROs. Section 50.47(b)(1) states in part that "Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, [and] the emergency responsibilities of the various supporting organizations have been specifically established." Section 50.47(b)(3) states in part that "Arrangements for requesting and effectively using assistance resources have been made." Section 50.47(b)(6) requires licensees to have the ability to communicate with OROs. Section IV.A.7 in Appendix E, as amended by the final rule, requires licensees to include in their

emergency plans the “[i]dentification of, and a description of the assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site.” Section IV.F.2.i in Appendix E, as amended by the final rule, requires that “Exercise and drill scenarios as appropriate must emphasize coordination among onsite and offsite response organizations.” As a result, integration of onsite ERO activities with OROs becomes a reality, regardless of the incident management system in use.

Although the NRC disagrees with making NIMS/ICS a required framework for licensees to work with OROs to manage incidents at NPP sites, it agrees that licensees and OROs should have a common framework for incident response management. In addition, utilities should be familiar with NIMS/ICS terminology, concepts, and interfaces, especially when the OROs responding to incidents at their respective sites have adopted such systems. A licensee’s use of a command structure that is compatible with the applicable OROs’ command structure not only would enhance communication and coordination between OROs and licensees but would also facilitate the licensee’s compliance with the regulations cited in the preceding paragraph.

The NRC disagrees that references to NIMS and ICS be included in Section II of NUREG-0654. As stated previously, the NRC is not requiring its licensees to implement NIMS/ICS, which is consistent with HSPD-5. The Interim Staff Guidance (ISG) NSIR/DPR-ISG-01, “Emergency Planning for Nuclear Power Plants,” contains new evaluation criterion C.6 which addresses provisions that each organization, including licensees, should make to enable onsite response support from OROs in a hostile action incident as needed. However, the criterion does not specifically refer to NIMS/ICS.

The NRC disagrees that too much discretion is given to licensees as to which emergency plan changes to communicate with offsite agencies because the plan largely deals with onsite organization and response. However, where the plan impacts OROs, then coordination is required, such as the development of notification procedures and EALs. The NRC requires that each licensee’s drill and exercise program include critiques of the licensee’s performance. The NRC requires that when weaknesses, including those that involve a lack of coordination with OROs, due perhaps to unfamiliarity with NIMS or a failure to communicate plan/procedure changes, are identified, they will be corrected. Should corrective actions fail or the critique fail to identify weaknesses, the NRC may cite the licensee for a failure to comply with regulations. No changes were made to the final rule in response to these comments.

Support for a Requirement that Licensees Implement ICS or a Similar System, But Not Other Aspects of NIMS

Comments: One commenter argued that the NRC should require the adoption of ICS because it would facilitate communication between licensees and OROs, but that other elements of NIMS should be voluntary for licensees. [0065] Another commenter opposed adding the requirement for NIMS and ICS, but agreed that integrating ICS or a similar system into licensee emergency response would be beneficial. The commenter approved of the evaluation criterion that the NRC added to NUREG-0654, Section II.C.6, requiring each organization to “make provisions to enable onsite response support from OROs in a hostile action-based incident as needed.” [0102]

NRC Response: The NRC agrees in part with the commenters. The NRC agrees that the adoption of ICS by licensees would facilitate their communication with OROs as well as provide other benefits. But the NRC does not agree that the NRC should require licensees to adopt a

specific type of incident command structure such as the one stipulated by HSPD-5. If the NRC mandated that its licensees use an incident command structure such as the one required by HSPD-5, any future changes to HSPD-5 or NIMS/ICS could require corresponding rule changes by the NRC. Similarly, if the NRC were to compel its nuclear power reactor licensees to use a specific incident management program, that program still could be different than incident management systems adopted by OROs that comply with laws promulgated by other governmental organizations.

The NRC agrees that this issue is more appropriately addressed in guidance, such as the evaluation criterion in NUREG-0654 for each organization to “make provisions to enable onsite response support from OROs in a hostile action event as needed.” However, the requirements exist in 10 CFR 50.47 and 10 CFR Part 50, Appendix E for cooperation and communication between licensees and OROs. The voluntary use of ICS can be tied to site-specific licensee agreements, procedures, or plans developed in coordination with OROs. No changes were made to the final rule in response to these comments.

Opposition to a Requirement that Licensees Implement NIMS or ICS

Comments: Six commenters expressed opposition to a potential requirement for licensees to implement NIMS or ICS. [0073, 0089, 0090, 0096, 0102, FEMA-2008-0022-0101] Three commenters argued that required use of NIMS should only apply to government entities, and that non-governmental entities, such as nuclear facilities, should not face such a requirement. [0089, 0096, 0102] One of these commenters stated that requiring licensees to implement NIMS or ICS would exceed the scope of HSPD-5. [0096] A commenter from a State government agency complained that such a requirement would add an unnecessary “administrative layer” that would impede the State’s internal communication during nuclear facility exercises. [0073] Another commenter argued that the current industry approach to emergency response incorporates concepts similar to those in NIMS and ICS, and replacing existing practices with NIMS and ICS would be costly and yield little improvement in emergency response capabilities. [0102] Another industry representative stated that it is “desirable but not essential” for licensee EROs to use NIMS and ICS. [0090] Another commenter felt that it would be impractical for a licensee to adopt several aspects of NIMS, and that licensees should be encouraged, but not required, to adopt ICS only. [FEMA-2008-0022-0101]

NRC Response: The NRC agrees with the commenters that NIMS/ICS should not be a requirement for nuclear power reactor licensees. However, the NRC expects that licensees will meet the requirement in 10 CFR 50.47(b)(6) for adequate communications with OROs. Any weaknesses in response concerning communications with OROs during drills and exercises that result from a licensee’s lack of familiarity with NIMS or ICS should be identified in critiques and corrected. Failure to identify or correct such weaknesses may be in noncompliance with NRC regulations. No changes were made to the final rule or the guidance documents in response to these comments.

2.2 Whether the NRC should enhance its current regulations to be more explicit in the number of ERO staff necessary for nuclear power plant emergencies

Comments: Six industry representatives opposed the ERO staff requirements that the NRC suggested in the *Federal Register* Notice (FRN). [0084, 0089, 0090, 0102, 0105, 0135] One

commenter argued that the NRC should not add the draft staffing table included in the FRN to the rulemaking because codifying the guidance would make it difficult for the NRC to update ERO staffing requirements based on experience or improvements in technology. Instead, the commenter suggested that the NRC include the table in the ISG, NSIR/DPR-ISG-01. [0102] Another commenter recommended that the NRC include the table as an alternative to the requirement in 10 CFR Part 50, Appendix E, Section IV.A that licensees provide analyses showing that personnel with assigned emergency plan implementation functions do not have responsibilities that would interfere with their emergency planning functions. [0090] Two of the commenters requested an opportunity to review and comment on a staffing table before the NRC finalizes it. [0089, 0102] Three commenters agreed that the NRC needed to provide a stronger technical basis for the requirements or guidance included in such a staffing table. [0089, 0102, 0105] Two of the commenters did acknowledge that the draft staffing table would be an improvement over its counterpart in NUREG-0654, Table B-1. [0084, 0102]

NRC Response: The NRC agrees with the commenters that the staffing table should not be included in the NRC's regulations. The table would be too prescriptive and would not accommodate differences in staffing levels at each site that would be appropriate because of site-specific considerations.

One commenter suggested that a design-specific analysis be allowed and others suggested that there be a technical analysis to support staffing. The detailed analysis required by the final rule will serve as the technical analysis for each licensee's staffing levels. No changes were made to the final rule or the guidance documents in response to these comments.

2.3 Whether it is necessary to add a requirement for non-power reactor licensees (i.e., research and test reactor licensees) to include in their emergency plans detailed analyses demonstrating that on-shift personnel can perform all assigned emergency plan implementation functions in a timely manner without having competing responsibilities that could prevent them from performing their emergency plan functions

Comments: Five commenters opposed a potential requirement that non-power reactor licensees conduct detailed staffing level analyses. [0050, 0051, 0068, 0074, 0102] Each of those commenters agreed that current practices sufficiently protect the public health and safety. [0050, 0051, 0068, 0074, 0102] One academic institution commenter stated that, at a non-power reactor, the operator conducts emergency response in the control room within the first few minutes of an event. Additionally, employees at such facilities are accustomed to balancing multiple duties. Therefore, an event at a non-power reactor would not lead to multitasking problems. [0050] Another commenter agreed that the emergency organization for a non-power reactor is much smaller and simpler than for a power reactor. [0068] Another academic institution commenter with a non-power reactor indicated that NRC inspectors already review its staffing levels for adequacy twice a year, and that it participates in emergency exercises with its outside emergency support organizations. [0051] Another commenter indicated that the NRC currently approves the emergency plans at non-power reactors. [0074] Two commenters argued that an incident at a non-power reactor would result in doses of radioactivity below the thresholds established in 10 CFR Part 20, [0050, 0051] and another commenter stated that

incidents at a non-power reactor would be on a smaller scale than an incident at a power reactor. [0068]

NRC Response: The NRC agrees with the commenters that adding a requirement for non-power reactor licensees to include in their emergency plans a detailed analysis demonstrating that on-shift personnel can perform all assigned emergency plan implementation functions in a timely manner is not needed. Staffing at non-power reactors is generally small, which is commensurate with the need to operate the facility in a manner that is protective of public health and safety. The staffing is reviewed as part of initial reactor licensing. The functions of emergency staff are outlined in emergency plans and are tested through drills and exercises in accordance with NUREG-0849. Results are reviewed by the NRC during routine inspections. Therefore, the NRC has not included this requirement in the final rule.

Comment: One commenter argued that such a regulation would violate Office of Management and Budget (OMB) Circular A-119 which requires the consideration of voluntary standards. The commenter indicated that the American Nuclear Society and American National Standards Institute (ANSI) have issued emergency planning standards for research reactors. The commenter argued that the content of these standards is “superior to the content of the new regulation.” [0074]

NRC Response: The NRC agrees in part with the commenter. If the NRC had decided to maintain in the final rule the requirement for non-power reactor licensees to include in their emergency plans a detailed analysis demonstrating that on-shift personnel can perform all assigned emergency plan implementation functions in a timely manner, the NRC would have had to consider the standards of ANSI/ANS 15.16-1982 and ANSI/ANS 15.16-2008. However, the NRC is not adopting this requirement. No change was made to the final rule in response to this comment.

Comment: Two commenters reserved comment on a potential requirement, and requested that the NRC provide additional information and discussion on the need for such a requirement through a design basis analysis. [0085, 0096]

NRC Response: The NRC disagrees with the commenters. The proposed rule contained sufficient information to form an opinion. No change was made to the final rule in response to this comment.

2.4 Whether it is necessary to add the emergency declaration timeliness criteria for non-power reactor licensees. The NRC is seeking comments on whether to issue regulations requiring that non-power reactor licensees meet these criteria

Comments: Four commenters opposed emergency declaration timeliness criteria for non-power reactor licensees. [0050, 0051, 0074, 0102] Each of those commenters agreed that current practices sufficiently protect the public health and safety. [0050, 0051, 0074, 0102] Two academic institution commenters stated that their current reporting structures are consistent with ANSI/ANS guidance documents. [0050, 0051] One of those institutions indicated that its reporting also conforms to 10 CFR Part 50, Appendix E and RG 2.6. [0051] The other academic institution commenter stated that “most, if not all” non-power reactors have a 24-hour

reporting that is sufficient to protect the public health and safety. [0050] Another commenter indicated that the NRC currently approves the emergency plans at non-power reactors. [0074] One commenter argued that an incident at a non-power reactor would result in doses of radioactivity below the thresholds established in 10 CFR Part 20 [0051], and another commenter argued that the doses from such an incident would be too low to justify this requirement. [0050] One commenter did support adding emergency declaration criteria for non-power reactor licensees, citing tornado damage to the TRIGA reactor building in Kansas in 2008 as an example of the need for notification. The commenter suggested setting the reporting time criteria at 30 to 45 minutes because of the small source and limited offsite consequences of a release from such a reactor. [0068]

NRC Response: The NRC agrees with the commenters that requiring non-power reactor licensees to meet emergency declaration timeliness criteria is not warranted at this time. Non-power reactors do not have the same potential impact on public health and safety as do power reactors and non-power reactor licensees do not require complex offsite emergency response activities. The NRC has determined that further analysis and stakeholder interactions are needed prior to changing the requirements for non-power reactors. Therefore, the NRC has not included this requirement in the final rule.

Comment: One commenter argued that such a regulation would violate OMB Circular A-119 which requires the consideration of voluntary standards. The commenter indicated that the American Nuclear Society and ANSI have issued emergency planning standards for research reactors. The commenter argued that the content of these standards is “superior to the content of the new regulation.” [0074]

NRC Response: The NRC agrees in part with the commenter. If the NRC had decided to maintain in the final rule the requirement for non-power reactor licensees to include in their emergency plans a detailed analysis demonstrating that on-shift personnel can perform all assigned emergency plan implementation functions in a timely manner, the NRC would have had to consider the standards of ANSI/ANS 15.16-1982 and ANSI/ANS 15.16-2008. However, the NRC is not adopting this requirement. No change was made to the final rule in response to this comment.

Comment: Two commenters reserved comment on a potential requirement, and requested that the NRC provide additional information and discussion on the need for such a requirement through a design basis analysis. [0085, 0096]

NRC Response: The NRC agrees with the commenters. The NRC has determined that further analysis and stakeholder interactions are needed prior to changing the requirements for non-power reactor licensees. Therefore, the NRC has not included in the final rule similar requirements for non-power reactor licensees to assess, classify, and declare an emergency condition within 15 minutes and promptly declare an emergency condition.

2.5 Whether the NRC should issue regulations requiring that non-power reactor licensees include hostile action EALs in their emergency plans

Comments: Five commenters opposed requiring non-power reactor licensees to include hostile action EALs in their emergency plans. [0050, 0051, 0068, 0074, 0102] Each of those

commenters agreed that current practices sufficiently protect the public health and safety. [0050, 0051, 0068, 0074, 0102] One commenter argued that the small physical size and limited complexity of a non-power reactor would prevent confounding interactions between a simultaneous security-related event and typical operational event as might occur at a power reactor. [0050] Another commenter argued that the consequences of a hostile action at a non-power reactor would be very similar to a non-security related event, eliminating the need for separate EALs. [0068] Another commenter indicated that the NRC currently approves the emergency plans at non-power reactors. [0074] An academic institution commenter with a non-power reactor indicated that it already incorporates security-related EALs for bomb threats and loss of physical control of the facility. The commenter suggested the NRC should only determine the need for additional EALs on a site-by-site basis, based on NRC review of emergency and security plans, rather than by regulation. [0051]

NRC Response: The NRC agrees in part with the commenters who stated that it was unnecessary to expand beyond current practices to include a requirement for hostile action event EALs. Appendix E to 10 CFR Part 50 cites RG 2.6 as the guidance for the acceptability of research and test reactor (RTR) emergency plans. RG 2.6 endorses ANSI/ANS 15.16-1982 as an acceptable approach to non-power reactor emergency plans. The newly updated ANSI/ANS 15.16-2008 includes some events that could be considered as hostile action EALs. However, the NRC has determined that further stakeholder interactions and analysis of requirements for hostile action EALs for non-power reactors are needed prior to changing the requirements for these licensees. This action is being added to the NRC's current effort to look at long term solutions for non-power reactor licensing and regulation. Because the NRC is addressing through guidance the issue of hostile action EALs for non-power reactors, the NRC has not included this requirement in the final rule.

Comment: One commenter argued that such a regulation would violate OMB Circular A-119 which requires the consideration of voluntary standards. The commenter indicated that ANS and ANSI have issued emergency planning standards for research reactors. The commenter argued that the content of these standards is “superior to the content of the new regulation.” [0074]

NRC Response: The NRC agrees in part with the commenter. If the NRC had decided to maintain in the final rule the requirement for non-power reactor licensees to include in their emergency plans a detailed analysis demonstrating that on-shift personnel can perform all assigned emergency plan implementation functions in a timely manner, the NRC would have had to consider the standards of ANSI/ANS 15.16-1982 and ANSI/ANS 15.16-2008. However, the NRC is not adopting this requirement. No change was made to the final rule in response to this comment.

Comment: One commenter reserved comment on a potential requirement, and requested that the NRC provide additional information and discussion on the need for such a requirement. [0096]

NRC Response: The NRC agrees with this commenter. The NRC has determined that further analysis and stakeholder interactions are needed prior to changing the requirements for non-power reactor licensees. Therefore, the NRC has not included in the final rule a requirement for non-power reactor licensees to have hostile action EALs. No change was made to the final rule in response to this comment.

2.6 How COL and ESP applicants would implement this rule as proposed, including any impacts to the process and schedule for the applicant to submit and the NRC to review those revisions to COL or ESP applications

COL and ESP Applicants Should Be Allowed to Defer Implementation of the Proposed Rule Enhancements

Comments: Three commenters argued that the NRC should not require pending combined license (COL) and early site permit (ESP) applicants to implement the proposed rule changes before approving their applications. [0093, 0102, 0135] An industry representative argued that requiring applicants to implement the changes could delay COL issuance by as long as two years. Furthermore, the commenter argued that the emergency plans submitted with applications are sufficient as long as they comply with current requirements, because the proposed requirements are enhancements not necessary to ensure adequate protection of public health and safety. [0102] New nuclear plants will not begin operation until well after the COL is issued, and the plant could update its emergency plans to comply with the new requirements during that period. The commenter suggested that, for COL applications pending on the effective date of the rule, the requirements should become applicable following the issuance of the COL, and should be implemented prior to the initial emergency planning exercise for the unit. For ESP applications pending on the effective date of the rule, the applicant should address the new requirements either in the ESP application or in any COL application referencing the ESP after the rule's effective date. [0102] A commenter with a currently pending COL application argued that NRC may not impose new requirements on a pending ESP application according to 10 CFR 52.39(a). [0093]

NRC Response: The NRC disagrees, in part, with the commenters regarding implementation of this rule relative to COL and ESP applications. NRC regulations at 10 CFR 52.97(a)(1) require, in part, that "the Commission may issue a COL if the Commission finds that...the applicable standards and requirements of the Act and the Commission's regulations have been met." A similar regulation at 10 CFR 52.24(a) exists for issuance of an ESP. A permit/license application pending before the NRC for review, regardless of the potential for a near-term decision on that permit/license, must comply with all applicable, effective regulations as of the date of the license. Although this rulemaking is an enhancement to the existing EP requirements, and the changes being codified in the rulemaking are not required for adequate protection of public health and safety, the effect of the rulemaking on public health and safety has no bearing on the requirement to comply with the Commission's regulations and the Atomic Energy Act.

The comments refer to both deferred applicability and deferred implementation of the rule. All applicants for COLs and ESPs by definition defer implementation of EP requirements for some period of time due to the fact that the COL or ESP itself does not require immediate construction of an NPP. Rather, the COL is a license to build, and an ESP a permit to designate an area suitable for, a nuclear power plant that would be protected, in part, through EP; it is not in itself an actual NPP that would be protected, in part, through EP. The NRC agrees that a COL or ESP applicant could defer implementation of its EP program if the application is found to be in compliance with the Commission's applicable regulations in effect at the time of COL or ESP issuance. The NRC also agrees with the arguments the commenters make regarding the

necessity of implementing the emergency plan prior to the first scheduled EP exercise. However, the commenters suggest deferred applicability of the rule to COL or ESP applicants. Deferred applicability means that the rule should not apply to the applicant now, but should apply to the applicant at some later time. Because the existing EP regulations do apply to COL and ESP applicants now, and their applications are addressing those requirements, the NRC disagrees with the suggestions of deferred applicability of this rule to COL or ESP applications.

Rather, what the commenters seem to be proposing is deferred compliance with the amended EP regulations. By deferring the required compliance date for a COL or ESP applicant whose application is docketed before the effective date of the final rule, the applicant is being given a period of time to update its application in order to come into compliance with an amended regulation. This is no different from the manner in which the NRC imposes some new requirements on existing licensees. That is, the licensee is given a reasonable time period after the effective date of the rule to bring its license into compliance with the amended regulations. In the case of the docketed COL or ESP applicant, after obtaining a license or permit, the then-licensee is given a reasonable period of time to bring its license into compliance with the amended requirements, albeit outside of the initial license proceeding. However, the initial application would need to be found in compliance with the current EP regulations (that is, the applicable EP regulations in effect prior to this rulemaking) in order for the Commission to issue the initial license. Deferred compliance with this rule for these docketed COL or ESP applicants will provide the desired schedule flexibility and regulatory stability, as well as require compliance with the amended EP regulations prior to the time when the licensee's EP program would be required to be functional. The NRC included in the FRN for the final rule provisions to allow deferred compliance to this rule for docketed COL and ESP applications.

The NRC does, however, agree with the commenter regarding the Commission's finality provisions on an issued ESP and the COL application referencing that ESP. Section 52.39(a) does provide finality to the ESP and prevents the NRC from imposing new requirements on the ESP unless those new requirements meet one or more of the criteria under 10 CFR 52.39(a)(1). The NRC agrees that this rulemaking does not meet the criteria under 10 CFR 52.39(a)(1) and therefore cannot require compliance with the amended EP regulations in this rulemaking. Further, while 10 CFR 52.39(b) requires COL applicants to update their EP information provided in the ESP and discuss whether the updated information materially changes the bases for compliance with applicable NRC regulations, the COL applicant would not be required to update its application to comply with EP regulations that were amended after issuance of the ESP. However, in order to maintain consistency among NPPs using the same design, the NRC encourages COL applicants to voluntarily comply with the amended EP regulations in the COL application or as a license amendment after a COL has been issued. Changes were made to the final rule in response to these comments.

Opposition to the Thirty Day Implementation Schedule

Comment: One commenter generally opposed the 30-day implementation schedule, and argued that the implementation period should be at least 90 days. The 90-day period may need to vary if it took effect during or immediately preceding the fall or spring refueling outage seasons. An optional deferral period would allow licensees the necessary flexibility. The commenter indicated that it spoke only for operating reactors and does not have a position regarding COL or ESP applicants. [0089]

NRC Response: The NRC disagrees with the commenter. The 30-day period is the period at the end of which the final rule would become effective; implementation of the final rule at that time applies only to changes involving 10 CFR 50.54(q) and the introductory paragraphs to 10 CFR Part 50, Appendix E, Section IV. A 90-day period for implementation would have been more restrictive than the 180-day or longer implementation period for other provisions of the final rule. No change was made to the final rule in response to this comment.

2.7 Regarding the appropriateness of the proposed implementation schedule

Opposition to the Proposed Implementation Schedule

Comments: Two industry representatives opposed the proposed implementation schedule.

[0089, 0102] One of the two commenters argued that there should be no “arbitrary” implementation deadline, and that no implementation period should be shorter than 90 days.

[0089] Both commenters suggested that a preferred alternative to the proposed implementation schedule would be for each site to submit its own implementation schedule to the NRC to allow for site-specific flexibility. [0089, 0102] Such an approach would allow licensees to appropriately budget their resources [0089, 0102] and facilitate coordination with OROs. [0089] One of the commenters also made the following implementation schedule recommendations, in case the NRC does not adopt a site-by-site approach:

- With regard to on-shift staffing, the commenter recommended a 36-month implementation schedule based on a survey of licensees regarding the time and resources needed to conduct staffing analyses, budget approval, recruiting, hiring, and training of additional staff, and the potential shortage of qualified individuals.
- With regard to emergency classification timeliness, the commenter recommended a 12-month implementation schedule to allow licensees to review procedures, protocols, training and expectations, to ensure that their emergency strategies will meet the proposed requirements. A 12-month period would also allow normal training cycles to incorporate new material, if applicable, or reinforce current expectations.
- With regard to a backup means for alert and notification systems (ANS), the commenter recommended a 36-month implementation schedule to allow licensees to determine appropriate alert and notification backup methods; revise letters of agreement with and train OROs; develop, approve and implement new procedures; and submit the procedure to FEMA for inclusion into the ANS design.
- With regard to ERO augmentation and alternative facilities, the commenter recommended a 36-month implementation schedule to allow licensees to upgrade facilities, amend letters of agreement, and potentially purchase or construct a new facility. Some facilities do not currently meet the proposed requirements for the availability of computer links, and will have to make facility changes under the site modification process.
- With regard to updating evacuation time estimates (ETEs), the commenter recommended a 12-month implementation schedule because some licensees will need to incorporate subsets of the U.S. Census data into their ETEs that may not be available with the initial release of census data. Also, it may take longer than the proposed 180 days to incorporate information from State and local agencies regarding special and transient populations. There are only a few vendors that have the capabilities to prepare ETEs, and it would be difficult for those vendors to complete all the necessary ETEs within 180 days.

- With regard to licensee coordination with OROs, the commenter recommended a 24-month implementation schedule based on a survey of licensees regarding the process of revising letters of agreement (LOAs) with OROs. Time is needed to make and review changes to the agreement and procedures, negotiate with the OROs, and for the OROs to develop and implement the processes to support the new requirements.
- With regard to protective actions for onsite personnel, the commenter recommended a 90-day implementation schedule based on a survey of licensees. The licensees indicated that specific areas would require additional review, including site evacuation by opening security gates and the arrangements for accounting for personnel after an attack.
- With regard to EALs for security events, the commenter recommended a 36-month implementation period because each licensee may need to submit its EAL changes to the NRC for approval. NRC approval of an EAL change typically takes 24 months. After approval, the licensee needs time for training and drills prior to implementation. The commenter also proposed that the NRC create a generic approval for sites to change their existing EALs to comply with the new criteria. If the NRC implements that proposal, a shorter implementation period would be acceptable.
- With regard to the amended emergency plan change process, the commenter recommended a 12-month implementation period to develop administrative procedures and processes to implement the license amendment process for emergency plans.
- With regard to challenging drills and exercises, the commenter recommended a 6-month implementation period to allow sites to revise their emergency plans and drill and exercise program guidance documents, and to negotiate the timing of new exercise cycles with Federal, State, and local governments. [0102]

Another commenter concurred with these recommendations on the proposed implementation schedule. [0135] During a public meeting held by the NRC and FEMA on November 15, 2010 in Rockville, MD, stakeholders provided additional feedback on the proposed implementation periods. Highlights of feedback from the participants, including representatives of the nuclear power industry and State/local emergency management agencies, on each of the rulemaking topics are summarized below. A full summary of the meeting, including the meeting transcript, is available on www.regulations.gov at Docket No. NRC-2008-0122.

- Comments by representatives of the nuclear power industry indicated that 36 months was still considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.A.9, regarding on-shift staffing. This time frame would allow licensees 12 months to perform the staffing analysis, and an additional 24 months to hire, train, and qualify personnel, or reassign tasks to existing personnel, if any staffing shortfalls were identified.
- Comments by representatives of the nuclear power industry indicated that 12 months was still considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.C.2, regarding emergency declaration timeliness. This time frame would be necessary to revise emergency plans, update procedures, and train emergency responders on the new declaration timeliness requirements.
- Comments by representatives of the nuclear power industry and State/local agencies indicated that 36 months was still considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.D.3, regarding ANS backup means. For sites with ANS backup means already in approved ANS design reports, but modifications to the ANS backup means are needed to ensure compliance with the new requirements, this time frame would allow time to update ANS design reports and obtain FEMA

approval. For sites without ANS backup means already in approved ANS design reports, it would allow time to identify and design the ANS backup means, revise ANS design reports, and obtain FEMA approval.

- Comments by representatives of the nuclear power industry indicated that 36 months was still considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.E.8.d, regarding ERO augmentation at an alternative facility (or facilities). A 36 month time period would allow licensees to locate or construct new facilities with full capabilities, including communications links and computer links.
- Comments by representatives of the nuclear power industry indicated that 12 months was still considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.3, to update ETE analyses. This would allow time to obtain census data from the U.S. Census Bureau and State/local agencies, and to perform ETE analyses by a limited number of vendors.
- Comments by representatives of State/local agencies indicated that 24 to 36 months was considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.A.7, regarding licensee coordination with OROs. This time frame would permit offsite agencies to identify additional offsite resources and obtain/update agreements for these resources. A longer time (36 months) might be needed if any legal issues involving these new agreements arise.
- Comments by representatives of the nuclear power industry indicated that 36 months was still considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.B.1, regarding hostile action EALs. This time frame would allow licensees to submit EAL scheme changes and obtain NRC approval.
- Comments by representatives of the nuclear power industry indicated that 90 days was considered the appropriate time frame for implementing the amended requirements of 10 CFR 50.54(q) regarding the emergency plan change process. This time frame would allow time for implementing licensee change management processes; it would also allow flexibility to accommodate outages and other EP staff work assignments.
- Comments by representatives of the nuclear power industry indicated that 180 days was considered the appropriate time frame for implementing the new requirements of Appendix E, Section IV.F.2, regarding challenging drills and exercises to allow time to modify drill/exercise programs to address the new scenario variation requirements. Comments by representatives of State/local agencies indicated that 36 months or longer was considered the appropriate time frame to allow time to develop plans and procedures to address hostile action, train responders, and conduct practice drills.

NRC Response: The NRC agrees in part and disagrees in part with the commenters. Adjustments were made to the implementation schedule and are addressed in the final rule. The NRC disagrees that each licensee should submit its own preferred implementation schedule. This would result in varying implementation periods among licensees, creating the need for multiple inspections to verify compliance with the new requirements and additional compliance tracking. This approach could create problems with coordinating emergency response program changes for FEMA, State agencies, and other offsite agencies, particularly for those agencies that are involved with multiple sites. Specific implementation schedule recommendations proposed by one of the commenters are discussed below:

- The NRC agrees that 180 days may not be sufficient time for licensees to perform a detailed staffing analysis, but disagrees that 36 months should be allowed to perform a staffing analysis and then address any on-shift staffing shortfalls. The staffing analyses

can be completed within 365 days to allow time for reviewing implementing procedures, developing task lists, and performing a job/task or similar analysis. Licensees will be expected to take interim compensatory measures to address any staffing shortfalls within 30 days of when the results of the staffing analysis are available to ensure that the emergency plan can be implemented as designed. Licensees shall then implement long-term corrective actions, such as hiring, training, and qualifying additional personnel, if necessary within 24 months of completing the staffing analysis.

- The NRC disagrees that 12 months should be allowed to address emergency declaration timeliness. This is standard practice for power reactor licensees and a component of one of the EP performance indicators. If procedural changes or training is needed, 180 days is sufficient time for implementation.
- The NRC agrees in part that more time may be needed for certain licensees and offsite officials to implement the backup ANS requirement. In the proposed rule, the NRC stated that the ANS backup means must be implemented by the first biennial exercise more than one year after the effective date of the final rule, which would have allowed up to three years for implementation across the industry. However, for some sites the implementation period could have been as short as one year to update an ANS design report (or other documentation describing the backup method), submit the documentation for and obtain FEMA approval, and install the backup means. The NRC is modifying the implementation period depending on whether a site already has a FEMA-approved ANS backup means in place. For a site that already has a FEMA-approved backup means in place for part or all of the ANS, 12 months should be sufficient time for implementation. Implementation for other sites will be based on two steps: 1) submittal of an updated ANS design report for FEMA approval, which must be submitted to FEMA within 18 months of the effective date of the final rule, and 2) completion of ANS backup means installation within 365 days of the date of FEMA approval. The time period for FEMA approval will vary, and thus the total implementation period will vary from site to site, but must not exceed a total time period of 3 years and 6 months from the effective date of the final rule.
- The NRC agrees in part that 36 months should be allowed for implementing an alternative facility or facilities to function as staging areas for ERO staff augmentation during hostile action. Licensees should have already identified alternative facilities in response to Bulletin 2005-02. The NRC is requiring that the staging area and communications capabilities of alternative facilities be in place within 180 days of the effective date of the final rule. The final rule does not require that any new facilities be built, although some existing facilities may need to be upgraded to meet the new requirements. The remaining capabilities must be in place within 36 months of the effective date.
- The NRC agrees that a 12-month (or 365-day) implementation schedule is warranted for performing ETE updates so that information from State and local agencies regarding special and transient populations can be incorporated, and in recognition that a limited number of vendors have the capability to prepare ETE updates.
- The NRC agrees that 180 days may not be sufficient time to obtain new or update existing LOAs involving offsite resources that support onsite response activities. A twelve-month implementation period was included in the proposed rule. Based on additional feedback from offsite agency officials provided at the November 15th public meeting, the NRC believes that 30 months is a more reasonable time frame in which to identify any additional resources that are needed and institute new or revise existing agreements.
- The NRC disagrees with the proposed 90-day implementation period for protective actions for onsite personnel during hostile action. The NRC had proposed that protective actions for onsite personnel be implemented within 180 days. Although licensees should have

- already identified these protective actions in response to Bulletin 2005-02, the 180-day time frame allows time for additional procedure changes and training if needed.
- The NRC disagrees that 36 months should be allowed for incorporation of hostile action EALs. Licensees should have incorporated these EALs into their EAL schemes in response to Bulletin 2005-02. Prior NRC approval would not be needed if licensees need to make additional procedure changes to conform to the Bulletin, and 180 days is sufficient time for making these changes and conducting training if needed.
 - The NRC disagrees that any time period should be allowed for implementing the amended emergency plan change process beyond the effective date of the final rule. The NRC intends that the amended process be used for any emergency plan changes under consideration after the final rule becomes effective. This allows ample time for licensees to develop or revise administrative procedures in anticipation of the need for making changes to their emergency plans.
 - The NRC proposed that the new drill and exercise program requirements be implemented no later than the first biennial exercise more than one year after the effective date of the final rule. This would have resulted in a minimum of one year and up to three years for implementation across the industry. Although the nuclear power industry had proposed a six-month implementation period for revising licensee drill and exercise programs, offsite agency officials indicated that they would need three or more years to develop plans and procedures to address hostile action, train responders, and conduct practice drills. Therefore, the NRC has revised the implementation period such that the first hostile action biennial exercise must be conducted by December 31, 2015 for each site. States should fully participate in one hostile action exercise by the same date. This will allow additional time for offsite agencies to prepare for biennial exercises with hostile action scenarios. The initial 8-year exercise cycle will begin in the calendar year of the initial hostile action exercise for a site.

The NRC included in the FRN for the final rule provisions for each of these implementation periods.

Comments: A commenter also stated that the proposed 30-day implementation schedule of the new Section 50.54(q) requirements is inadequate. [0102]

NRC Response: The NRC disagrees with the commenter. Although the amended 10 CFR 50.54(q) becomes effective 30 days after the publication of the final rule in the *Federal Register*, its actual impact doesn't occur until the licensee processes the first emergency plan change following the effective date of the final rule. As such the implementation schedule is under the licensee's control. No change was made to the final rule in response to this comment.

3. Security-Related Issues

3.1 On-Shift Staffing Analysis

3.1.1 Part 50, Appendix E, Section IV.A.9: On-Shift Staffing Analysis

Guidance Inconsistencies

Comment: One commenter stated that different parts of the guidance under the proposed rule are inconsistent. The guidance under 10 CFR 50.54(q) states that changes to ERO staffing should be submitted to the NRC for prior approval, but the guidance for Section IV.A.9 of Appendix E states that this analysis should be retained for inspection, even though the analysis could result in a staffing change. The commenter suggested that all staffing changes should be submitted to the NRC for review and approval prior to implementation. [0066]

NRC Response: The NRC disagrees with the commenter. RG 1.219, “Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors,” states that changes to ERO staffing that eliminate a key position or reduce the licensee’s capability to staff those positions on a 24/7 basis consistent with fitness-for-duty requirements, are examples of emergency plan changes that should be submitted to the NRC for prior review and approval. The detailed analysis required by Section IV.A.9 of Appendix E may result in a change to the number of on-shift staff, but the licensee would still be responsible for determining whether any staffing change is a reduction in effectiveness of the plan requiring NRC approval. Therefore, submission of all staffing changes for review and approval prior to implementation is not necessary. No change was made to the final rule in response to this comment.

Detailed Analysis of On-Shift Staffing

Comment: One commenter noted that the proposed rule does not allow the use of on-shift staff from one unit of a multi-unit site to support emergency response functions at another unit. The commenter recommended that the regulation state that it is permissible to use staff from other units if the accident or threat only affects one unit. [0076]

NRC Response: The NRC disagrees with the commenter. The proposed rule did not explicitly state that on-shift staff from one unit can support emergency response at another unit of a multi-unit site, but the proposed rule did not disallow that action either. The detailed analysis required by the final rule provides licensees maximum flexibility to demonstrate that on-shift staff is not assigned additional duties that would prevent the timely performance of assigned emergency plan functions. Therefore, the suggested rule language is not necessary. No change was made to the final rule in response to this comment.

Comment: One commenter stated that the proposed rule needs to provide a specific definition of each function and the competencies necessary to satisfy its performance. The commenter suggested that action on the proposed rule should be deferred until it is clear how compliance with the rule could be demonstrated. The commenter recommended that a well-defined set of standard circumstances for a response evaluation would provide for uniform and repeatable analysis of staffing needs and would be preferable to fixed staffing levels. [0135]

NRC Response: The NRC disagrees with the commenter. Licensees have approved emergency plans which specify the emergency functions that on-shift responders are responsible for performing. NRC regulations and NUREG-0654, Table B-1, address ERO staffing and functions in general terms to allow licensees flexibility in determining, on a site-specific basis, the on-shift staff necessary to perform those functions. Industry events and NRC inspections have revealed that licensees have sometimes assigned additional responsibilities to on-shift staff which could interfere with their primary emergency response duties.

The final rule requires licensees to perform a detailed analysis of their choosing to show that the on-shift staff specified in the emergency plan can reasonably perform their emergency functions without being overburdened. The NRC has purposely not provided a defined set of standard circumstances to allow for a site-specific analysis of a defined series of events, such as postulated design basis accidents (DBAs) and the design basis threat (DBT), to determine the on-shift staff necessary for response until the augmenting staff arrives. The guidance available to show compliance with the rule is clear and will ensure that regional NRC inspectors use a standardized approach to evaluating, for consistent implementation, the detailed analyses performed by licensees. No change was made to the final rule in response to this comment.

Comments: Three commenters questioned the need for this new regulation. [0084, 0090, 0102] One commenter stated that current regulations are adequate to address NRC's concerns, and that NRC's discussion supporting the need for enhanced regulations does not indicate a need for licensees to perform a detailed analysis of on-shift staffing. [0084] Two commenters suggested that the process for demonstrating compliance should be described in a Regulatory Guide (RG) instead of in the regulations. [0090, 0102] One of the commenters agreed that this rulemaking is not required because 10 CFR 50.47(b)(2) already requires adequate on-shift staffing. The commenter recommended that this section of the proposed rule be deleted or changed to the following wording:

“Nuclear power plant licensees under this part and Part 52 must ensure that on-shift personnel assigned emergency plan implementation functions are not assigned any responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.” [0102]

NRC Response: The NRC disagrees with the commenters. The existing regulation, 10 CFR 50.47(b)(2), requires adequate on-shift staffing, but does not provide a clear definition of “adequate.” Guidance concerning on-shift emergency response staffing is general in nature to allow licensees flexibility in the number of on-shift staff. This regulatory structure has resulted in inconsistent licensee implementation that sometimes has led to inadequate emergency response. This new regulation requires licensees to demonstrate adequate staffing by a measureable analysis that shows that the duties assigned to on-shift staff are reasonable for one person to perform and not burdensome.

This staffing issue previously lacked clarity in the regulations and was specifically addressed in the interim compensatory measures issued in February 2002. The NRC considered it an important addition to the regulation to enhance public health and safety, ensuring consistent application for present nuclear power plants as well as new power reactors. A RG is an effective tool to provide implementation methods, but is only guidance, does not carry the weight of regulation, and is therefore unenforceable. No change was made to the final rule in response to these comments.

Comment: One commenter stated that the NRC has “existing mechanisms to deny requests by licensees to reduce on-shift staffing levels.” The commenter argued that these mechanisms make the rule requirements related to staffing levels unnecessary. [0084]

NRC Response: The NRC disagrees with the commenter. The final rule requires nuclear power reactor licensees to perform a staffing analysis to demonstrate that on-shift staffing levels are adequate. This is a new requirement not addressed under previous regulations. If a licensee decides to reduce staffing levels and determines that this change would also be a reduction in the effectiveness of its emergency plan, then the licensee would need to request NRC approval under the provisions of 10 CFR 50.54(q). No changes were made to the final rule in response to this comment.

3.1.2 NSIR/DPR-ISG-01: Draft Interim Staff Guidance – On-Shift Staffing Analysis

Additional and Revised Language for the Draft Interim Staff Guidance

Comment: One commenter suggested alternate language for Section IV.C of the ISG to clarify that a staffing analysis will be performed for the DBT and each DBA and to clarify that a staffing analysis is not required for a DBA if the initial conditions stipulate that any unit on the site is in Mode 5 or 6. The commenter suggested the following language:

“Define the events that will require a staffing analysis. These events shall include the Design Basis Accidents (DBAs) presented in the Final Safety Analysis Report (FSAR), as updated, and which result in an emergency classification. They shall also include the DBT. A staffing analysis is not required for a DBA if the initial conditions stipulate that any unit on the site is in Mode 5 or 6 (i.e., in an outage).”
[0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenter. The NRC agrees with the language to specify that the analysis should be performed for the DBT and each DBA presented in the updated FSAR that result in an emergency classification because the Emergency Plan is implemented only for this type of event. However, the NRC does not agree with the statement that the staffing analysis is not required for a DBA if any unit onsite is in Mode 5 or 6 (i.e., in an outage). The commenter’s basis for this statement was that if a unit is in an outage, then there are a significant number of licensee personnel onsite at all times ensuring that sufficient licensee resources would be available to support emergency response activities. The intent of the detailed analysis is to determine which emergency response functions are required for each DBA, as well as the number and expertise of responders that would be necessary to carry out those functions. Outage staffing numbers alone may not guarantee that sufficient staff resources are available. Changes were made to the ISG in response to this comment.

Comment: The same commenter suggested alternate language for Section IV.C of the ISG to clarify that the detailed analysis should include all actions to be performed in the period before the arrival of the augmenting ERO staff, not just in the first 30 minutes of the event. The commenter recommended the following proposed language:

“For the DBT and each DBA, identify the emergency response actions that on-shift personnel must perform prior to the arrival of the augmenting ERO staff (as described in the licensee’s emergency plan). Action identification may be done by one or more methods including a job/task analysis (JTA), a time-motion study, Operating Experience reviews, document reviews, personnel interviews, etc.” [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenter. The NRC agrees with the wording concerning actions that must be performed before the arrival of the augmenting ERO staff. Different licensees have different ERO augmentation times so the analysis should be performed using the augmentation times that are specified in each licensee’s emergency plan. However, action identification must be done by a measurable analysis such as a job/task analysis, time-motion study, or equivalent. Other methods such as operating experience reviews, document reviews, and personnel interviews, are subject to interpretation and not in keeping with the intent of this guidance. Changes were made to the ISG in response to this comment.

Comment: The same commenter suggested alternate language for Section IV.C to clarify and add more detail regarding the process and expectation associated with collateral duty issues. The commenter recommended the following proposed language:

“For the DBT and each DBA, perform a detailed analysis to determine if the current minimum on-shift staff can effectively perform all required emergency response actions in a timely manner until arrival of the augmented ERO. Additional duties assigned to on-shift staff may be acceptable provided that those duties do not detract from the effective and timely performance of other assigned duties. Identify positions which have a collateral duty that could adversely impact the performance of an emergency response function/task. Licensees are expected to promptly enter any unsatisfactory results into their Corrective Action Program for resolution.” [0102]

NRC Response: The NRC agrees in part with the commenter. The NRC generally agrees with the proposed language for Section IV.C which clarifies that additional duties may be assigned to on-shift staff provided that those duties do not detract from the timely performance of other assigned duties. However, the NRC substituted the term “their primary duties” in place of “other assigned duties.” Also, the NRC agrees that if licensees identify positions which have a collateral duty that could adversely impact the performance of an emergency response function/task, then that issue should be promptly entered into the licensee’s Corrective Action Program. This will ensure that the potential for overburdened on-shift staff will receive the necessary management attention for resolution. Changes were made to the ISG in response to this comment.

Comment: The commenter also suggested additional language for Section IV.C to add guidance on how to address functions or tasks identified in NUREG-0654, Table B-1. The commenter recommended the following proposed language:

“A DBT or DBA event description may not specify the performance of some major functions or tasks listed in NUREG-0654 Table B-1. Examples include ‘Repair and Corrective actions’, and ‘Rescue Operations and First-Aid’. In these cases, the licensee’s staffing analysis should specify the resources available to

perform these functions and tasks, if needed. They may be assigned as a collateral duty,” and “With respect to the DBT analysis, it may be assumed that the threat is neutralized with no adverse consequences to plant safety. Licensees must ensure that sufficient staff is available to effectively implement both the Emergency Plan and the Security Plan.” [0102]

NRC Response: The NRC agrees with the commenter. The proposed language for Section IV.C promotes consistent application of the guidance by clarifying how to address functions or tasks identified in NUREG-0654, Table B-1, for which there is no associated performance requirement in a site-specific DBT or DBA. It also adds guidance concerning threat neutralization with respect to the DBT analysis which was provided by the NRC during the September 17, 2009 public meeting. Changes were made to the ISG in response to this comment.

Comment: The commenter suggested additional language for Section IV.C to add a working definition for the task “repair and corrective action” to reflect real world limitations on the ability to perform this task until the arrival of the augmenting ERO. The commenter recommended the following proposed language:

“As used in the context of on-shift staffing capability, the Major Task ‘Repair and corrective action’ means an action that can be performed promptly to restore a non-functional component to functional status (e.g., resetting a breaker), or to place a component in a desired configuration (e.g., open a valve), and which does not require work planning or implementation of lockout/tagout controls to complete.

The Major Functional Area ‘Rescue Operations and First-Aid’ may be assigned to a Fire Brigade member(s) as it is assumed that this function, if needed, would commence upon extinguishment of the fire.

Concerning the DBT staffing analyses, it may be assumed that the threat is neutralized in such a manner that responding offsite resources (e.g., law enforcement, Emergency Medical Services, etc.) will perform the Major Functional Area of ‘Rescue Operations and First-Aid’.” [0102]

NRC Response: The NRC disagrees with the commenter. Adding a definition for a Major Task specified in NUREG-0654 is beyond the scope of this guidance and not necessary. Licensees have the flexibility to utilize these responders in whatever manner they see fit until augmented responders arrive. The same would apply to the major functional area “Rescue Operations and First Aid,” without adding to the guidance in Section IV.C. The assumption that the “Rescue Operations and First-Aid” function would commence upon extinguishment of the fire may not be accurate in that this function may be necessary for other emergencies. The assumption that this function would be performed by offsite resources during the DBT hostile action, although potentially accurate for some scenarios, is beyond the scope of this guidance and not necessary. No change was made to the ISG in response to this comment.

Comment: The commenter suggested additional language for Section IV.C to reflect information provided during the NRC public meeting on September 17, 2009. The commenter recommended the following proposed language: “The results should be documented and

available for NRC inspection. Staffing analyses and results are not considered to be part of the Emergency Plan.” [0102]

NRC Response: The NRC agrees with the commenter’s proposed language for Section IV.C. This language clarifies that the staffing analyses and results are not considered to be part of the emergency plan, reflecting information that the NRC provided during the September 17, 2009 public meeting. Changes were made to the ISG in response to this comment.

Revisions to NUREG-0654

Comment: One commenter recommended modifying NUREG-0654 by eliminating the 30-minute “capability for additions” column from Table B-1. The commenter argued that there is no technical basis for the existing 30-minute staff augmentation guidance and it has been problematic for licensees. The commenter explained that several of the positions listed in the 30-minute column cannot be utilized until the arrival of additional response personnel at 60 minutes, while some on-shift positions can be performed well past 30 minutes into an event. [0102]

NRC Response: The NRC disagrees with the commenter. There is no technical basis for eliminating the 30-minute responders. Although the technical support center (TSC) and operations support center (OSC) would be activated approximately 60 minutes after an Alert declaration, the 30-minute responders could be utilized by the control room, if needed, before those facilities are activated. No change was made to the final rule or the guidance documents in response to this comment.

Examples of Job/Task Analyses or Time-Motion Studies

Comments: Two commenters expressed a need for the NRC to provide examples of acceptable JTAs or time-motion studies. [0090, 0114] One of the commenters stated that examples would be helpful to licensees. [0090] The other commenter stated that there should be more information about the expectations of the JTAs and time-motion studies to ensure a consistent application across the industry. Further, the commenter stated that this analysis will be subject to individual inspector opinion resulting in conflicting approaches from site-to-site and Region-to-Region. [0114]

NRC Response: The NRC disagrees with the commenters. Although the NRC does not have examples of JTAs or time-motion studies, the Institute of Nuclear Power Operations (INPO) has guidance available on how to perform a JTA. Licensees can use this approach or some other method of their choosing to determine the tasks that must be completed in the “Major Functional Areas” of NUREG-0654, Table B-1. To ensure consistent NRC implementation, regional NRC inspectors will be trained on a standardized approach to evaluating these analyses to ensure objectivity. NRC Headquarters staff will also be available in a coaching role to ensure objectivity and standardization. No change was made to the guidance documents in response to these comments.

Corrective Action Programs

Comment: One commenter stated that the proposed rule does not provide adequate credit for the use of licensees’ corrective action programs and the NRC’s regulatory process. The industry’s experience with drills, exercises, and actual events has allowed for sites to

demonstrate on-shift capabilities during multiple events. Problems identified with response have been addressed in the corrective action programs or in the regulatory process. The commenter stated that if poor performance related to shift staffing in actual events involved a significant number of sites, the proposed rule for shift staffing would be necessary. The commenter argued that this is not the case. [0114]

NRC Response: The NRC disagrees with the commenter. This issue does not concern the adequacy of licensee corrective action programs, but rather a clarification of the rule to ensure emergency responders are not overburdened during emergencies, resulting in inadequate response. There are sufficient examples of inadequate response and/or findings which could have led to inadequate response such that a clarification is warranted. The NRC has determined that this enhancement to the rule will have the beneficial effect of minimizing the potential occurrence of overburdened responders, resulting in improved public health and safety. No change was made to the guidance documents in response to these comments.

Timing of Comment Period

Comment: One commenter argued that because the proposed rule language and implementation guidance documents are subject to comment at this time, the NRC should establish an additional comment period for the ISG after the rule language has been finalized. [0089]

NRC Response: The NRC disagrees with the commenter. Commission policy provides that, to the extent possible, guidance supporting a proposed and final rule be published concurrently with the proposed and final rule, respectively, to help stakeholders understand the proposed and final rules and their implementation. The NRC supplied draft guidance for the proposed rule in this case, is responding to comments on it, and revised the final version of the ISG based on the comments received. The guidance issued with the final rule is one acceptable method to implement the final rule, but not the only method. Therefore, an additional comment period for the ISG is not necessary.

3.1.3 Other: On-Shift Staffing Analysis

Comment: One commenter stated that the NRC did not provide a sound justification for the changes being proposed under On-Shift Staffing Analysis. [0102]

NRC Response: The NRC disagrees with the commenter. Actual examples of inadequate licensee response, inspection findings, and multiple requests for on-shift staffing changes provide sufficient basis for this rulemaking. No change was made to the final rule or the guidance documents in response to this comment.

Comment: A commenter stated that the longer times before onset of releases for accident conditions allows additional time to complete on-shift duties, reducing competition between on-shift duties and emergency duties. In addition, the commenter noted that the Collateral Duties issue is more important in terrorist situations where less time may be available. [0048]

NRC Response: The NRC disagrees with the commenter. The new research concerning time to onset of releases would mainly impact health physics activities. Other events such as fires with complications will still require the same number of responders (e.g., fire brigade) and these are the types of events which have resulted in inadequate response in the past. Also, the NRC

concluded that the EP planning basis for NPP reactors remains valid, even considering the impact of hostile action contingencies unanticipated at the time the basis was established. A vulnerability assessment documented in SECY-03-0165, "Evaluation of Nuclear Power Reactor Emergency Preparedness Planning Basis Adequacy in the Post-9/11 Threat Environment," September 22, 2003, revealed that the timing and magnitude of releases related to hostile action events are no more severe than the shortest timing or largest magnitude sequences considered in the EP planning basis. No change was made to the final rule or the guidance document in response to this comment.

3.2 EALs for Hostile Action

3.2.1 Part 50, Appendix E, Section IV.B: EALs for Hostile Action

Opposition to the Proposed Requirements

Comment: One commenter argued that the proposed regulations would not allow for EAL schemes currently under NRC review such as Nuclear Energy Institute (NEI) 07-01, or any future EAL schemes. The commenter suggested that the NRC add more flexibility to the rule regarding new EAL schemes. [0084]

NRC Response: The NRC agrees with the commenter. The proposed regulation would have limited EAL schemes to those as described in NUMARC/NESP-007 and NEI 99-01. The text in Appendix E, Section IV.B.2, was revised as follows: "A licensee desiring to change its entire emergency action level scheme shall submit an application for an amendment to its license and receive NRC approval prior to implementing the change."

Comment: One commenter stated that the proposed rule is unnecessary because processes are already in place to assure the existence of EALs for hostile action. The commenter suggested that 10 CFR 50.54(q) requires licensees to maintain the credible threat EAL required by Order EA-02-026 and the EAL enhancements specified in Bulletin 2005-02. The commenter also explained that the proposed rule unnecessarily separates out hostile action as a special category of events and recommended that this detail is not needed because the current EAL schemes in use contain initiating conditions for hostile action, other hazards to station operation, abnormal radiological events, system malfunctions and fission product barrier breaches. [0135]

NRC Response: The NRC disagrees with the commenter. Although licensees have made revisions to their existing emergency plans to incorporate the guidance and orders issued by the NRC following the events of September 11, 2001, including adding hostile action EALs to their EAL schemes, the former NRC regulations did not require these EALs. The final rule requires licensees to maintain the enhancements made to their current emergency plans and establishes the requirement for the inclusion of hostile action EALs in the emergency plans of future licensees. No change was made to the final rule in response to this comment.

3.2.2 Other: EALs for Hostile Action

Other Suggestions to Improve EAL

Comment: One commenter argued that the NRC is not in a position to state that evacuations may not be needed in a hostile action where a General Emergency (GE) has been declared.

State and local authorities are responsible for determining appropriate actions during a GE. If the NRC and FEMA do not consider an evacuation necessary, it should be classified as a Site Area Emergency (SAE). [0064]

NRC Response: The NRC disagrees with the commenters. The EALs have two paths that can determine an emergency classification level (ECL): a reactor component and a security component. In the case of a GE based on a security EAL in which the licensee has lost control of the protected area, the potential exists that a hostile action may cause damage to plant equipment and may or may not cause a release. Without a release, but with unknown adversary capabilities in the plant and surrounding areas, it may be reasonable to expect that personnel should not evacuate the area in order to protect their lives. In this instance, law enforcement would work with the unified command to advise the licensee and State and local authorities regarding evacuation decisions affecting onsite personnel. Classifying this example as an SAE would ignore the premise that losing control of vital areas would keep the licensee from being proactive to address GE-like actions that responders must take to mitigate ensuing damage caused by the hostile action, which may lead to a release. Therefore, clear regulatory guidance to licensees is appropriate to effectively protect onsite personnel addressing hostile action toward NPP sites. No change was made to the final rule or the guidance documents in response to these comments.

Comments: Another commenter stated that hostile action has many potential outcomes, and that the NRC should analyze each potential scenario separately and develop situation-specific emergency responses. The commenter recommended that the NRC use SOARCA data to determine the onsets and magnitudes of releases and calculate necessary evacuation times. The commenter presented an example table of hostile action scenarios. [0048] Another commenter argued that the design basis threat rule that the NRC currently uses does not reflect all potential hostile threats to NPPs. Requiring licensees to only address accidents defined in their licensing basis will not be broad enough to cover all relevant hostile threats. [0109]

NRC Response: The NRC disagrees with the commenters. The SOARCA project is not complete and the NRC has not approved SOARCA data for any use, including the use as suggested by the commenter. When the study is completed and if the NRC approves it, the data may inform regulatory issues.

The NRC disagrees with the DBT comment as it relates to EALs because the DBT is associated with adversaries and the associated impact on special nuclear materials. The change in DBT will not change the physics related to the source term and core damage, even though an increase in the number of adversaries can increase the probability of reaching vital plant equipment faster. No change was made to the final rule or the guidance documents in response to this comment.

3.3 ERO Augmentation and Alternative Facilities

3.3.1 Part 50, Appendix E, Section IV.E.8: ERO Augmentation and Alternative Facilities

Support for the Proposed Requirements

Comments: One commenter supported the establishment of alternate facilities as outlined in Section IV.E.8.d as a safeguard in case access to the reactor site is cut off during a hostile action. [0068]

NRC Response: No response is necessary.

Opposition for the Proposed Requirements

Comment: One commenter suggested that the proposed rule is unnecessary because Order EA-02-026 required licensees to assess the adequacy of staffing plans at emergency response facilities during hostile action assuming the unavailability of the on-site TSC and to identify alternative facilities capable of supporting event response. The commenter explained that licensee commitments and actions have been inspected by NRC making the codification of the requirements unnecessary. [0135]

NRC Response: The NRC disagrees with the commenter. To resolve this issue, the NRC considered taking no further regulatory action or continuing the voluntary implementation currently in place. If no action had been taken, there would have continued to be no explicit regulatory requirement regarding the actions necessary during hostile action for the ERO to staff an alternative facility. Taking no further regulatory action may have resulted in inconsistent implementation of ERO augmentation guidelines, and less effective overall site response. The NRC also considered using a voluntary program; however, voluntary programs do not provide a consistent, NRC-approved means for addressing needed enhancements for hostile action. The use of voluntary programs would not have ensured long-term continuity of the enhancements for both licensees and applicants. Thus, the NRC is codifying in 10 CFR Part 50, Appendix E, Section IV.E, the Order EA-02-026 requirements and the enhancement examples described in NRC guidance, such as Bulletin 2005-02, concerning ERO augmentation to alternative facilities during hostile action to maximize the effectiveness of the site response. No change was made to the final rule in response to this comment.

Comment: One industry representative stated that the proposed Section IV.E.8.d requirements that the alternative facility have computers linked to the reactor site and have the capability to perform offsite notifications are inconsistent with Attachment 5 of Bulletin 2005-02. This commenter suggested that the NRC revise Appendix E, Section IV.E.8.d by inserting "(if the emergency operations facility is not performing this action)" after "the capability to perform offsite notifications;" and "(ideally)" before "computer links to the site." [0102]

NRC Response: The NRC agrees in part with the commenter in that the proposed Section IV.E.8.d rule language is not strictly consistent with the wording of Bulletin 2005-02, Attachment 5. The Bulletin stated that the alternative facility should have the "capability to notify offsite response organizations if the emergency operations facility is not performing this action." The intent of Bulletin 2005-02 was to provide a backup capability to perform offsite notifications

if the other licensee emergency response facilities were not available due to a hostile action. In the event of a hostile action, there is no guarantee that the EOF would be available to perform this action. Therefore, the NRC has determined that the capability to perform offsite notifications is a necessary characteristic of alternative facilities.

The NRC also agrees in part with the comment that alternative facilities “ideally” have computer links to the site. The Bulletin stated that alternative facilities should “have general plant drawings and procedures, phones, and (ideally) computer links to the site.” The NRC has determined that since the alternative facility (or facilities) must have the capability for communication with the EOF, control room, and site security; to perform offsite notifications; and for engineering assessment activities, including damage control team planning and preparation, then licensees should have some flexibility in meeting these requirements based on site specific characteristics. Therefore, the NRC is not codifying the equipment that must be present in the alternative facility (or facilities) but rather allows licensees to achieve compliance with the required facility capabilities in a manner deemed most appropriate for their site. Changes were made to the final rule in response to this comment.

Comments: Three commenters presented aspects of the rule that need clarification. [0076, 0084, 0102] One of the commenters stated that the proposed rule is unclear regarding locations for alternate facilities, using terms including: “close to the site,” “geographically separated,” “30 miles... would be too far away,” and “travel quickly to the site.” [0076] Another commenter argued that the NRC should revise the phrase “under threat or actual attack” in Appendix E, Section IV.E.8.d to use the term “hostile action” in order to be consistent with other rule sections. [0084] The third commenter indicated that the use of the parenthetical “(or facilities)” in the same section can be interpreted in multiple ways. [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenters. The location of the alternative facility should be specified in the guidance and not in the rule. This would make any future necessary changes to the distance criteria easier since a guidance document revision can be less complicated and time consuming than rulemaking. No change was made to the final rule in response to this comment.

The NRC agrees with the commenter that the phrase “under threat or actual attack” should be revised to be consistent with other rule sections. Changes were made to the final rule in response to this comment.

The NRC agrees with the comment on the use of the parenthetical “(or facilities).” If licensees use multiple locations to function as the alternative facility, then this phrase could mean that either all the locations must have the characteristics of the alternative facility or that these locations will collectively have those characteristics. To clarify this provision, the NRC changed the final rule language to explicitly state that the alternative facility (or facilities) must collectively have the necessary characteristics. Changes were made to the final rule in response to this comment.

Comment: Another commenter suggested revising Appendix E, Section IV.E.8.d to read: “The requirement for a staging area required by this part may be satisfied by the backup facility, if so established, that meets the requirements of part 8.b of this part.” [0090]

NRC Response: The NRC disagrees with the commenter. The sentence proposed by the commenter would explain one method by which a licensee could comply with a regulatory

requirement. Such language is more appropriately included in guidance. In fact, the NRC has described acceptable facilities for use as alternative facilities in the ISG. No change was made to the final rule in response to this comment.

3.3.2 NSIR/DPR-ISG-01: Draft Interim Staff Guidance – ERO Augmentation and Alternative Facilities

Suggested Revisions to the Draft Interim Staff Guidance

Comments: One commenter suggested revisions to NSIR/DPR-ISG-01, Section IV.D. The commenter stated that the NRC should revise the guidance to reflect the changes that the same commenter suggested for Appendix E, Section IV.E.8.d. In addition, the commenter recommended that the NRC remove the guidance paragraph suggesting that “licensees strongly consider providing “event classification capability” at the alternative facility. The proposed rule does not require an alternative facility to have those capabilities. The commenter argued that the guidance document should not suggest actions beyond guidance for implementing the proposed EP requirements. [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenter. The guidance was not revised to state that the alternative facility should (ideally) have computer links to the site. For the reasons provided in the preceding related comment response, the NRC is not codifying the equipment that must be present in the alternative facility (or facilities), but rather allows licensees the flexibility to achieve the required facility capabilities in a manner most appropriate on a site-specific basis. Changes were made to the ISG in response to this comment.

The NRC also revised the ISG to reflect the change to the final rule that alternative facilities must collectively have the appropriate capabilities. This change was made for the reasons provided in the preceding related comment response.

The ISG wording was revised to state that licensees should “consider” (instead of “strongly consider”) providing the capability for event classification at the alternative facility. This is a primary consideration if the EOF is in close proximity to the plant and would be inaccessible during a hostile action. Then the alternative facility would be the backup to the control room if it somehow lost the capability for event classification. This is guidance only for licensee consideration, and therefore not enforceable. Changes were made to the ISG in response to this comment.

Comment: Another commenter contended that Section IV.D of the guidance document contradicts the proposed rule language in Appendix E, Section IV.E. The rule states that an EOF should be between 10 and 25 miles from the site, and that a backup EOF facility is needed if the EOF is within 10 miles of the site. The guidance document states that it would be appropriate to use the EOF as the alternative facility if the EOF is located outside the owner controlled area and close to the site. The commenter requested clarification of the NRC's intent in the rule language and guidance document pertaining to the location of an alternative facility. [0090]

NRC Response: The NRC disagrees with the commenter. Section IV.D of the ISG does not contradict the rule language. The rule language of Section IV.E.8.d has no distance criteria for

the alternative facility. The language of Section IV.D reads that the alternative facility must be far enough removed from the site to be geographically separated from any hostile action, but within about 30 miles of the site. The EOF (or backup EOF) could function as the alternative facility if one of them meets this criterion. Licensees can also use other buildings, such as training centers, local emergency operations centers, or other enclosed assembly areas, as alternative facilities, and are not bound to use the EOF or backup EOF. No change was made to the final rule or ISG in response to this comment.

3.3.3 Other: ERO Augmentation and Alternative Facilities

Comment: One commenter stated that local emergency personnel should report to the TSC and OSC to participate in the decision-making at these centers, including decision-making for protective actions. [0048]

NRC Response: The NRC disagrees with the commenter. The TSC and OSC are licensee facilities that are located inside the protected area. There is no need for local responders to have access to these facilities because their primary purposes are licensee response and mitigation. The TSC functions to relieve the CR of onsite emergency response so the CR can focus on reactor plant safety. The OSC is an assembly area for site craft personnel who will staff site damage control teams. Protective action decision-making is generally done at local emergency operations centers which are accessible to the local response personnel. No change was made to the final rule or the ISG in response to this comment.

Comment: Another commenter mentioned that the requirements being proposed are similar to the requirements for an EOF. The commenter asked if the proposed change is applicable to licensees that have EOFs near their facilities. [0065]

NRC Response: Licensees must identify alternative facilities to support EOF activities. However, alternative facilities are not required to reproduce the full documentation present at primary emergency response facilities. This change is applicable to all licensees. Licensees with an EOF located near the site must decide if that facility is far enough removed from the site to utilize as the alternative facility. If not, another facility must be selected. No change was made to the final rule or the ISG in response to this comment.

3.4 Licensee Coordination with OROs During Hostile Action

3.4.1 Part 50, Appendix E, Section IV.A.7: Licensee Coordination with OROs During Hostile Action

Disagree with Rule Requirements

Comments: Many commenters disagreed with the proposed rule requirements in Appendix E, Section IV.A.7. Several of these commenters stated that the NRC and NPP licensees should not and do not have the authority to evaluate the appropriateness of ORO staffing, training, or access to response resources. The commenters explained that FEMA performs this function via the radiological emergency preparedness (REP) program and existing mutual aid agreements are in place to supplement response resources when needed. [0067, 0069, 0071, 0076, 0084, 0085, 0090, 0096, 0102, 0107, 0135] As a result, four commenters recommended that the NRC delete these proposed rule requirements. [0071, 0084, 0085, 0107] Three

commenters, suggested revisions to Appendix E, Section IV.A.7 to address these concerns. [0076, 0090, 0102]

NRC Response: The NRC disagrees in part with the commenters. The NRC recognizes that it does not have the authority to evaluate the appropriateness of ORO staffing, training, or access to response resources, and this was not the intent of the proposed rule. However, the NRC does have the authority to verify if a licensee has coordinated with, for example, local law enforcement, firefighting, and medical assistance organizations to respond to an emergency, including a hostile action, through letters of agreement or similar documentation. When the licensee clearly understands what resources will arrive for assistance during a hostile action, the licensee can incorporate logistics and support from OROs into the site's emergency plan. This will allow a licensee to establish in its plan any equipment and logistics support the ORO will require during a response. To clarify the NRC's intent, the proposed rule language was changed in the final rule by eliminating wording that could imply that the NRC has authority to evaluate the appropriateness of ORO activities. The final rule language kept the former rule text and added ", including hostile action at the site" to the end of the rule provision to ensure that each licensee identifies in its emergency plan the ORO resources that the licensee expects to respond to the site during a hostile action. This regulation will require NRC licensees to modify their plans and procedures to more effectively coordinate with OROs the responses to hostile action against the NPP sites. Changes were made to the final rule in response to these comments.

Comment: Another commenter stated that the requirements would force public safety agencies to evaluate the adequacy of mutual aid resources. The commenter further suggested that the requirements would create redundancies and potential conflicts with existing annual letters of certification. [FEMA-2008-0022-0125]

NRC Response: The NRC disagrees with the commenter. The NRC recognizes the need for OROs and licensees to determine that the mutual aid resources are adequate. NRC licensees are required to identify offsite resources that support onsite response during an emergency at the site. Licensees are also expected to review the adequacy of these resources as part of their annual emergency plan review process. State emergency management organizations are also required by FEMA to identify ORO resources relied upon in offsite REP plans and to annually review and document these resources in letters of certification provided to FEMA. The NRC does not agree that the new requirements for licensees would create redundancies or conflicts regarding annual letters of certification. No changes were made to the final rule or the ISG in response to this comment.

3.4.2 NSIR/DPR-ISG-01: Draft Interim Staff Guidance - Licensee Coordination with OROs During Hostile Action

Disagree with Proposed Guidance

Comments: Several commenters expressed opposition to the proposed guidance in the ISG. Five commenters stated that licensees and the NRC should not oversee offsite emergency response capabilities. [0060, 0069, 0100, 0102, 0135] One commenter suggested that the ISG unambiguously define NRC's expectations of licensees (i.e., have memoranda of understanding (MOUs) or LOAs that explain how OROs will provide resources even when their own resources are taxed). [0090] One commenter

recommended deleting the paragraph on page 19 of the ISG that starts off with “ORO should” The commenter also stated that the sections of the ISG on pages 19 and 20 that require the licensee to verify ORO program elements should be modified or deleted. [0060] Another commenter stated that those sections “required” licensees to verify ORO program elements, and should be deleted. [FEMA-2008-0022-0125]

NRC Response: The NRC agrees in part with the commenters. Certain aspects of the proposed changes to the ISG recommended by the commenters are attempting to clarify expectations raised by the proposed rule language. As described in previous comment responses, the NRC modified Section IV.A.7 of Appendix E in the final rule. Corresponding changes were made to the ISG in response to these and previous comments for the reasons provided in related previous comment responses. As clarification, the ISG is not a requirement and provides examples and/or ways to meet the requirements.

Comment: Another commenter urged that more specific, enforceable, performance-based standards for OROs need to be imposed. [0109]

NRC Response: The NRC disagrees with the commenter. The criteria for all of the demonstrable activities by OROs are outside of the NRC’s authority. No change was made to the final rule or the guidance documents in response to this comment.

Disagree with Guidance Specific to Hostile Action

Comments: Two commenters argued that the distinct guidance provided for hostile action was not necessary. [0100, 0102] One of the commenters suggested that by proposing a separate set of expectations for hostile action, the ISG is in direct contrast with the goal of Presidential Directives, which seek to integrate the management of domestic incidents. [0102] The other commenter asked how a hostile action differs from a natural disaster, explaining that both types of events result in demand for limited resources. [0100]

NRC Response: The NRC disagrees with the commenters. Presidential Directives are not requirements for licensees, but licensees can voluntarily enhance their programs by adopting sound management principles of incident guidance at NPPs. The establishment of a separate set of expectations for hostile action affords the licensees the opportunity to ensure adequate planning, training, and interaction with OROs for this specific type of event which meets the goals of Presidential Directives. The NRC also disagrees with the comparison of natural disasters with hostile actions since there are unique aspects of a hostile action that are not paralleled by natural disasters. For example, a decision by the unified command to evacuate personnel while an NPP is experiencing a hostile action may place individuals in danger. In contrast, during natural disasters, emergency responders are free to move around the site without fear of weapons being fired at them. No change was made to the final rule or the guidance documents in response to these comments.

3.4.3 Other: Licensee Coordination with OROs During Hostile Action

General Disagreement

Comments: Six commenters opposed the use of the word “ensure” in the proposed rule and guidance. [0062, 0063, 0065, 0084, 0096, 0107] The commenters suggested that licensees would not be able to guarantee or “ensure” the availability of local resources during a hostile

action. Instead, many of these commenters suggested that licensees only be responsible for reviewing plans and MOUs, and that the NRC should rely on NIMS and State laws to “ensure” adequate resources. One commenter indicated that existing “State of Emergency” laws and regional public safety agency compacts already ensure the availability of offsite resources. The commenter claimed that the NRC’s proposed requirements are unnecessary and would force OROs to generate and maintain additional MOUs. [FEMA-2008-0022-0125] One commenter stated that local governments will have additional duties to assist special groups in the emergency planning zone (EPZ), such as transportation-dependent groups. [0048] Another commenter disagreed with the new requirements because they would increase the burden on State and local government, and could affect the quality of emergency response. [0106]

NRC Response: The NRC agrees in part with the commenters. With the proposed rule language, the NRC did not intend to mandate that licensees require OROs to ensure the availability of resources during a hostile action. The requirement in the final rule is for each licensee to identify and provide a description of the resources required for a response to a hostile action and the expected assistance from those resources in the licensee’s emergency plan. By the licensee listing these ORO resources in its plan, the licensee can review them with the OROs during licensee plan reviews.

MOUs or other agreements between licensees and OROs are required to identify in advance the offsite resources that may need to respond quickly for many types of emergencies at NPPs without having to rely on the declaration of a state of emergency by offsite authorities first. Maintaining such agreements is in the best interest of licensees for the protection of the public health and safety. MOUs may need to be amended to explicitly include hostile actions at the site among the types of emergencies to which OROs will respond. Changes were made to the final rule in response to these comments.

More Guidance Needed

Comments: Two commenters argued that the NRC needs to provide additional guidance. [0065, 0102] One of the commenters suggested that guidance is needed to clarify the acceptability of ORO capabilities (i.e., quantity and type of personnel). [0065] The other commenter stated that in order to understand NRC’s expectations regarding OROs, licensees need guidance clarifying the extent of the radiological release that must be planned for in the event of a hostile action. [0102] The same commenter also indicated that the NRC did not provide specific guidance bounding the threat level beyond the DBT. [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenters. The NRC agrees with the commenter that clarification is needed on the expectation related to ORO responders. The NRC does not intend to require that licensees determine the acceptability of ORO capabilities. The language was revised in the final rule to require licensees to identify and describe the assistance expected from OROs to respond to an emergency, including hostile action, at each site. The NRC disagrees with the commenter regarding the need for guidance clarifying the extent of the radiological release that must be planned for in the event of a hostile action. The current EP planning basis for radiological releases won’t change for releases caused by equipment damage due to hostile action. The comment regarding specific guidance for bounding of the DBT lacks specificity and cannot be assessed by the staff. Changes were made to the final rule in response to these comments.

3.5 Protection of Onsite Personnel

3.5.1 Part 50, Appendix E, Section IV.I: Protection of Onsite Personnel

Support of the Proposed Requirements

Comment: One commenter stated that the proposed requirement for onsite protective actions is consistent with the guidance it is meant to codify. [0102]

NRC Response: No response is necessary.

Opposition to the Proposed Requirements

Comment: One commenter suggested that the proposed rule was unnecessary because 10 CFR 50.47(b)(10) requires licensees to develop a range of protective actions for emergency workers and the public. The commenter stated that NRC should have considered adding evaluation criteria to Section II.J in NUREG-0654. [0135]

NRC Response: The NRC disagrees with the commenter. Although 10 CFR 50.47(b)(10) requires licensees to develop a range of protective actions for emergency workers and the public, the same actions may not be appropriate to take during hostile action. This new requirement ensures that licensees identify appropriate pre-planned actions to protect emergency responders who are expected to implement the emergency plan and licensee personnel responsible for safely shutting down the reactor in the event of hostile action. Adding an evaluation criterion to guidance (i.e., NUREG-0654) would not ensure that licensees would continue to provide the appropriate protective actions for these types of events. No changes were made to the final rule or ISG in response to this comment.

Suggested Revisions to the Proposed Requirements

Comment: One commenter objected to a “lack of specificity” in the proposed rule with regard to the protection of onsite personnel. The commenter stated that the NRC should require specific actions of licensees in order to actually improve the health and safety of onsite personnel. [0072]

NRC Response: The NRC disagrees with the commenter. While the final rule requires licensees to provide for the protection of onsite personnel, the range of protective actions will vary between sites. These protective actions will be specific to each site based on the physical layout of the site and the process for responding to an emergency. Guidance is provided in Bulletin 2005-02, Attachment 4, “Example Tools for the Development of Onsite Protective Measures,” and licensees have already incorporated these protective actions in their procedures. NSIR/DPR-ISG-01 also provides additional guidance to licensees regarding the protection of onsite personnel. No change was made to the final rule or the guidance documents in response to this comment.

3.5.2 NSIR/DPR-ISG-01: Draft Interim Staff Guidance – Protection of Onsite Personnel

Suggested Revisions to the Draft Interim Staff Guidance

Comment: Two commenters stated that some licensees may utilize multiple operations procedures in response to security events, rather than a single procedure. [0102, 0103] One of the commenters suggested that the NRC revise a sentence in Section IV.F to read: “Licensees should consider developing procedures outlining station actions in response to security events.” [0102]

NRC Response: The NRC agrees in part with the commenters. The ISG uses the language “operations procedure” to refer to the main procedure describing actions by operations personnel in response to hostile action and providing for protective measures that site personnel would be directed to take during such events. The NRC does not agree that a single procedure be developed for hostile action. The procedures for these events are written in the format of site specific emergency procedures and the event will determine procedure usage. A single procedure for all possible events would not be effective. No changes were made to the ISG in response to these comments.

Comment: One of the commenters also stated that some licensees may not have procedures in place for communication between security and site management. Accordingly, the commenter suggested adding “Examples of these communications should be placed in site procedures” in Section IV.E immediately after “Site management should be continually aware of the site security status and avoid actions that would potentially place onsite personnel in a dangerous environment.” [0102]

NRC Response: The NRC disagrees with the commenter. Licensees have in place procedures and processes for communication between site security and the site CR/Emergency Director during routine operations and emergencies as required by 10 CFR Part 50, Appendix E, Sections IV.C, and IV.D. Licensees also modified and/or developed site specific procedures that define the communications between security and management as outlined in Bulletin 2005-02. No change was made to the ISG in response to this comment.

Comment: The other commenter objected that the NRC should not stipulate the content of the plant page announcement during a security event. The licensee should have the ability to tailor its announcement to the specific situation. [0103]

NRC Response: The NRC agrees with the commenter. However, neither the rule nor guidance stipulates the content of the plant page announcement. The licensee has been given latitude within existing regulations for procedural incorporation of appropriate content for the page announcement during a hostile action. No change was made to the final rule or the guidance documents in response to this comment.

3.5.3 Other: Protection of Onsite Personnel

No comments addressed this issue.

3.6 Challenging Drills and Exercises

3.6.1 Part 50, Appendix E, Section IV.F.2.a: Challenging Drills and Exercises

Change the Six-Year Exercise Cycle to Eight Years

Comment: Several commenters recommended that the NRC move to an eight-year schedule to allow OROs and licensees to demonstrate all of the exercise requirements. [0060, 0068, 0069, 0071, 0085, 0096, 0102]

NRC Response: The NRC agrees with the commenters. An 8-year cycle would allow more flexibility in scheduling the various exercise scenario requirements while maintaining challenging scenarios and additionally places the appropriate emphasis on hostile action scenarios. Changes were made to the final rule in response to this comment.

Support for the Proposed Rule Language

Comment: One commenter stated that the proposed changes to Appendix E, Section IV, pertaining to drills and exercises are acceptable. [0102]

NRC Response: No response is necessary.

Comments: One commenter offered two suggestions related to the proposed language in Appendix E, Section IV.F.2. First, the commenter stated that the reference to testing of the “public notification system” is unclear (i.e., is this the “alert and notification system” or something different?). The commenter also recommended that a conforming change to 10 CFR 50.4 is needed because 10 CFR 50.4 only references submittal of emergency plans, changes to emergency plans, and emergency plan implementing procedures. [0084]

NRC Response: The NRC agrees in part with the commenter. Appendix E, Section IV.F.2 of the proposed rule included the term “public notification system” whereas the term “public alert and notification system” was used elsewhere. Changes were made to the final rule in response to this comment.

The NRC disagrees that a conforming change to 10 CFR 50.4 is needed. The commenter referred to 10 CFR 50.4(b)(5), which provides instructions concerning the persons at the NRC to whom an emergency plan, an emergency plan change, or emergency implementing procedures should be submitted. Exercise scenarios would not fall under one of these categories in 10 CFR 50.4(b)(5). Exercise scenarios should be submitted under 10 CFR 50.4(a). No change was made to the rule in response to this comment.

3.6.2 Part 50, Appendix E, Section IV.F.2.b: Challenging Drills and Exercises

Comments: One commenter argued that the list of skills in Appendix E, Section IV.F.2.b needs to be more specific. The commenter suggested that the proposed language should be changed to make it clear that hostile action exercises must focus on both onsite and offsite training objectives. [0072]

NRC Response: The NRC disagrees with the commenter. The list of skills in Appendix E, Section IV.F.2.b of the proposed and final rules is much more specific than the former Section IV.F.2.b requirements, and the requirements are further elaborated upon in guidance.

The NRC disagrees that the proposed language should be changed to make it clear that hostile action exercises must focus on both onsite and offsite training objectives. Exercises always focus on both onsite and offsite demonstration objectives, and it is not clear what value could be added by making the change suggested by the commenter due to the comment's lack of specificity. No change was made to the final rule in response to these comments.

3.6.3 Part 50, Appendix E, Section IV.F.2.i: Challenging Drills and Exercises

Comments: With regard to Appendix E, Section IV.F.2.i., two commenters suggested that the exercise scenario requirements are more appropriate for a guidance document than rule language. [0084, 0135] Another commenter urged that more specific guidance is needed to provide boundaries on the threat levels beyond the DBT that EP exercises would have to cover. The commenter recommended that the NRC remove the requirement to perform hostile action exercises where more than a minimal radioactive release is assumed until more specific guidance bounding such exercises is developed. [0102]

NRC Response: The NRC disagrees with the commenters. Specific guidance is not necessary regarding threat levels beyond the DBT. Drill and exercise scenarios typically exceed the design basis and, in the case of hostile action scenarios, may be assumed to exceed the DBT. If they did not, there would be no demonstration of the key skills of emergency response because the plant design addresses the design basis accident. This is the case for the typical plant equipment failure scenarios as well as hostile action scenarios. The plant is designed to cope with design basis accidents and the security force is designed to cope with the design basis threat. However, there is no need to specify the threat or the security response to the threat in scenarios because this could involve safeguards information and adds no value for demonstration of emergency response. The guidance for hostile action scenarios specifies the need to demonstrate the key skills involved with recovery of damaged systems. The actual threat does not need to be described in any detail. No change was made to the final rule in response to these comments.

The NRC disagrees that scenario requirements should only be given in guidance. The specific requirements in the final rule are considered the minimum needed to ensure consistent implementation. As noted in the proposed rule SOC, the NRC identified several concerns with the content of exercise scenarios and undertook rulemaking to remedy the situation. Guidance alone would not allow consistent implementation and enforcement. No change was made to the final rule in response to these comments.

3.6.4 Part 50, Appendix E, Section IV.F.2.j: Challenging Drills and Exercises

Scenarios with No or Minimal Radiological Releases

Comments: Two commenters opposed the proposed rule requirement that some exercises involve scenarios with no or minimal radiological releases. The commenters stated that these exercises would not test many of the FEMA evaluation criteria for OROs. [0068, 0072] Another commenter suggested that hostile action exercises may not demonstrate reasonable assurance from FEMA's perspective because these scenarios may not include events needed to allow offsite agencies to demonstrate their FEMA objectives. [0135]

NRC Response: The NRC disagrees in part with the commenters. The proposed rule SOC stated many reasons for requiring variation in exercise scenario content, including radioactive release. The former system, which predictably resulted in large releases, caused negative training. Accident analyses indicate that reactor accidents would not likely result in large releases and that if they did, the accident would not resemble the timing of events often used in exercise scenarios (e.g., NUREG-1150, "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants, Final Summary Report"). In some past emergency responses, ORO personnel implemented actions inappropriate for the level of emergency, likely due to training received in exercises based on unrealistic scenarios. This results from the use of scenarios that always proceed to a large release and where preemptive actions are always correct. The commenters are correct in that exercises without large radiological releases may not train all aspects of on-site and off-site response. However, the NRC maintains that demonstration of protective action decision making when evacuation or sheltering is not appropriate must be evaluated. The NRC staff has reviewed FEMA's evaluation methodology with FEMA staff and determined that if an exercise with no or minimal release does not provide all necessary demonstrations to meet FEMA objectives, then alternative methods for demonstration and evaluation of FEMA objectives are available. However, any scenario, including a hostile action scenario that includes a significant radiological release and a General Emergency, would be sufficient to allow OROs to demonstrate FEMA objectives. The NRC expects that OROs and FEMA will develop an extent of play agreement to ensure understanding of the necessary demonstrations, as has been the practice for many years. No change was made to the final rule in response to these comments.

Length of the Exercise Cycle

Comment: A commenter suggested that hostile action exercises should occur more often than once every eight years. [0072]

NRC Response: The NRC disagrees that hostile action exercises should occur more often than once in eight years. An eight-year exercise cycle increases the variability of the required scenario elements as well as those contained in guidance. If the hostile action exercise were performed more often than once per cycle, it would reduce the level of variability and unduly emphasize one scenario over others. No change was made to the final rule in response to this comment.

Other Comments

Comment: One commenter noted that the first mention of the joint information center (JIC) is in Appendix E, Section IV.F.2.j of the proposed rule. The commenter recommended that the NRC clarify the requirements for the JIC. [0084]

NRC Response: The NRC disagrees that the requirements for the JIC need to be clarified. Requirements for JICs exist in 10 CFR 50.47(b)(7). The NRC did not propose new requirements except that licensees need to demonstrate during exercises the key skills specific to emergency response duties in the JIC. No change was made to the final rule in response to this comment.

Comments: Two commenters argued that the proposed changes in this section of the rule do not fix the predictability of exercises. The commenters suggested that the added exercise

elements make the exercises just as predictable as before the rule. [0096, 0135] One of the commenters made three suggestions to improve Appendix E, Section IV.F.2.j. First, the commenter suggested that the NRC delete the reference to 10 CFR 50.54(hh). In addition, the commenter urged the NRC to remove the requirement that hostile action drills be evaluated. Instead, the commenter suggested that hostile action drills be incorporated into NRC's triennial force-on-force (FOF) drills. [0096]

NRC Response: The NRC disagrees with the commenter. The final rule improves scenario variability. Under the former regulation, all exercise scenarios resulted in large releases and very unlikely accidents. By requiring different types of releases and other scenario elements, the final rule adds variability to the scenarios.

The NRC disagrees that the reference to 10 CFR 50.54(hh) be removed or that hostile action scenarios be performed in FOF exercises. The NRC added the use of mitigation equipment and procedures required by 10 CFR 50.54(hh)(2) and response to hostile action because they are important elements of nuclear plant defense-in-depth. Including the use of 10 CFR 50.54(hh)(2) equipment in FOF exercises would be inappropriate because the security responders would not use this equipment. Rather, use of 10 CFR 50.54(hh)(2) equipment would await the activation of the ERO, and their skills are demonstrated in biennial exercises. Additionally, the NRC has previously determined that combining EP and FOF drills would be extremely complicated due to differences in scope and the introduction of safeguards information issues. Further, the exercises are easily separated and performance addressed individually as the response is essentially serial. The aftermath of a security response can be simulated effectively in EP exercises. This has been demonstrated during the hostile action drill pilot program. No change was made to the final rule in response to these comments.

3.6.5 NSIR/DPR-ISG-01: Draft Interim Staff Guidance – Challenging Drills and Exercises

Type of Radiological Release During Scenarios

Comments: Two commenters suggested changes to the ISG related to the type of radiological release assumed during scenarios. The commenters stated that the following statement on page 29 of the ISG should be deleted: "Scenarios with no or an unplanned minimal radiological release should not be used in consecutive HAB exercises." [0060, 0102] One of the commenters argued that the statement specifies a sequence, which is predictable. This commenter urged that determination of release or no release and size of release should be left up to the scenario development team and should not be prescribed by the ISG. [0102]

NRC Response: The NRC agrees that statement "Scenarios with no or an unplanned minimal radiological release should not be used in consecutive hostile action based exercises" should be removed from the ISG. Changes were made to the ISG in order to allow more variability in scenario content during an exercise cycle.

Comment: A commenter argued that hostile action exercises should be limited to no release or minimal radiological release options as was demonstrated during the Phase 3 pilot drill program. [0102]

NRC Response: The NRC disagrees with the commenter. The proposed rule established significant variation in scenario content and other enhancements to the former requirements. There is no need to limit licensee flexibility to vary scenario content by requiring that hostile action scenarios only have a minimal or no release. Hostile action is one of many potential, but unlikely, initiating events that can be used in exercise scenarios. The NRC intends that the rule foster increased scenario variation for the many reasons stated in the SOC. No change was made to the ISG in response to this comment.

Length of the Exercise Cycle

Comment: A commenter suggested that Evaluation Criterion N.1.b is unacceptable because HSEEP requires a five-year planning cycle, rather than six years. [0100]

NRC Response: The NRC disagrees with the commenter. The NRC has determined that a longer exercise cycle will foster greater scenario variation while the shorter cycle of HSEEP would detract from scenario variation, limit flexibility, and increase predictability. No change was made to the ISG in response to this comment.

Other Comments

Comment: One commenter suggested that the ISG should include the NRC staff's expectation for licensees with multiple units at a single site with different reactor designs but a common site emergency plan. The commenter stated that the NRC's expectation should be that exercise demonstration would be rotated between the reactors with differing reactor designs and their respective supporting EROs. [0049]

NRC Response: The NRC agrees that the ISG should include the NRC staff's expectation for licensees with multiple units at a single site with different reactor designs but a common site emergency plan. Changes were made to the ISG in response to this comment.

Comment: A commenter argued that the ISG is unnecessarily prescriptive with regard to the conduct of drills and exercises. [0090]

NRC Response: The NRC disagrees with the commenter. The ISG is not overly prescriptive in that it provides licensees with flexibility by suggesting that some scenario elements may be performed in drills if not done in exercises. Section 50.47(b)(14) of the NRC's regulations requires that licensees exercise major portions of capabilities and licensees should already be developing scenarios to meet that requirement. The elements of the ISG articulate and clarify NRC expectations for drill and exercise scenarios. No change was made to the ISG in response to this comment.

Comments: One commenter suggested that the reason there are predictable elements to the exercise is that the NRC and FEMA require certain objectives be met by the ERO and OROs. The commenter also stated that exercises should be designed to allow enough time to adequately test the emergency plan and work the emergency plan. [0100]

NRC Response: The NRC agrees that the reason there are predictable elements to the exercise is due to NRC and FEMA requirements. The final rule improves the variability of scenarios and does not prevent scenario structure to allow time to test the plan. No change was made to the ISG in response to these comments.

Comment: Another commenter suggested that hostile action exercises should be tested or demonstrated outside of the biennial exercise cycle as other required elements are (i.e., after hours exercises). [0114]

NRC Response: The NRC disagrees with the commenter. The NRC originally proposed such a system several years ago. However, the nuclear power industry counter-proposed to include hostile action scenarios in biennial exercises. The NRC accepted that proposal and significant effort has been invested in achieving that goal. For example, every nuclear power plant site has conducted a pilot hostile action drill. There is no technical reason to now reverse this course of action. No change was made to the ISG in response to this comment.

Comments: One commenter disagreed with a statement in the last paragraph on page 23 of the ISG that states, “regulatory changes would be necessary to require enhancement of scenario content.” The commenter argued that licensees are capable of addressing variations of scenarios by using guidance versus rulemaking. The commenter also disagreed with a statement on page 24 in the second paragraph. The commenter suggested that the statement that drill programs provide “the same negative training as found in the biennial exercise” is a generalization that does not apply to much of the industry. With regard to the last paragraph on page 24 of the ISG, the commenter stated that many of the elements listed are currently required by FEMA requirements and expectations to satisfy adequate offsite preparedness. In addition, the commenter recommended that the statement addressing PARs should clarify that plant conditions should be the initial driver of PARs, but may be supplemented by radiological assessment. [0114]

NRC Response: The NRC disagrees in part and agrees in part with the commenter. Regulatory changes are necessary to require the enhancement of exercise scenario content. The NRC cannot use guidance to impose requirements on licensees, and the NRC’s former regulations did not allow the NRC to require licensees to improve their exercise scenario content. Therefore, rulemaking is necessary to achieve consistent improvement in scenario content. No change was made to the ISG in response to this comment.

The NRC agrees that the statement that drill programs provide “the same negative training as found in the biennial exercise” is a generalization that does not apply to much of the industry. The wording was changed in the ISG to indicate a trend rather than an absolute statement of fact.

The NRC disagrees that the ISG statement addressing protective action recommendations (PARs) should clarify that plant conditions should be the initial driver of PARs, but may be supplemented by radiological assessment. However, this guidance is provided in the revision of NUREG-0654, Supplement 3, Draft Report for Comment, “Guidance for Protective Action Recommendations for General Emergencies,” (Agencywide Documents Access and Management System (ADAMS) Accession No. ML1001502680) and need not be repeated in the ISG. Changes were made to the ISG to remove this statement.

Comment: With regard to Evaluation Criterion N.1.a, one commenter argued that the NRC and FEMA must synchronize HSEEP and REP regulations and other exercise requirements. [0100]

NRC Response: The NRC agrees that NRC and FEMA should consider synchronizing HSEEP and EP regulations and other exercise requirements. In the proposed rule, the NRC did not

propose that NPP licensees be subject to HSEEP. The NRC maintains this position in the final rule. Because the exercise requirements and guidance for OROs and NPP licensees are not the same, the NRC and FEMA are exploring methods to integrate nuclear power plant EP oversight with broader national level preparedness initiatives. No change was made to the ISG in response to this comment.

Comments: With regard to Evaluation Criterion N.1.b, one commenter opposed the requirement for a rapid escalation to an SAE or GE because it “does nothing, exercise-wise, except make participants scramble.” The commenter also asked what the NRC means by: “Implementation of strategies, procedures, and guidance developed under 10 CFR 50.54(hh).” The commenter also suggested that the scenario bullet, “Hostile action directed against the plant site,” is equivalent to the scenario variation bullet entitled, “Integration of offsite resources with onsite response.” [0100]

NRC Response: The NRC disagrees that a rapid escalation to an SAE or GE does nothing except make participants scramble. The rapid escalation element provides more realistic scenarios than the current slow progression and increases scenario variability, thereby enhancing participants’ training. No change was made to the final rule or the guidance documents in response to this comment.

Section 50.54(hh) requires that licensees develop procedures to respond to an aircraft threat and develop guidance and strategies to restore core cooling capabilities after the loss of large areas of the plant due to explosion or fire. The NRC expects that these capabilities will be developed and maintained through the drill and exercise program.

The NRC disagrees that the scenario bullet entitled, “Hostile action directed against the plant site,” is equivalent to the scenario variation bullet entitled, “Integration of offsite resources with onsite response.” Integration of offsite and onsite response need not include a hostile action; it could be in response to a fire or medical emergency. However, hostile action challenges emergency response in unique ways and the NRC expects that key skills will be developed and maintained through the drill and exercise program. No change was made to the final rule or guidance documents in response to this comment.

Comments: A commenter stated that Evaluation Criterion N.1.c. conflicts with the 9th bullet on page 29 of the ISG, which reads: “Real-time staffing of facilities during off-hours (i.e., 6:00 pm to 4:00 am) (need not be performed in an exercise).” [0100] Another commenter urged the NRC to include guidance in the ISG calling for rapidly escalating drills on a more regular basis. The commenter also suggested that the guidance not allow licensees to only escalate to an SAE. [0109] A commenter opposed Evaluation Criterion N.1.c because it would intrude on FEMA’s area of responsibility. According to the commenter, FEMA determined that there was no need or requirement for offsite organizations to participate in off-hours or unannounced evaluated exercises. [0100] Another commenter disagreed with Evaluation Criterion N.1.c that drills and exercises need to be performed under various weather conditions. The commenter stated that EAL conditions can be simulated. Further, the commenter recommended that the NRC needs to clarify Evaluation Criterion N.1.c so that the word “Some” is quantified or deleted. [0114]

NRC Response: The NRC agrees in part and disagrees in part with the commenters. The guidance for “Real-time staffing of facilities during off-hours (i.e., 6 00 pm to 4 00 am) (need not be performed in an exercise),” does not conflict with Evaluation Criterion N.1.c. Both items could be met with an off-hours drill but need not be. Real-time staffing could also be achieved

during a call out drill to test activation capability. No change was made to the final rule or the ISG in response to this comment.

The NRC disagrees that it should include guidance in the ISG calling for rapidly escalating drills on a more regular basis or that the guidance be changed to prevent licensees to only escalate to an SAE. The final rule requires licensees to include in each eight calendar year exercise cycle at least one exercise to include rapid escalation. It is the NRC's experience that elements required in exercises are practiced in drills. In effect, the rule requirement will cause many licensees to include this element in drills, even though it is not required and that will cause it to be practiced more often than the rule itself requires.

The rule allows but does not require rapid escalation to a GE. Licensees may meet the requirement by escalation to an SAE. This element will improve scenario variability and realism with respect to the practice under the previous regulations. No change was made to the final rule or the ISG in response to this comment.

The NRC disagrees that there is a requirement for offsite organizations to participate in off-hours or unannounced evaluated exercises. Evaluation Criterion N.1.c. does not require offsite participation and may be performed in a utility only drill. No change was made to the final rule or the ISG in response to this comment.

The NRC agrees that drills and exercises need not be performed under various weather conditions. The licensee has no control over weather and should not be required to simulate weather conditions. Changes were made to the ISG in response to this comment.

The NRC agrees that the word "Some" in Evaluation Criterion N.1.c should be clarified. The ISG was revised to change "Some" to "At least one."

Comment: Another commenter recommended that the NRC modify NUREG-0654 by updating Evaluation Criterion N.2.e as follows:

"Evaluation Criterion N.2.e is being updated to reflect current regulatory positions and industry operating experience.

e. Health Physics Drills

Health Physics drills shall be conducted semi-annually which involve responses to abnormal radiological conditions. These conditions may include simulated elevated airborne and/or liquid radioactivity levels both in-plant or in the environment." [0102]

NRC Response: The NRC agrees that these changes could enhance guidance. However, the final rule does not require revision of this portion of the guidance. The NRC expects to revise NUREG-0654 in the future and this item could be addressed at that time. No change was made to the final rule or guidance documents in response to this comment.

Comments: One commenter suggested that the statements in the third paragraph on page 30 of the ISG should be reconsidered. The commenter stated that NRC approval of scenarios likely will delay the development of the final product. The commenter argued that this approval process would add unnecessary administrative burden. [0114]

NRC Response: The NRC disagrees in part with the commenter. The language in the ISG with which the commenter takes issue is based on the proposed rule requirement that would have required the NRC to review and approve all biennial exercise scenarios. The final rule maintains the review requirement because recent NRC experience shows that some licensees have not improved scenario content and in some cases have presented scenarios that were not challenging. The review of scenarios will eliminate this issue. However, the NRC will not approve exercise scenarios and will provide comments to the licensee if concerns are noted. The final rule requires licensees to submit scenarios to the NRC at least 60 days before the start of the biennial exercise. The NRC will provide the licensee with any comments no later than 30 days before the exercise begins. The final rule and ISG were revised in response to this comment.

Comment: A commenter suggested the NRC add the following language to the ISG to be consistent with NRC Inspection Procedure 71114.01:

“A licensee may conduct a Hostile Action-Based (HAB) drill immediately prior to an HAB exercise. The hostile action (attack) should be varied between the two scenarios, e.g., attack type or direction, number of attackers, attack timeline, damage, results and consequences, etc. It is recognized that the planning, scheduling and logistical arrangements necessary to conduct a HAB drill or exercise challenge the normal expectations for scenario confidentiality, i.e., some participants may know that an HAB scenario will be used in a drill or exercise. Under no circumstances may a participant know any details of the scenario (i.e., specific event timeline and related information).” [0102]

NRC Response: The NRC agrees in part with the commenter with regards to normal expectations for scenario confidentiality. A portion of this language would add value to the ISG, but the number of attackers, the timeline, etc. is not necessary for an exercise scenario. Changes were made to the ISG in response to this comment.

Recommendations on ISG

Comments: An industry representative suggested a variety of changes to the guidance in the ISG. These comments and recommendations are discussed in detail below. [0102]

Section IV.G, Challenging Drills and Exercises, Page 27

With regard to the fourth bullet under the six-year cycle requirements in Evaluation Criterion N.1.b, the commenter recommended that the NRC revise the ISG as follows: “Implementation of strategies, procedures and guidance developed under 10 CFR 50.54(hh)(2). Actual movement and operation of equipment may be simulated.” The commenter suggested that as currently written, the ISG would require a licensee to conduct an aircraft threat HAB exercise once every six years and would not allow land or waterborne threat scenarios. The commenter recommended that the NRC carefully consider the implications of the guidance on the exercise submittal, review, approval, and implementation process because these scenarios could meet the safeguards information (SGI) threshold (e.g., target set information), or otherwise provide information advantageous to an adversary. According to the commenter, EP exercise scenario materials are provided to personnel outside of the licensee’s control. [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenter. The NRC disagrees that the ISG would require a licensee to conduct an aircraft threat hostile action exercise once every six years and would not allow land or waterborne threat scenarios. The ISG allows simulation of equipment operation, and the simulation could be used in response to any loss of cooling capacity or containment regardless of the initiating condition. Further, the demonstration may be performed during drills in addition to the demonstrations required in exercises to allow both armed attack and aircraft attack to be included in scenarios. No change was made to the ISG in response to this comment.

The NRC agrees that it should provide guidance with respect to handling SGI in drill and exercise scenarios. The NRC recognizes the importance of properly maintaining SGI. Nothing in the ISG requires that SGI be included in a scenario. Guidance was added to the ISG in response to this comment.

Section IV.G, Challenging Drills and Exercises, Page 28

Comment: With regard to the second bullet, the commenter recommended that the NRC revise the ISG as follows: “Shift staff response to an emergency initiating condition (e.g., a plant transient, fire, natural phenomenon, etc.) while implementing the emergency plan.” The commenter explained that some drills or exercises start off with non-operational events that do not cause a plant transient (e.g., a fire, a gas release, a small earthquake). [0102]

NRC Response: The NRC agrees that some drills or exercises may start with non-operational events that do not cause a plant transient. Changes were made to the ISG in response to this comment.

Comment: With regard to the seventh bullet, the commenter suggested that the NRC revise the ISG as follows: “Development and implementation of radiological protective actions for onsite workers as appropriate to the exercise scenario.” The commenter stated that the added text clarifies the NRC’s intent regarding the selection of worker protective measures. [0102]

NRC Response: The NRC agrees that the statement in the ISG should be clarified to state that radiological protective actions for onsite workers should be appropriate to the exercise scenario. Changes were made to the ISG in response to this comment.

Comment: With regard to the ninth bullet, the commenter recommended that the NRC revise the ISG as follows: “Accident mitigation through the simulated repair of equipment.” The commenter suggested that the term “simulated physical” is confusing. In addition, the commenter deleted “physical” because contact with plant equipment is not allowed during drills and exercises. [0102]

NRC Response: The NRC agrees that the term “simulated physical repair” is confusing. Changes were made to the ISG in response to this comment.

Section IV.G, Challenging Drills and Exercises, Page 29

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter suggested that the NRC revise the first bullet as follows: “Demonstration of all functions in each ERF (e.g., all ERFs that are responsible for dose assessment perform those duties in response to a

radiological release). Demonstration of a function may be performed out-of-sequence from the main scenario timeline, or as a stand-alone activity.” The commenter stated that the suggested approach will avoid the need to present an unlikely series of events which may have adverse effects on other aspects of the drill, and will promote more realistic scenario content and timing. In addition, the commenter suggested that the revised version aligns better with the proposed rule in Appendix E, Section IV.F.2. [0102]

NRC Response: The NRC agrees with the commenter. The emergency response facility (ERF) functions may be performed out-of-sequence from the main scenario timeline, or as a stand-alone activity. Since the requirement is for a drill and exercise cycle, not just for exercises, these elements could be performed during drills, which could be quite limited in scope (e.g., a stand-alone activity) and yet be acceptable. The NRC did not intend to require these functions to be performed in a single scenario because this would lead to highly unlikely event timing. Changes were made to the ISG in response to this comment.

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter recommended that the NRC revise the third bullet as follows:

“The ability to assess and simulate repair of critical equipment damaged by hostile action after the active attack. This includes engineering support, repair plan development, and formation and dispatch of repair teams. Dispatch of repair teams would occur when security and LLEA have determined that the site is secure enough to allow prioritized, limited movement of personnel.” [0102]

NRC Response: The NRC agrees in part that simulated repairs be performed after an active attack has ended. However, this element may be performed before the site is deemed totally secure, as security sweeps and crime scene activities could take a day or more to accomplish and urgent safety related repairs cannot await completion of those activities. The guidance can be more flexible, but the scenario must provide opportunity for demonstration of prioritization of security resources to protect repair teams and allow rapid response to plant damage caused by hostile action. Changes were made to the ISG in response to this comment.

Comment: The commenter stated that the language of the third bullet in the list of “scenario elements” conflicts with the discussion of the alternate facility in Section IV.D, which stated that personnel would move after or when the site is secured. [0102]

NRC Response: The NRC agrees with the commenter. The intent of the third bullet is that personnel would move when it is safe to do so, but would demonstrate the capability to support the damage control efforts before the site is fully secured and/or all crime scene activities have been completed. Changes were made to the ISG in response to this comment.

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter recommended that the NRC revise the fourth bullet as follows: “Response to a scenario with radiological release that requires public protective actions, and response to a scenario with no radiological release or an unplanned minimal radiological release that does not require public protective actions.” The commenter suggested that the revision will promote greater diversity (and unpredictability) of scenarios. [0102]

NRC Response: The NRC agrees that the proposed wording will promote greater diversity (and variability) of scenarios. Changes were made to the ISG in response to this comment.

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter recommended that the NRC revise the seventh bullet as follows: “The successful repair of simulated damaged equipment to prevent or mitigate loss of the fuel clad, reactor vessel or containment barriers, and/or restore a ‘defense-in-depth’ capability (twice per exercise cycle).” The commenter argued that the revision improves clarity. [0102]

NRC Response: The NRC agrees in part with the commenter. The ISG was revised to include reactor pressure boundary, instead of limiting the scenario element to the reactor pressure vessel. However, the NRC does not agree with inclusion of the “defense in depth” statement. This element could weaken the response demonstration (e.g., repair of an emergency generator not currently needed to protect fission product barriers) by not focusing on the licensee’s demonstration of its ability to initiate damage control activities to mitigate a core damage sequence. Changes were made to the ISG in response to this comment.

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter recommended that the NRC revise the eighth bullet as follows: “The use of alternative facilities to stage the ERO for rapid activation during a hostile action (need not be performed in an exercise).” The commenter added the phrase “(need not be performed in an exercise)” to allow licensees additional flexibility. [0102]

NRC Response: The NRC agrees that the added phrase “need not be performed in an exercise” would allow licensees additional flexibility and increase scenario variability. Changes were made to the ISG in response to this comment.

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter recommended that the NRC revise the tenth bullet as follows: “The ability to provide medical care for injured, contaminated personnel (need not be performed in an exercise).” The commenter added the phrase “(need not be performed in an exercise)” to allow licensees additional flexibility. [0102]

NRC Response: The NRC agrees that the added phrase “need not be performed in an exercise” would allow licensees additional flexibility and increase scenario variability. Changes were made to the ISG in response to this comment.

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter recommended that the NRC revise the eleventh bullet as follows:

“The use of approximately 75% of initiating conditions identified in the site emergency plan implementing procedure for classification of emergencies in training, license exam, drill, or exercise scenarios. The variation of initiating conditions used over a planning cycle should yield the maximum range of realistic, predictable and credible scenarios for that plant’s design.” [0102]

The commenter suggested replacing “essentially 100%” with “approximately 75%” to allow licensees to select emergency initiating conditions that yield realistic, predictable and credible scenarios consistent with the goal of presenting a wide variety of conditions. In addition, the commenter added training and license exams as acceptable settings for presenting an emergency initiating condition to provide licensees with greater flexibility. [0102]

NRC Response: The NRC disagrees with the commenter. The exercise cycle was increased to 8 years in the final rule and allows for essentially 100% of initiating conditions to be included in drills or exercises in a reasonable manner without compromising the goal of realistic yet varied scenarios. There are several opportunities to complete this element, such as operator license training and exams. No change was made to the ISG in response to this comment.

Comment: In the list of “scenario elements” that should be included “during the conduct of drills and exercises over the course of an exercise planning cycle,” the commenter recommended that the NRC delete the following language from the twelfth bullet: “The use of wind direction and persistence representative of the site.” The commenter suggested that there is no clear basis or benefit for this requirement. [0102]

NRC Response: The NRC agrees with the commenter. This bullet would detract from scenario variability and licensee flexibility. Changes were made to the ISG in response to this comment.

Section IV.G, Challenging Drills and Exercises, Pages 29 and 30

Comment: The commenter recommended that the NRC reconsider the following guidance because of the limited availability of initiating conditions and EALs for use in drills and exercises: “Scenarios would be considered sufficiently diverse when no more than one EAL is shared,” and, “Where the design of plant systems makes variation difficult, circumstances and timing may be changed to effect the required variation (e.g., a fire or explosion causes the failure rather than a random mechanical fault). Drill scenarios should not be used for a biennial exercise within 3 years of use.” According to the commenter, there is a relatively limited number of EALs to select from for SAE and GE events. As a result, the commenter suggested the following guidance: “Scenarios would be considered sufficiently diverse when no more than one EAL is shared between consecutive biennial exercises.” [0102]

NRC Response: The NRC agrees in part that the limited availability of Initiating Conditions and EALs may not allow licensees to develop scenarios with wide variation. There may not be enough GE’s to allow 3 years worth of drills without repeating GE EALs in exercises, but there probably are enough SAE EALs to meet the guidance. Changes were made to the ISG in response to this comment.

Section IV.G, Challenging Drills and Exercises, Page 30

Comment: The commenter recommended that the NRC revise the ISG as follows: “A complete drill scenario should not be used for a biennial exercise within 24 months of use.” The commenter suggested that it should be acceptable to use some elements of a previous drill scenario in an exercise scenario if other, new, or changed material is added. [0102]

NRC Response: The NRC agrees in part with the commenter. Some elements of a previous drill scenario could be reused in an exercise scenario without detracting from the performance

enhancing experience, but the complete scenario should not be used. This may require licensees to provide information on which elements have been reused when the scenario is submitted for review. Twenty-four months is a long enough period of time for reuse of elements without concern regarding compromise of scenario content. Changes were made to the ISG in response to this comment.

Comment: The commenter recommended that the NRC revise the ISG as follows: “The NRC staff would review and approve all biennial exercise scenarios. Scenarios should be submitted at least 60 days prior to the exercise date. NRC staff comments on a scenario should be provided to the licensee no later than 45 days prior to the exercise date.” The commenter suggested that the proposed change allows the staff two weeks to review and aggregate comments. In addition, the commenter stated that the 45-day window allows licensees adequate time to make and validate changes prior to conducting exercise controller briefings and providing updated scenario materials to FEMA. [0102] Another commenter provided suggestions on the NRC review of scenarios and recommended that NRC commit to reviewing and returning scenarios to the licensee within a set time period (e.g., 15 days). [0065]

NRC Response: The NRC agrees in part with the commenters that there should be a schedule for NRC review of scenarios and that the results should be provided to the licensee in a reasonable timeframe. The final rule requires licensees to submit scenarios to the NRC at least 60 days before the start of the biennial exercise. The NRC will provide the licensee with any comments no later than 30 days before the exercise begins. Changes were made to the ISG in response to this comment.

Comment: With regard to the second paragraph, first sentence, the industry representative recommended that the NRC revise the ISG to say: “Mitigative measures in hostile based scenarios should commence after the simulated active attack has ceased, and LLEAs and site security have determined that the site is secure enough to allow prioritized, limited movement of personnel.” The commenter stated that this change reflects “lessons learned” from HAB drills. [0102]

NRC Response: The NRC disagrees that licensees need only demonstrate response to the aftermath of hostile action after LLEAs and site security have determined that the site is secure. It may take a day or more for this to occur and demonstration of response must be performed before the site is deemed totally secure to show the ability to prioritize protective action for teams that conduct urgent repairs. This decision cannot be left solely to LLEA or site security, but must be made in concert with site management considering nuclear and public safety. The scenario must challenge responders to demonstrate the capability to perform such repairs rather than declare the site safe and allow normal operations to proceed. No change was made to the ISG in response to this comment.

3.6.6 Other: Challenging Drills and Exercises

Opposed to No or Minimal Release Scenario

Comments: Several commenters opposed the use of no or minimal release scenarios in exercises and drills. The commenters explained that a release (at a GE) is needed to fully engage OROs. [0061, 0073, 0096, 0109] One commenter suggested that hostile action scenarios should reflect a fast-breaking radiological release caused by an intentional attack on spent fuel storage facilities. [0109]

NRC Response: The NRC disagrees with the commenters. Scenarios must provide the opportunity for protective action decision makers to demonstrate their ability to provide appropriate protective actions in a minimal release scenario. This decision making is also important and will contribute to correcting negative training that every accident results in containment failure and large releases, as discussed in the final rule SOC. Additionally, the final rule requires rapid escalation of an emergency and, to increase scenario variability, licensees need not specify the scenario in which that requirement is met. So, the new requirement to rapidly escalate classifications to an SAE or GE encompasses fast breaking scenarios, which could include a fast-breaking radiological release caused by an intentional attack on spent fuel storage facilities. No change was made to the ISG in response to this comment.

Length of the Exercise Cycle

Comment: A commenter suggested that exercises are predictable because FEMA's evaluation criteria must be met. [0063]

NRC Response: The NRC agrees with the commenter and recognizes that exercises have been predictable. That is a basis for the rulemaking which attempts to reduce predictability by increasing scenario variability.

Comment: One commenter suggested that hostile action scenarios should be demonstrated more often than every eight years. [0109]

NRC Response: The NRC disagrees with the commenter. The NRC considered this issue and recognized that such a focus could only be done at the expense of other credible accident scenarios. It was determined that this would focus training resources unnecessarily on hostile action to the detriment of other preparedness issues. No change was made to the ISG in response to this comment.

Other Comments

Comment: One commenter recommended that the NRC use analytical methods to design and evaluate exercises. [0048]

NRC Response: The NRC agrees with the commenter. The NRC is pursuing a multi-year process to establish a technical basis to expand the use of risk-informed analytical methods. However, these methods are not sufficiently developed to affect this rulemaking. No change was made to the ISG in response to this comment.

Comment: Two commenters suggested that NRC's proposal needs to synchronize onsite and offsite emergency plans and response via the exercise program. [0061, 0064]

NRC Response: The NRC agrees with the commenter. The EP drill and exercise program as enhanced by the final rule helps to synchronize onsite and offsite programs by requiring exercises that integrate local law enforcement and other offsite support organizations with the onsite response. No change was made to the ISG in response to this comment.

Comment: One commenter urged that NRC guidance should integrate onsite response activities with NIMS and the local and State emergency operations centers (EOCs). [0064]

NRC Response: The NRC agrees in part with the commenter. Licensees' ERO should be familiar with NIMS and ensure the ability to communicate adequately with OROs. However, no regulatory action is necessary because implementation of the EP regulations, as amended by this final rule, provide reasonable assurance that licensees will be able to adequately communicate with OROs. The drill and exercise program reinforces the communication requirements, in part by requiring the critique of licensee performance. The NRC requires that when weaknesses are identified that involve lack of coordination with OROs, due perhaps to lack of familiarity with NIMS, that they be corrected. No change was made to the ISG in response to this comment.

Comment: One commenter also stated that the NRC is establishing requirements for hostile action exercises before the hostile action response plan requirements have been developed. The commenter suggested that planning requirements and evaluation criteria for hostile action incidents need to be established first, then the hostile action response plan needs to be developed, and then the hostile action drills should be conducted. [0064]

NRC Response: The NRC disagrees with the commenter. The hostile action response plan should be the same as the existing emergency response plan because hostile action is just one of many possible initiating events that would cause the emergency plan to be implemented. Moreover, licensees will have at least one year to revise plans before conducting a hostile action exercise. No change was made to the ISG in response to this comment.

Comments: One commenter claimed that there is no basis for NRC review of scenarios. The commenter suggested that the NRC get involved in the licensee's scenario development process. [0090] Another commenter stated that NRC and FEMA should not dictate what scenarios should be demonstrated in an exercise. The commenter explained that state and local OROs work with the licensees to develop scenarios given the site and jurisdiction. [0096] Another commenter stated that FEMA reviews and approves scenarios through the affected State, and guidance is needed to address coordination of NRC and FEMA reviews early in the scenario development process, including the extent of participation agreements required by FEMA. In addition, the commenter suggested that licensees should not be placed in the position of dictating offsite participation scope based on NRC review comments. [0135]

NRC Response: The NRC disagrees that there is no basis for NRC review of scenarios. As stated in the proposed rule SOC, the NRC must ensure the quality of scenarios and that they are of sufficient variability. The NRC will be involved in the scenario process to verify the scenario is appropriate, a role that is appropriate for a regulator. The NRC agrees that its verification process should not cause licensees to dictate offsite participation. The NRC verification will be facilitated by the licensee submitting the scenario at least 60 days before the exercise as this schedule will allow the NRC to coordinate review efforts with FEMA. No change was made to the ISG in response to these comments.

Comment: Another commenter also suggested that OROs should be required to periodically include participation of actual decision-makers in exercises instead of surrogates. [0065]

NRC Response: The NRC agrees that actual decision-makers should participate in exercises instead of surrogates. However, the NRC has no authority regarding elected officials' participation in exercises. At least one NRC commissioner participates in each exercise when

the exercise involves the Operations Center at the NRC Headquarters. No change was made to the ISG in response to this comment.

Comment: One commenter urged the NRC to re-evaluate NRC and FEMA guidance to more clearly reflect expectations and goals for biennial exercises, rather than imposing additional requirements on licensees. [0084]

NRC Response: The NRC disagrees that it should not impose additional requirements on licensees for scenario quality. As explained in the proposed and final rule SOC, exercise scenarios are not becoming more challenging and the NRC has determined that rulemaking is necessary to ensure exercises are an adequate test and that the drill program covers all principal ERO functions. No change was made to the ISG in response to this comment.

Comment: A commenter argued that many State and local governments are experiencing “exercise burn-out,” and NRC’s additional exercise requirements will only make this worse. [0106]

NRC Response: The NRC agrees in part with the commenter. Although some State and local governments may be experiencing exercise burn-out, the NRC must ensure preparedness, and the conduct of exercises is an important activity to demonstrate key skills. The NRC understands that local responders have many hazards other than the NPP that they must prepare for. The final rule attempts to minimize additional burden by not requiring additional drills or exercises to address hostile action. However, the focus of exercises must now include hostile action. No change was made to the ISG in response to this comment.

Comment: Another commenter suggested that the NRC require licensees to conduct a detailed virtual evacuation exercise annually using the most current population counts and traffic studies for the region around each NPP. The commenter also urged the NRC to provide NRC’s evaluation of the exercise on the NRC and FEMA websites. [0053]

NRC Response: The NRC disagrees with the commenter. The final rule’s requirements for ETEs address this concern by elevating the quality of ETEs through periodic ETE updates that will incorporate the most current population data and traffic control strategies and requiring a virtual evacuation to be modeled with each new census and for certain population increases. Additionally, NRC exercise inspection results are on the NRC website. No change was made to the ISG in response to this comment.

Comment: Another commenter claimed that the NRC did not provide a sound justification for the changes being proposed regarding challenging drills and exercises. [0102]

NRC Response: The NRC disagrees with the commenter. The proposed rule SOC provided justification for each of the proposed rule changes related to EP drills and exercises. To the extent that the NRC made any changes to the proposed rule, the final rule SOC includes a basis for each of those changes.

Comment: One commenter suggested that security-based drill scenarios should also be required to consider various possible occurrences that would result in conjunction with a hostile event (e.g., simultaneous attack on other infrastructure within the EPZ). [0109]

NRC Response: The NRC agrees with the commenter. Licensees should consider including collateral damage, such as loss of offsite power, in hostile action scenarios. These elements would improve realism and preparedness for the accidents that responders may actually face. Changes were made to the ISG in response to this comment.

Comment: The commenter also recommended that the NRC provide more detail on the scope of hostile action based scenarios. The commenter also stated that the NRC must include performance based standards in the new rule to allow the NRC to make judgments as to the effectiveness of drills. [0109]

NRC Response: The NRC disagrees with the commenter. NEI developed detailed guidance for the conduct of drills and exercises in support of the hostile action drill pilot program. NEI is revising that guidance based on lessons learned and NRC comments.

The NRC inspects each licensee's critique of its exercise rather than each licensee's performance in the exercise. When the licensee's performance fails to satisfy the requirements, NRC regulations require the licensee to identify the performance weakness and take corrective action. No change was made to the ISG in response to this comment.

Comment: The same commenter recommended that NRC ensure adequate public participation is allowed, including eliciting input from the public both before and after the biennial drill, requiring increased public access to the JIC during the drill, and increasing public disclosure of the results and evaluations following the biennial drills, detailing problems encountered and required changes to the plan or its implementation that must be made within a prescribed time period. [0109]

NRC Response: The NRC disagrees with the commenter. The results of inspections are publicly available on the NRC website, and a public meeting takes place after each exercise to discuss findings. Public participation also occurs through hearings during licensing and annually in meetings to discuss the NRC's assessment of each licensee's performance. Additional public participation could take place through invitation by local authorities should they deem it appropriate, but there is no basis for the NRC to require more opportunities for local participation beyond those already provided. No change was made to the ISG in response to this comment.

Comment: One commenter recommended that the NRC require that drills and exercises more frequently reflect rapid escalation to an SAE or GE. The commenter also expressed concern that the proposed regulations require escalation only to an SAE, and recommended that the NRC require escalation to a GE. [0109]

NRC Response: The NRC disagrees that it should require that drills and exercises more frequently reflect rapid escalation to an SAE or GE. The proposed rule required rapid escalation to at least an SAE and allowed rapid escalation to a GE. The final rule maintains these requirements. This is a significant enhancement over the system under the former rule to eliminate negative training, whereas the commenter's suggestion would prolong negative training. No change was made to the ISG in response to this comment.

Comment: Another commenter expressed concern that the proposed regulations do not include performance-based measures for drills and exercises, and that licensees would plan

and train only enough to pass the exercises, not enough to adequately prepare for an actual incident or accident. [0100]

NRC Response: The NRC agrees in part with the commenter, in that performance-based measures for regulatory oversight of EP could potentially enhance NRC's ability to ensure adequate preparedness. The NRC is beginning a multiyear effort to determine the feasibility of risk informed and performance based oversight techniques. However the NRC disagrees that the current program does not adequately prepare licensees for emergency response. Nuclear power plant EP programs are recognized nationally for a high level of preparedness. Further, the Reactor Oversight Process for EP includes both exercise inspection and performance indicators of oversight to ensure that licensees are adequately trained for an actual radiological event. No change was made to the ISG in response to this comment.

4. Non-Security Related Issues

4.1 Backup Means for ANS

4.1.1 Part 50, Appendix E, Section IV.D.3: Backup Means for ANS

General Comments

Comment: One commenter stated that the requirements within this section were vague and did not conform to the guidelines in SECY-09-0007. The commenter claimed that in SECY-09-0007, the NRC deemed battery backup to be an adequate option, but the proposed rule went beyond that option and added new requirements. [0085]

NRC Response: The NRC disagrees with the commenter. In SECY-09-0007 and the proposed rule, the NRC did not determine that battery power backup alone would be an adequate backup ANS. In fact, the NRC concluded in the proposed rule that a battery backup “would address only one of several ANS failure modes (i.e., loss of AC power) for one alerting method (i.e., sirens). It would not address backup methods for other types of alerting devices or any part of the notification process.” (74 FR 23254, 23262; May 18, 2009) For these reasons, the NRC proposed a backup capability requirement for the entire ANS. The final rule also includes this requirement. No change was made to the final rule in response to this comment.

Comment: Another commenter supported the requirement that all plants have backup power because loss of off-site power is a major source of accident risk. [0088]

NRC Response: The NRC disagrees in part with the commenter. As the proposed rule SOC and ISG explained, backup power by itself would not solve the problem. The final rule does not specify the means for the backup capability, but the final rule requires that the capability be established. The intent is to allow flexibility as new technologies become available. The NRC remains open to consideration of backup ANS systems that use alternative technologies and backup power could be a portion of such a system. No change was made to the final rule in response to this comment.

Definitions

Comment: A commenter requested that “alerting” and “notification” be defined within the statement “public alerting and notification decision.” [0084]

NRC Response: The NRC disagrees that “alerting” and “notification” need to be further defined. The final rule SOC and ISG adequately describe the systems and define the terms used. No change was made to the final rule in response to this comment.

Comment: Another commenter stated that it was acceptable not to require specific backup measures but wanted a “standard of capability” to be defined. [0072]

NRC Response: The NRC agrees in part that a “standard of capability” must be defined in the regulation. Although it does not define the “standard of capability,” the final rule requires that a backup capability exists. No change was made to the final rule or ISG in response to this comment.

Regulatory Authority

Comment: A commenter suggested that the requirement for licensees and applicants to implement the backup method of public ANS conflicted with NRC's position that these measures should be implemented by State and local authorities. The commenter concluded that this provision was beyond the authority of the applicant or licensee. [0084]

NRC Response: The NRC agrees with the commenter. This provision requires that backup ANS capability be available and not that licensees implement such measures. A change was made to the final rule in response to this comment.

Comment: Other commenters stated that the determination of the capabilities and effectiveness of public ANS is the responsibility of FEMA, and that NRC should revise this section to eliminate actions on the part of licensees that are the responsibility of FEMA. [0090, 0135]

NRC Response: The NRC agrees that determination of the capabilities and effectiveness of public ANS is the responsibility of FEMA. As with many areas of ORO support of a NPP EP, FEMA would be responsible for verification of the capability and review of any supporting plans or procedures. However, under 44 CFR 350.5, FEMA bases its review of State and local plans on NRC EP regulations. The final rule was changed to clarify the licensee's responsibility. No change was made to the ISG in response to this comment.

Primary and Secondary ANS

Comments: Several commenters expressed concern that the proposed language did not give credit for a robust primary ANS and that the language would discourage capital or other improvements to the primary ANS. [0060, 0085, 0102, FEMA-2008-0022-0125] One of the commenters stated that the public should be notified in the event of a problem with the primary ANS, but stated that the rule should allow this goal to be met with a single, highly robust ANS. This commenter also argued that route alerting systems and reverse 911-type wide-area telephone notification systems, potential forms of secondary ANS, were of "doubtful utility" and "unreliable." [0102] Another commenter agreed that route alerting could be used as a backup option, but also expressed concerns about the effectiveness of this option. [0065] Another commenter expressed concern that route alerting is a waste of scarce human resources and is not a good backup ANS option. [0072] A commenter suggested permitting licensees to satisfy the requirement if the primary ANS were "designed and installed such that no single failure could preclude the system from meeting its intended function." [0102]

NRC Response: The NRC disagrees that the proposed language would not have allowed the requirement to be met with a robust primary ANS and that the language would have discouraged capital or other improvements to the primary ANS. Although the single failure criteria proposed by the commenter could perhaps be adequate, the details of the proposal have not been specified. The expectation would be for a system with overlapping and independent siren coverage or other methods that precluded any single failure (including perhaps clusters of sirens). The use of innovative technological solutions to this problem could be considered as meeting this requirement.

The NRC agrees that route alerting may not be as timely as the primary ANS, but it is a widely used backup measure to the highly reliable primary alerting system and FEMA has determined

that it is an adequate backup method for many sites. However, the NRC remains open to other innovative solutions. Regardless of the backup system used, investments in the primary ANS would still have to be made to the extent needed to maintain high levels of ANS operability in line with established performance indicator (PI) standards. Licensees have upgraded ANS systems as a matter of public confidence building and to avoid the cost of outages and compensatory measures. The promulgation of the final rule should not affect those efforts. No change was made to the final rule in response to these comments.

Time Requirements

Comment: A commenter supported the lack of time requirements for using backup methods of alert and notification. [0063]

NRC Response: No response is necessary.

Comment: Three commenters suggested that NRC delete the 45 minute requirement from the rule language. [0060, 0102, FEMA-2008-0022-0125]

NRC Response: The NRC disagrees with the commenters. The 45-minute requirement is not in the rule, but is stated as a goal in guidance. No change was made to the final rule in response to this comment. The ISG was modified to clarify that the 45-minute goal applies specifically to the area closest to the NPP site (e.g., the area within a 2-mile radius).

Comment: Another commenter stated that the language was not clear regarding when the 15 minute clock begins, and requested that the NRC revise the rule language to clarify this point. [0084]

NRC Response: The NRC disagrees with the commenter that the regulatory language needs to be revised to clarify when the “15 minute clock” begins. The commenter presumably refers to the 15 minute goal for public alerting and initiation of public notification. That portion of the regulation was not proposed for revision. However, the regulations have been clarified to specify that the capability must exist to “essentially complete the initial alerting and initiate notification” of the public within about 15 minutes of the time officials are notified. This clarification was made because the NRC, consistent with the 1990 Seabrook decision (*Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-935, 32 NRC 57, 68 (1990)), has determined that notification of the public need not be completed within 15 minutes but that initiation of the notification process must begin within 15 minutes. No change was made to the final rule in response to this comment.

Backup ANS Methods

Comments: Two commenters argued that the proposed rule fails to recognize Federal directives to develop comprehensive emergency alert and notification systems that utilize a wide range of technologies. [0060, FEMA-2008-0022-0125] One of the commenters criticized NRC’s focus on route alerting, and argued that robust siren systems with independent backup activation and backup power capabilities are sufficient. Furthermore, the commenter suggested that other technologies not specific to nuclear power hazards, such as the FEMA Integrated Public Alert and Warning System (IPAWS) would be more effective than a single purpose technology. [FEMA-2008-0022-0125]

NRC Response: The NRC disagrees with the commenters. The NRC has determined that an amendment to its regulations is necessary to ensure consistent implementation of a backup means for public alert and notification capabilities at all NPPs. Route alerting is currently widely used as a backup means for public alerting and notification. However, the proposed rule did not prohibit a diverse “range of technologies” to be used to meet this requirement. When the ongoing Federal initiatives to improve the emergency notification of the public reach maturity and are implemented in the environs of nuclear plants, the NRC would consider alternative means to meet the requirement. No change was made to the final rule in response to this comment.

4.1.2 NSIR/DPR-ISG-01: Draft Interim Staff Guidance - Backup Means for ANS

Inconsistencies with Other Regulatory Documents

Comments: A commenter stated that the guidance should be reviewed to ensure that it does not introduce additional requirements and is not more restrictive than the basis in SECY-09-0007. This commenter also suggested that there were discrepancies between the ISG and NUREG-0654, Supplement 4. This commenter recommended that ANS guidance be deleted from the ISG and only be within NUREG-0654, Supplement 4. [0102]

Another commenter noted that the NRC’s proposed changes to Appendix 3 to NUREG-0654 and FEMA’s proposed changes to NUREG-0654 through draft Supplement 4 could result in guidance on this issue being split into separate sections and result in confusion. The commenter recommended that the NRC and FEMA consolidate the guidance on backup ANS into a single section of NUREG-0654. [0069]

NRC Response: The NRC agrees in part with the commenters. NRC guidance does not impose requirements and the guidance is consistent with SECY-09-0007. The NRC disagrees that the guidance should be consolidated. Some of the guidance in the ISG is specific to NRC licensees and other NRC documents and, therefore, doesn’t belong in Supplement 4. Some licensees may also take the lead in designing and/or implementing the backup ANS; it makes sense to leave the information in the ISG for use by these licensees. However, the NRC did review the ISG and corrected discrepancies with Supplement 4. Changes were made to the ISG in response to these comments.

Comment: Another commenter stated that NUREG-0654, Appendix 3, Section B.2.d is too broad and could require the use of “any present or new technological widget at the whim of the NRC.” [0100]

NRC Response: The NRC disagrees with the commenter. The proposed change to Appendix 3, Section B.2.d of NUREG-0654 was written to provide licensees with flexibility in system design. Further, NUREG-0654 is the NRC’s guidance document, and the NRC cannot impose requirements through its guidance documents. Once an adequate backup method is established at a site (e.g., route alerting), the NRC cannot require a change without following the normal regulatory process (e.g., issuance of an order, rulemaking). No change was made to the ISG in response to this comment.

Primary ANS

Comment: One commenter recommended that the guidance be revised to include a set of ANS design criteria or attributes that would eliminate the need for a backup ANS. [0102]

NRC Response: The NRC disagrees with the commenter. The NRC did not develop ANS criteria to meet the requirements of the backup ANS because the immediate need for such a standard does not exist. However, the final rule does not prohibit a diverse range of technologies to be used to meet this requirement. When the ongoing Federal initiatives to improve the emergency notification of the public reach maturity and are implemented in the environs of NPPs, the NRC may consider alternative means to meet the requirement. For instance, the licensee for the Indian Point NPP installed a primary ANS with sufficient redundancy to eliminate the need for a backup system. No change was made to the ISG in response to this comment.

Siren Systems

Comment: A commenter stated that not all licensees have sirens that can give both an alert signal and message. This commenter requested that the wording be changed to clarify that the siren does not need to have both capabilities. [0114]

NRC Response: The NRC disagrees with the commenter. The proposed rule SOC and supporting guidance explained that the NRC was not proposing a requirement that both capabilities exist in one device. No change was made to the final rule or the guidance documents in response to this comment.

Phased Route Alerting Methods

Comment: A commenter stated that backup alerting plans would differ between facilities, but should reflect the best judgment of OROs. [0102]

NRC Response: The NRC agrees that the suggested language can improve clarity of the guidance. Changes were made to the ISG in response to this comment.

Comment: Another commenter requested that the reference to “keyhole” be deleted from the language because not all OROs or licensees use the keyhole method. [0114]

NRC Response: The NRC agrees that word “keyhole” is not necessary and that other measures may be used as decided by OROs. Changes were made to the ISG in response to this comment.

State and Local Government Role

Comments: A commenter stated that in cases where the licensee is acting on the behalf of the State or local governments with regard to ANS, the licensee and FEMA should be able to correspond directly while keeping the State informed. This commenter requested that text be added that would allow this flexibility. [0114] A commenter stated that the proposed guidance should recognize current efforts at the Federal and State level to develop comprehensive emergency ANS. [0102]

NRC Response: The NRC agrees with the commenters. Where direct contact between the licensee and FEMA would facilitate effective completion of an ANS design project, direct contact should be allowed as the commenter suggests. The final rule and guidance do not preclude such arrangements. The NRC expects that such arrangements would happen naturally without the need for Federal guidance on project management methods.

When the ongoing Federal initiatives to improve the emergency notification of the public reach maturity and are implemented in the environs of nuclear plants, the NRC would consider alternative means to meet the requirement. No change was made to the ISG in response to these comments.

Requests for Clarification

Comment: A commenter recommended that the following language be added to the end of the second paragraph under Section IV.J: “An alternate emergency alert system (EAS) station would be an acceptable means to perform a backup notification function.” [0102]

NRC Response: The NRC disagrees with the commenter. An alternate EAS station(s) that provide sufficient redundant coverage could be an acceptable means to perform the backup notification function. However, the system would be reviewed and approved by FEMA to ensure adequacy. No change was made to the ISG in response to this comment.

Comment: A commenter stated that the term “sufficient time” related to backup ANS will lead to disagreements in how to interpret this term. This commenter recommended that “sufficient time” be replaced with “3-hours.” [0069]

NRC Response: The NRC disagrees with the commenter. The ISG sets 45 minutes as the goal for completing the alert and notification process by means of a backup ANS, with no specific time required. The backup capability should be implemented in a staged manner as deemed appropriate by OROs for the situation. The NRC would expect local authorities to use available resources in a manner to protect public health as best they can without further federal direction or guidance. No change was made to the ISG in response to this comment.

Comment: A commenter recommended that the NRC incorporate into its guidance the following language from the NRC’s rulemaking technical basis document to clarify the requirements for backup measures for ANS:

“The NRC would also revise its guidance to clarify that backup warning measures do not need to be implemented with a 15-minute timeframe (to ensure direct coverage of essentially 100 percent of the population within 5-miles of the site) or a 45-minute timeframe (to ensure 100 percent coverage of the population who may not have received the initial notification, such as those in rural or recreational areas), because this would impose the same design objectives on the backup system as those for the primary and compensatory alerting methods described in Appendix 3 to NUREG-0654 (Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), ASLB-88-2, 27 NRC 85 (1988)). The staff recognizes some backup methods may not be capable of meeting the timeframes that are part of the primary ANS design objectives. The intent is not to have a duplicate primary ANS but to have a means of backup notification in place so that the populace can be alerted in sufficient time to allow offsite officials

to consider a range of protective actions for the public to take in the event of a severe accident with potential offsite radiological consequences. A graded approach in which the populations most at risk are alerted and notified first, followed by alerting and notification of people in less affected areas, is acceptable for the backup means. There would be no regulatory requirement for siren backup power. Although siren backup power would address one of the more common failure modes for fixed siren-based systems, other failure modes might still exist. Thus, it is important that the backup means be independent of the primary system so that it is not subject to the same type of failure mechanism.” [0069]

NRC Response: The NRC agrees that portions of the commenter’s suggested language would improve the ISG. However, the regulatory basis for the requirement that the public ANS have backup methods for both the alert and notification functions is contained in the SOC. Changes were made to the ISG in response to this comment.

4.1.3 Other: Backup Means for ANS

Primary and Secondary ANS

Comments: A commenter recommended that the NRC pursue alternate options for backup ANS and suggested that these options should be consistent with risk-based goals. This commenter also recommended that the NRC consider the timeliness, reliability, and robustness of the ANS as a function of distance from the reactor. [0042]

NRC Response: The NRC agrees that the EP regulations should be risk informed. The NRC has started a project to develop the technical basis for risk-informed regulatory oversight of EP. This multi-year process is expected to identify whether a sufficient technical basis can be established. If a technical basis can be established, the NRC will develop recommendations for consideration by the Commission. Risk informed regulatory oversight may be able to quantify the significance of ANS failures and perhaps system requirements as a function of distance from the nuclear power plant. However, the technical basis for risk-based goals is not considered sufficiently mature for the current rulemaking and was not considered. No change was made to the ISG in response to these comments.

Comments: A commenter also argued that the reliability of the notification system is important. [0065] Another commenter suggested that NRC consider “longer times until releases begin, smaller source terms and location differences” when developing backup means to alert the public. [0048]

NRC Response: The NRC agrees that the reliability of the ANS is important. The ANS PI licensee response band threshold is set very high, thereby reflecting its importance, and the PI status shows that the systems are highly reliable. The NRC disagrees that characteristics of the backup ANS should be based on longer times until releases begin and smaller source terms because the NRC is not currently aware of a technical basis to support such a determination. The rule does not prevent the backup ANS from reflecting location differences and these distinctions would be expected. No change was made to the ISG in response to these comments.

Comment: A commenter stated that backup systems could be concentrated in the first two miles surrounding a plant and that other means of communication should be used further away from the plant. [0048]

NRC Response: The NRC agrees in part with the commenter. The ISG notes that the close-in population should be addressed first. However, the NRC identified no basis to eliminate backup ANS from the rest of the EPZ, and the rule requires that there be a backup capability throughout the EPZ. No change was made to the ISG in response to this comment.

Comment: A commenter stated that backup ANS should include geocoded automatic dialers and stated that the use of such dialers should be required. [0088]

NRC Response: The NRC agrees in part with the commenter. Geocoded automatic dialers could be a part of proposals for innovative backup ANS systems. However, the final rule does not require the use of a specific means for demonstrating the backup ANS capability for the reasons explained in the final rule SOC. No change was made to the ISG in response to this comment.

Comment: A commenter argued that every plant should be required to install backup power to the primary ANS. The commenter added that if the NRC does not require this, then it will need to ensure that the backup alert and notification systems are as timely and effective as the primary system would have been. [0109]

NRC Response: The NRC disagrees with the commenter. As explained in the proposed and final rule SOC, backup power does not fully address the need for backup ANS. Furthermore, as also explained in the proposed and final rule SOC, a backup ANS does not need to meet the same timing criteria as a primary ANS. No change was made to the ISG in response to this comment.

Comments: A commenter stated that both the backup and primary systems should be measured for their effectiveness and that NRC should implement enforceable standards. [0109]

NRC Response: The NRC agrees in part with the commenter. The primary ANS is measured for effectiveness by the PI and focused inspection. The PI thresholds are essentially a standard that dictates the level of regulatory oversight of the system and the associated EP program. The NRC described in the proposed and final rule SOC the need for a backup ANS system, but indicated that it would not have the same acceptance criteria as the primary system because it is a backup to a very reliable system. The rule is enforceable in that each nuclear power reactor site must be supported by a backup ANS system or the licensee would be in noncompliance with regulations, for which the NRC could take enforcement action against the licensee. No change was made to the ISG in response to this comment.

Route Alerting

Comment: Another commenter recommended that FEMA remove the requirement to complete backup route alerting in the event of a failure of the primary method within 45 minutes, and replace this with wording such as: "with a sense of urgency and without undue delay and with an ideal planning target goal of 45-minutes." [0063]

NRC Response: The NRC disagrees that there is a requirement to complete the backup alerting method within 45 minutes. This is a goal stated in the ISG and elsewhere. No change was made to the ISG in response to this comment.

Siren System

Comments: A commenter requested that the NRC require backup batteries for emergency sirens at all nuclear plants. [0053] The commenter suggested that the NRC require backup power for warning sirens for all nuclear plants. [0053] Another commenter also stated that older sirens should be replaced with more modern computer and telecommunication alert systems. [0063]

NRC Response: The NRC disagrees that backup power should be required for all systems. As explained in the proposed and final rule SOC, backup power alone does not fully address the need for a backup ANS. Based on the NRC's inspections and critiques of licensee exercises, all current siren systems adequately provide for public alerting. There is no regulatory basis to require systems be replaced unless they fail to meet requirements regardless of their age. No change was made to the final rule or ISG in response to these comments.

Comment: A commenter also requested that the NRC define what they consider to be acceptable backup alert and warning systems above and beyond siren systems. [0063]

NRC Response: The NRC disagrees that further definition of an acceptable backup ANS is required. The acceptable criteria and numerous examples were provided in the draft ISG, existing guidance, proposed rule SOC, and proposed rule language. No change was made to the final rule or the ISG in response to this comment.

Comment: A commenter stated that "backup power to sirens is only helpful if the cause of siren failure is lack of power." The commenter claimed that it would be better to require an alternate or backup system of "rapid notification" for the same area of coverage as the primary ANS. [0063]

NRC Response: The NRC agrees with the commenter. The final rule requires a backup alerting and notification method without specifying the method. No change was made to the final rule or ISG in response to this comment.

Comment: Another commenter expressed concern that sirens were the primary method of public notification. This commenter recommended that rapid dialing systems, electronic reader boards, low frequency dedicated radio capability, and EAS also be required. [0072]

NRC Response: The NRC disagrees that the current ANS is not adequate. The ANS is a highly reliable system, as demonstrated by performance indicator data. The final rule provides an adequate level of emergency preparedness by requiring a back up method should the primary system be unavailable. However, the NRC will remain open to proposals for innovative technical systems for backup ANS. No change was made to the ISG in response to this comment.

Requests for Language Clarifications

Comment: A commenter stated that the backup ANS wording in the proposed rule is unclear and added that the current system around the NPP near the commenter is adequate. [0071]

NRC Response: The NRC disagrees that the backup ANS wording in the proposed rule is unclear. The commenter did not indicate which words were unclear. The guidance provided allows licensees and supporting OROs to develop a backup method of public alerting and notification. Most sites, such as the one near the commenter, already have a backup ANS implemented and would need to take few, if any, steps to comply with the final rule. No change was made to the final rule or ISG in response to this comment.

Local Resources

Comment: A commenter stated that the need for backup ANS will present a huge burden on local resources and requested that the NRC clarify the basis for requiring backup power to the ANS. [0084]

NRC Response: The NRC disagrees with the commenter. Most sites already have a backup ANS capability, so local governments should not experience a “huge burden.” Also, the proposed rule did not suggest that the NRC would require backup power for ANS. The proposed and final rule cited the Energy Policy Act of 2005 as requiring the Commission “to require backup power for the emergency notification system, including siren systems, for NPPs located where there is a permanent population, as determined by the 2000 decennial census, in excess of 15,000,000 within a 50-mile radius of the power plant.” Only one NPP meets that criteria – Entergy Nuclear Operations Inc.’s Indian Point – and that plant is the only one that is required to have backup power for its ANS. No change was made to the final rule or the ISG in response to this comment.

Inconsistencies with Other Regulatory Agencies and Documents

Comments: A commenter stated that the NRC should align the rulemaking with the national policy described in Executive Order 13407. The commenter suggested that this would eliminate barriers to constituents adopting alternative ANS. The commenter also wanted the NRC to take into account existing requirements of the FCC and a FEMA initiative for IPAWS. This commenter requested that the NRC adopt language that would define NRC’s, DHS/FEMA’s, and FCC’s alert and notification responsibilities. [0090] Another commenter also stated that this is a redundant activity because FEMA already requires this action. [0071]

NRC Response: The NRC agrees in part and disagrees in part with the commenters. The NRC is responsible for, among other things, regulating NPPs to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. As explained in the proposed and final rule SOC, the NRC has determined that amendments to its regulations are necessary to ensure consistent implementation of public alert and notification capabilities at all NPPs. These regulatory changes were coordinated with FEMA to avoid conflicts and promote consistency. The final rule does not prohibit a diverse “range of technologies” to be used to meet the requirements and this flexibility will allow for technological improvements and initiatives such as IPAWS. No change was made to the final rule or ISG in response to these comments.

4.2 *Emergency Declaration Timeliness*

4.2.1 Part 50, Appendix E, Section IV.C.2: Emergency Declaration Timeliness

Support for the Proposed Requirements

Comment: One commenter expressed support for the proposed requirement to declare an emergency within 15 minutes as “a positive change and long overdue.” [0069]

NRC Response: No response is necessary.

Suggested Revisions to the Proposed Requirements

Comments: A few commenters identified areas in which the NRC could improve its emergency declaration timeliness requirements. Three commenters argued that the 15-minute time limit to declare an emergency is not appropriate for all four emergency classes. The commenters suggested that the NRC implement time limits according to the severity of the emergency [0084, 0090, 0102] One of the commenters argued that the declaration timeframe for a Notification of Unusual Event (NOUE) should be 30 minutes rather than 15 minutes because there are no urgent onsite or offsite actions that would benefit from such a rapid declaration, and additional time would improve the accuracy of the declaration. [0102] Another commenter agreed that the limit for an NOUE should be 30 minutes, and suggested that the limit for an Alert be 20 minutes. [0090] Both commenters approved of the 15-minute declaration time limit for an SAE and GE. [0090, 0102]

NRC Response: The NRC disagrees in part with the commenters. In resolving these comments, the NRC re-considered the suitability of a single 15-minute criterion for all four ECLs. The declaration of a GE requires the licensee to provide a recommendation for public protective actions to State and local governments. These protective actions can be more effective in reducing the consequences of the emergency on the public if the action is implemented in a timely manner, preferably prior to the onset of a major release of radioactive materials. The steps that need to be taken by offsite officials to consider the licensee’s recommendation and to decide upon and implement an action cannot start until the licensee has classified and declared the emergency and provided the appropriate recommendation. As such, time is of the essence.

The basis for emergency planning for NPPs provided in NUREG-0654 addresses a spectrum of accidents. That discussion provides that the onset of the release to the environment following the onset of the event may range from 0.5 hours to one day. Furthermore, Section IV.D.3 of Appendix E to Part 50, as amended by the final rule, requires the licensee to have the capability to notify State and local officials within 15 minutes after declaring the emergency and that the ANS be capable of alerting the public and initiating notification of the public within about 15 minutes. The 15-minute timeliness expectation for emergency declarations now being codified is consistent with these regulatory requirements and the planning basis.

Although protective actions are not necessary at the lower ECLs and these lesser events have less significant potential consequences on the public, the same timeliness criterion for each of the four ECLs is necessary. The ECL, be it an NOUE or a higher ECL, cannot be known until

the classification is completed and the declaration is made. This argues against the use of different timeliness criteria for NOUE and higher ECLs because emergency events may not proceed step-wise through the four ECLs. The NRC cannot be assured that the first classification would not be an Alert or higher, so ECLs cannot have different timeliness criteria. Further, the actions to assess, classify, and declare an emergency, and the resources needed to accomplish those actions, do not differ by ECL. Although there are more EAL thresholds to consider during an NOUE than there are at the higher ECLs, this is somewhat balanced by increasing demands on the on-shift staff (such as assessment, corrective actions, and mitigative actions needed to address the degraded plant condition) associated with the higher ECLs. As such, the conditions (e.g., insufficient staffing, procedures, training, etc.) that would reduce a licensee's capability for declaring an NOUE within 15 minutes would likely have a similar effect on the licensee's capability for declaring higher ECLs. Also, the licensee's performance in declaring an NOUE is a viable predictor of licensee performance at the less frequently declared higher ECLs. Such performance deficiencies would not be identified and corrected if the NRC were to establish longer criterion for NOUE and 15 minutes for the higher classification level emergencies. No change was made to the final rule in response to these comments.

Comments: One commenter argued that requiring a declaration too quickly can lead to rushed and incorrect emergency declarations. [0102] Two other commenters suggested that the urgency to make an emergency declaration within 15 minutes might interfere with a licensee's efforts to mitigate the effects of an accident, [0072, 0084] although one of those commenters did feel that a 15-minute limit was appropriate for notification of the public offsite. [0072]

NRC Response: The NRC disagrees with the commenters. The NRC recognized the suggested possibility in developing the proposed rule and provided for this in the rule language. First, the NRC proposed a capability criterion rather than a performance criterion. A performance criterion would require a licensee to declare an emergency with 15 minutes without regard to the circumstances. The use of a capability criterion appropriately allows a licensee to demonstrate their capability during typical emergency declarations but to have the flexibility to exceed this criterion during extenuating circumstances when emergency declarations may need to be delayed in the interest of performing unanticipated plant operations that are urgently needed to protect public health and safety. However, the NRC expects licensees to consider such scenarios in establishing ERO staffing and resources so that this distraction occurs only for these limited classification scenarios. Ultimately, the licensee can avoid plant operator distraction by ensuring adequate on-shift resources. No change was made to the final rule in response to these comments.

Comment: One commenter stated that the proposed rule language could result in declaring a lower level emergency when a higher emergency classification might be warranted and provided two example scenarios to illustrate the concern. [0102]

NRC Response: The NRC agrees with the commenter. The NRC did not intend to require that the declaration be made once the first EAL was exceeded, as might be inferred from the proposed language. Changes were made to the final rule in response to this comment.

Comment: One commenter pointed out that the proposed requirements should not refer to "plant operators" only, as other ERO decision-makers may be involved in declaring an emergency. [0102]

NRC Response: The NRC disagrees with the commenter. The NRC retained the phrase “plant operators,” in the final rule and guidance since this phrase is suitably generic to encompass different ERO structures. The NRC amended the SOC for the final rule to provide guidance on the types of individuals who could be considered “plant operators” for purposes of this requirement. Also, the NRC’s intent is that the licensees have the capability to complete all necessary assessment, classification, and declaration activities within 15 minutes of the data being available to any plant operator. This would include any member of the plant staff, licensed operators or members of the ERO, who by virtue of training and experience, are qualified to assess the indications or reports for validity and to compare the same to the EALs in the licensee’s emergency classification scheme. Delays involved in a plant operator, be it a licensed operator observing an alarm in the control room or a non-licensed operator discovering an adverse condition in the plant, transferring the information to a distant emergency operations facility must be considered in meeting the 15-minute timeliness criterion. No change was made to the final rule in response to this comment. Changes were made to the SOC to clarify the NRC expectations regarding “plant operator.”

Comments: One commenter suggested that the proposed requirements should not require licensees to make a declaration for a transient event or one discovered after the fact. The commenter suggested that NRC revise the rule language to make it clear that the emergency declaration time requirement pertains to real events only. [0135]

NRC Response: The NRC disagrees with the commenter. The proposed and final rule language requires the licensee to have the capability to assess, classify, and declare an emergency condition within 15 minutes. Whether specific situations, such as a transient event or an event discovered after the fact, actually warrant a declaration is not a matter of capability, but rather performance. The NRC disagrees with the characterization that transient events may not be “real events.” The NRC-endorsed EAL schemes have provisions to discount transient events (e.g., “fire lasting greater than 15 minutes...” or “loss of all AC power for greater than 15 minutes...”), but still have EAL thresholds for which the occurrence alone warrants declaration. In an accident transient a delay in a reactor trip of even a few seconds can result in some core damage. Regarding the situation in which events are discovered after the fact, the issue will remain of whether the licensee should have recognized the event earlier. A blanket exclusion of such events from the capability requirement would be inappropriate. No change was made to the final rule in response to this comment.

Opposition to the Proposed Requirements

Comments: One commenter argued that there is not enough field observation or inspection evidence that indicates a need for the proposed change to Appendix E, Section IV.C. [0090] Another commenter stated that current regulations already require licensees to classify events promptly, and this requirement is enforced by NRC. [0135]

NRC Response: The NRC disagrees with the commenters. Between 2000 and 2009, the NRC identified 13 situations in which an emergency declaration was either not done or inappropriately delayed during an actual event, which resulted in findings and cited and non-cited violations. Two additional situations were subsequently evaluated. All of these situations are described in inspection reports that are publicly available from the NRC’s ADAMS document system. However, the absolute number of observations is not, in and of itself, significant to the NRC’s decision to pursue this rule change. The circumstances of these observations, namely,

deficient procedures, inadequate staffing, and/or failures on the part of the ERO, etc. are all under the control of the licensee, are preventable, and need to be corrected.

The NRC also disagrees that current regulations already require licensees to classify events promptly. As stated in the SOC, there are NRC expectations and guidance, but there is currently no regulatory timeliness criterion. No change was made to the final rule in response to these comments.

4.2.2 NSIR/DPR-ISG-01: Draft Interim Staff Guidance - Emergency Declaration Timeliness

Suggested Revisions to the Draft Interim Staff Guidance

Comments: One commenter stated that the guidance should not refer to “plant operators” as other individuals may make an emergency declaration [0102]

NRC Response: The NRC disagrees with the commenter. As discussed in the responses to the proposed rule comments above, the NRC has decided to retain the term “plant operators” in the final rule. The draft ISG discussion already defines the phrase “plant operators” and recognized that this responsibility may be transferred. Changes were made to the SOC and the ISG to clarify the NRC expectations regarding “plant operator.”

Comment: One commenter suggested a scaled emergency declaration time requirement: “A period of 30 minutes for NOUE, and 15 minutes for Alert, SAE, and GE was determined to be a reasonable time for assessing and classifying an emergency. These time periods should not be viewed as a grace period in which a licensee may attempt to restore plant conditions and avoid declaring an emergency. A delay in classification of up to 30 minutes for NOUE, and 15 minutes for an SAE and GE was deemed to have minimal impact on the overall emergency response and the protection of public health and safety.” [0102]

NRC Response: The NRC disagrees with the commenter. For the reasons discussed in the response to a similar comment on the proposed rule above, the NRC will retain the single timeliness criterion in the final rule. No change was made to the ISG in response to this comment.

Comment: One commenter argued that the ambiguity of the moment of “event discovery” could create unnecessary pressure on the emergency declaration decision-maker, and suggested the following language for the guidance document: “The on-shift licensed and non-licensed operators are responsible for identifying off-normal conditions and bringing them to the attention of operation’s shift supervision. The emergency plan charges this shift supervision to include a responsible emergency classification decision maker, with the responsibility for declaring the emergency until relieved. Regardless of the organizational structure, status of emergency plan activation, or the location where the declaration is performed, the Commission’s intent is that the applicants or licensees demonstrate the capability to assess, classify, and declare an emergency condition within 15 minutes after information is available to the responsible emergency classification decision maker, providing the function of emergency declaration, to recognize that an EAL has been exceeded and to make the declaration promptly once the decision is made that an emergency condition exists. The emergency declaration

period commences when indication of an off-normal condition is available to shift supervision capable of recognizing that an EAL threshold has been exceeded.” [0102]

NRC Response: The NRC disagrees with the commenter. The suggested language inherently accepts a potentially open-ended delay in the information moving from the plant operators who received the information initially to the designated “emergency classification decision maker” or the shift supervisor. The NRC expects that all structural delays in the information getting to the individual doing the classification, wherever located, are counted in the 15-minutes criterion. The comment and the suggested language indicate that more guidance is needed. Changes were made to the ISG in response to this comment.

Comment: One commenter stated that the determination when a declaration is warranted is not a clearly defined or readily recognizable event. The commenter stated that most licensees have a procedural process for making an emergency classification and suggested that the NRC revise the guidance to read: “The declaration period ends when the emergency has been declared. Declaration occurs when the appropriate decision-maker makes known the selected Emergency Classification Level (ECL) in accordance with the applicable licensee procedure.” [0102]

NRC Response: The NRC disagrees with the commenter. It would be inappropriate to establish a performance expectation based upon an “applicable licensee procedure” because the licensee procedure may not comply with the final rule or be consistent with the ISG guidance. The final rule contains two requirements: First, to have the capability to assess, classify, and declare an emergency within 15-minutes, and second, to promptly declare the emergency once the appropriate emergency classification is determined. The comment and the suggested language indicate that more guidance is needed. Changes were made to the ISG in response to this comment.

Comment: The commenter requested a revision to the guidance document clarifying the meaning of the word “promptly,” as follows: “If the fire is still burning after the specified duration has elapsed, the EAL is exceeded, no further assessment is necessary, and the emergency declaration would be made promptly. As used here, ‘promptly’ means at the first available opportunity (e.g., if the Shift Manager is receiving an update from the Fire Brigade Leader at the 15-minute mark, it is expected that declaration would occur as the next action immediately after the call ends).” [0102]

NRC Response: The NRC agrees with the commenter. The comment and the suggested language indicate that the guidance in the ISG needs to be expanded to clarify how “promptly” is to be interpreted. The NRC included the intent of the suggested language in the changes made to the ISG. Changes were made to the ISG in response to this comment.

Comment: The commenter also requested the NRC revise the ISG as follows to clarify when the 15-minute timeliness criterion starts: “This situation should not be confused with an analysis performed to confirm or verify (unless the analysis to confirm or verify is a component of the EAL or basis) an indication (e.g., channel check) or report of an off-normal condition, as opposed to identifying the condition, for which the 15-minute timeliness criterion starts when indication of an off-normal condition is available to plant operators to recognize that an EAL threshold has been exceeded.” [0102]

NRC Response: The NRC agrees with the commenter. The comment and the suggested language indicate that the guidance in the ISG needs to be expanded to clarify how confirmation or verification of observed conditions are to be considered in establishing when the 15-minute timeliness criterion starts. The NRC included the intent of the suggested language in the changes made to the ISG. Changes were made to the SOC for the final rule and the ISG in response to this comment.

4.2.3 Other: Emergency Declaration Timeliness

Other Comments on Emergency Declaration Timeliness

Comment: One commenter indicated that the names currently assigned to the four classes of emergency are too wordy and difficult for OROs and the general public to understand. The commenter suggested applying a numbered or colored system to identify the severity of emergency events. [0063]

NRC Response: The NRC disagrees with the commenter. The current emergency classification names have been successfully in use since 1980 by EROs and OROs. Because of the lengthy period of use and the expenditure of resources in ERO and ORO training, procedures, etc., a change of this nature should be undertaken only if sufficient benefit would result from the change. The commenter did not establish a justifiable reason for the NRC to reconsider the existing classification scheme. A colored system would not be any more, and could be less, understandable than the current four textual names. No change was made to the final rule or ISG in response to this comment.

Comment: One commenter argued that the NRC should use a “performance criterion” instead of a “capability criterion” to evaluate licensees’ ability to declare an emergency in a timely manner. [0109]

NRC Response: The NRC disagrees with the commenter. As stated in the SOC for the proposed rule, an inflexible timeliness performance requirement could have an adverse impact on reactor safety by keeping operators from performing needed actions to prevent further deterioration of the plant conditions. The use of a capability criterion appropriately allows a licensee to demonstrate their capability during typical emergency declarations but to have the flexibility to exceed this criterion during extenuating circumstances when emergency declarations may need to be delayed in the interest of performing unanticipated plant operations that are urgently needed to protect public health and safety. However, the NRC expects licensees to consider such scenarios in establishing ERO staffing and resources so that this distraction occurs only in a limited number of classification scenarios. No change was made to the final rule or ISG in response to this comment.

4.3 EOF – Performance-Based Approach

4.3.1 Part 50, Appendix E, Section IV.E.8: EOF – Performance-Based Approach

Support for the Establishment of Performance-Based Criteria

Comment: One commenter expressed general support for the codification of distance requirements for emergency operations facilities (EOFs) as proposed in Section IV.E.8.b and the establishment of performance-based criteria for EOFs proposed in Section IV.E.8.c. [0068]

NRC Response: No response is necessary.

4.3.2 10 CFR 52.79(a)(17): EOF – Performance-Based Approach

No comments addressed this section.

4.3.3 Removal of the term “near-site:” EOF – Performance-Based Approach

Opposition to Revised EOF Requirements

Comments: Three commenters objected to the exemptions in Section IV.E.8.e that would allow some licensees to continue using existing EOFs that are more than 25 miles away. The commenters argued that having a nearby EOF is important to facilitate coordination of emergency responses. [0065, 0068, 0072] One of the commenters highlighted the importance of access to real-time information from the plant and face-to-face interaction between decision makers as the benefits of having the EOF close to the plant. [0065]

NRC Response: The NRC disagrees with the commenters. The effectiveness of EOFs located more than 25 miles from a site has been demonstrated in drills, exercises, and actual events for several years. Exemptions previously granted to the requirement for a near-site EOF have included provisions for a facility closer to the site to facilitate face-to-face interactions with personnel entering and leaving the site. The final rule also includes this provision. No change was made to the final rule in response to these comments.

Comment: One commenter objected to the NRC allowing consolidated EOFs. Having a single EOF for each plant is useful because of site-by-site differences in reactor design, age, repair history, and quirks, and the surrounding communities. [0072]

NRC Response: The NRC disagrees with the commenter. The effectiveness of consolidated EOFs has been demonstrated in drills, exercises, and actual events for several years. The proposed rule required that a consolidated EOF and staff have the capabilities to respond to an event for any type of reactor served by the facility. No change was made to the final rule in response to this comment.

4.3.4 NSIR/DPR-ISG-01: Draft Interim Staff Guidance - EOF – Performance-Based Approach

Comment Regarding the Distance of the EOF from the Plant Site

Comment: One commenter pointed out that the guidance states that an EOF “more than 30 miles from the site entrance would be too far away to use as an alternative facility,” but does not state what distance would be acceptable. [0114]

NRC Response: The NRC disagrees in part with the comment. Although the NRC did not provide a specific acceptable distance for the alternative facility (or facilities), the NRC used this approach to allow flexibility in determining the location of the alternative facility (or facilities) based on site-specific characteristics. No change was made to the final rule or ISG in response to this comment.

4.3.5 Other: EOF – Performance-Based Approach

Other Comments Regarding EOFs

Comments: One commenter stated that a consolidated EOF should be well shielded and located at least 4 miles from a potential point of release. [0048] Another commenter objected to the possibility of a licensee using both “near and consolidated” EOFs. The commenter said that such an arrangement could lead to split control and authority which would impede decision making and communication. [0072]

NRC Response: The NRC disagrees with the commenters. EOF siting and shielding criteria are already addressed in NUREG-0696, “Functional Criteria for Emergency Response Facilities,” and NUREG-0737, “Clarification of TMI Action Plan Requirements,” Supplement 1, “Requirements for Emergency Response Capability.” A licensee would not staff and use more than one EOF at the same time in a situation where more than one facility was available, such as a site with an EOF within 10 miles and a backup EOF more than 10 miles from the same site. The final rule provides for a facility (not another EOF) closer to the site where NRC and other offsite response personnel can report when the EOF is located more than 25 miles from a site. No change was made to the final rule in response to these comments.

Comments: One commenter recommended that the “grandfather” provisions for existing EOFs should remain intact. [0135]

NRC Response: The NRC agrees with the commenter. Existing EOFs that deviated from NRC requirements and guidance regarding distance from a site, backup EOF characteristics, EOF consolidation, or other EOF attributes were evaluated and approved by the Commission, and continue to be acceptable under the final rule. Section IV.E.8.e of Appendix E was included in the proposed rule to allow for existing approved EOFs to be exempt from the requirements of new Section IV.E.8.b of Appendix E. Section IV.E.8.e has been retained in the final rule.

4.4 ETE Updating

4.4.1 10 CFR 50.47(b)(10): ETE Updating

Location of ETE Requirements

Comments: Commenters were concerned about the ETE updating requirement being in the proposed rule language. Five commenters stated that the ETE revisions should be presented in a guidance document and not within the Code of Federal Regulations (CFR). [0060, 0084, 0085, 0102, FEMA-2008-0022-0125] Another commenter suggested that because ETE updates are covered in the draft FEMA REP Manual, it is redundant to also cover it in the NRC rulemaking. [0071]

NRC Response: The NRC disagrees with the commenters. The NRC has determined that the requirement for updating ETEs needs to be in its regulations. Improving the accuracy of ETE values helps licensees recommend and offsite officials determine the most appropriate public protective action during an event. Current licensee response to guidance regarding updating of ETEs is inconsistent and not enforceable. A regulatory means of enforcing periodic ETE updates is necessary for consistent implementation. No change was made to the final rule or the guidance documents in response to these comments.

10 Percent Population Increase

Comments: Three commenters stated that the ETE updating threshold should not be based on a generic 10 percent increase criterion, but rather on a population sensitivity study that would assess the effect of a population change on ETEs. [0060, 0102, FEMA-2008-0022-0125] Another commenter agreed and argued that ETE updates should be based on the impact to evacuation times a population change has and not on a numerical change in population. [0085] A commenter argued that the greatest impact on evacuation time is the density of the population that feeds into major evacuation routes and not the size of the population. This commenter stated that this is because of “shadow evacuation” both inside and outside the EPZ and concluded that this phenomenon is not fully appreciated by the NRC. [0072] Another commenter agreed stating that the ETE update should be based on changes in population density. The commenter recommended a change in the language for 10 CFR 50.47(b)(10) that would reflect this comment: “If at any time during the decennial period, the population density (persons per square mile) within the emergency planning zone changes to the extent that the ETE for the area within 0-2 miles increases by 25% or 30 minutes, whichever is less, the ETE must be updated within 360 days to reflect the impact of that population density change. The ETE update must be maintained and be available for inspection.” [0090]

NRC Response: The NRC agrees in part with the commenters. The 10 percent population change criterion was changed. The final rule adopts the approach that licensees will determine when ETE values change by 25 percent or 30 minutes, whichever is less, to trigger an ETE analysis update. The NRC determined that basing ETE analysis updates on a population change alone without consideration of its impact on the ETE values may not have resulted in useful ETE updates. In addition, each licensee is required to update its ETE analysis after each decennial census. Implementation of such an approach will address the comments regarding shadow evacuation and population density. Note that comments pertaining to the details of ETE updates more appropriately address the regulation in 10 CFR Part 50, Appendix E, than 10 CFR 50.47(b)(10).

The NRC disagrees that it does not fully appreciate the effect of shadow evacuation inside and outside the EPZ. The NRC recognizes that shadow evacuations may occur and included an evaluation of shadow evacuations in NUREG/CR-6863, “Development of Evacuation Time Estimates for Nuclear Power Plants,” in 2005. Assessment of the effects of a potential shadow evacuation is expanded upon in the new guidance document NUREG/CR-7002, “Criteria for Development of Evacuation Time Estimate Studies.” Changes were made to the final rule and NUREG/CR-7002 in response to these comments.

State and Local ETEs

Comment: A commenter stated that the NRC should consider state and local ETEs that meet the requirements for EP as an alternative to licensee or applicant submittals of ETEs. [0084]

Another commenter stated that setting a “trigger point” that indicates the need for a revision of an ETE should not be done by a Federal agency. This commenter stated that the “trigger points” should be set by local emergency management leaders and that the decision to revise an ETE should remain at the local level. [0063]

NRC Response: The NRC disagrees with the commenters. The NRC does not have regulatory authority over State and local agencies, and therefore would have no enforcement authority over the quality or update frequency of their ETEs. Licensees have the option of submitting State or local ETEs or ETE updates as their own, which would be subject to NRC review.

The trigger point for changing the ETE should not be set at the local level. Placing the trigger point at the local level could result in inconsistent rule implementation across the nation and the NRC has no regulatory authority over State and local authorities to ensure consistency. No change was made to the final rule or the guidance documents in response to this comment.

ETE Modeling

Comment: Another commenter supported the requirement to update ETEs, but believed that the premise upon which the current ETEs are configured is flawed. This commenter noted that the “straight-line Gaussian plume modeling is not appropriate for use for reactors in complex terrain” and urged the NRC to incorporate changes to its plume modeling. [0083]

NRC Response: The NRC disagrees with the commenter. ETEs are developed with consideration of when an event may occur, weather conditions, traffic volume, and other unique EPZ characteristics, and are not based upon plume modeling. No change was made to the final rule or the guidance documents in response to this comment.

4.4.2 Part 50, Appendix E, Section IV: ETE Updating

Location of ETE Requirements

Comments: A commenter stated that the ETE revisions should be presented in a guidance document and not within the CFR. [0060] A commenter requested that the NRC remove the ETE requirements from the requirements for “Content of Emergency Plans.” [0084]

NRC Response: The NRC disagrees with the commenters. Improving the accuracy of ETE values helps licensees recommend and offsite officials determine the most appropriate public protective action during an event. Current licensee response to guidance regarding updating of ETEs is inconsistent and not enforceable. Therefore, the NRC determined that it needs to require its licensees to update their ETEs and include this requirement in its regulations. No change was made to the final rule or the guidance documents in response to these comments.

10 Percent Population Increase

Comments: Several commenters submitted comments on the 10 percent population increase being the triggering event that would require licensees to update their ETEs and some suggested alternatives. Two commenters stated that the threshold should not be based on a generic 10 percent population increase criterion, but rather on a population sensitivity study that would assess the effect of a population change on

ETEs. [0060, 0102] Two commenters suggested that the threshold to warrant an update should be based on a 25 percent change in the ETE baseline rather than on a 10 percent change in the EPZ population. [0096, 0102] One commenter requested that the NRC change the proposed rule to require that a new ETE be conducted when the EPZ population changes by 15 percent or when an ETE report is older than 20 years. [0043] A commenter stated that the NRC did not sufficiently explain or justify the statement “not requiring licensees to assess their ETEs until the population changes by more than 15 percent or 20 percent would allow too large a population change before assessing the impact on ETEs” and cited a sensitivity study where the population increased by 25 percent and the change for the ETE was only 5 minutes. [0102] Another commenter suggested that the requirement to update ETEs based on a 10-percent population change should only apply to sites with 10-mile EPZ populations greater than 50,000 people. [0062]

NRC Response: The NRC agrees in part with the commenters. The 10 percent population change criterion was changed. The final rule adopts the approach that the licensee will determine when the longest ETE for the 2-mile region, 5-mile region, or the entire EPZ changes by 25 percent or 30 minutes, whichever is less, to trigger an ETE analysis update. This ensures that only population changes that have a material impact on ETE values will trigger an update, regardless of the EPZ population. The NRC determined that basing ETE analysis updates on a population change alone without consideration of its impact on the ETE values may not have resulted in useful ETE updates. The wording concerning a sensitivity study to determine when an ETE update is necessary was not included in the rule language, but in the SOC. Licensees can determine how much of a population increase is necessary to trigger an ETE update (i.e., how much of a population increase causes the ETE values to increase by the threshold amount) by whatever method they deem acceptable. One method would be to perform a population sensitivity analysis. Changes were made to the final rule and NUREG/CR-7002 in response to these comments.

Comment: Another commenter recommended that revising NUREG-0654 to state that ETEs “should be updated as local conditions change” would achieve the desired safety benefits while allowing discretion to communities in determining when an ETE update is necessary. [0071]

NRC Response: The NRC disagrees with the commenter. Current licensee response to guidance regarding ETE updates is inconsistent and not enforceable. Therefore, the NRC has determined that the requirement for ETE updates must be in its regulations. Also, the NRC has no regulatory authority over State and local agencies, and therefore would have no enforcement authority over the quality or update frequency of their ETEs. No change was made to the final rule or the guidance documents in response to this comment.

Transient Residents

Comment: A commenter stated that the regulatory language is not clear as to whether this section addresses the permanent resident and transient populations independently or as a total population. This commenter pointed out that the decennial census data and licensee estimates of permanent resident population changes would not reflect changes in transient populations and requested that the NRC clarify the treatment of transient population changes for ETE updates. [0084]

NRC Response: The NRC agrees with the commenter. NUREG/CR-7002 was revised to clarify that when the licensee performs its annual EPZ population review to determine if an ETE analysis update is required, it may assume that the transient population is unchanged from the baseline analysis. Changes were made to NUREG/CR-7002 in response to this comment.

Protective Actions

Comments: A commenter pointed out that ETEs only analyze the time that is required to evacuate areas within the EPZ. The commenter requested that the NRC clarify the sentence “time required...for taking other protective actions” because the only other protective action is to shelter-in-place and would not fall under the ETE. The same commenter noted that ETEs are used primarily by offsite officials to determine the most appropriate protective action and recommended alternative rule language to reflect this point: “NRC-approved evacuation time estimates (ETEs) and updates to the ETEs must be provided to State and local governmental authorities for use in developing protective action strategies.” [0102]

NRC Response: The NRC agrees in part with the commenter. The NRC agrees with the comment concerning the present rule language phrase “time required...for taking other protective actions.” The only other protective action would be to shelter in place. Therefore, the NRC has removed this phrase from the final rule language.

The NRC agrees in part with the suggested language. The NRC agrees that the ETEs and ETE updates must be provided to State and local authorities for use in developing protective action strategies, but the intent of the final rule language is to also require licensees to use the ETE in the protective action recommendation (PAR) process. Changes were made to the final rule in response to this comment.

Census Bureau Data

Comments: Two commenters stated that the decennial ETE should only be developed once all needed data, including transients and permanent residents, have been released by the Census Bureau. [0098, 0102] One of the commenters added that the data should only come from the U.S. Census and not from State or local population. [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenters. The NRC agrees that the decennial ETE should be developed after U.S. Census Bureau data is available. The final rule requires nuclear power reactor licensees to develop an ETE analysis using the most recent U.S. Census Bureau data and submit it to the NRC for review to confirm adequacy within 365 days of availability of the decennial census data from the U.S. Census Bureau. The NRC disagrees on the use of only U.S. Census Bureau data for annual population estimates in between decennial censuses. The final rule permits licensees to use Federal, State, or local governmental population data for these estimates. NUREG/CR-7002 explains that licensees should use U.S. Census Bureau population data or State/local population estimates, if available, for determining population increases. Changes were made to the final rule and guidance document in response to these comments.

Comments: A commenter suggested that the 180-day ETE update deadline (after the release of the census data) may be unrealistic. The commenter pointed out that census data is released between April 2011 and September 2013. This commenter suggested that ETE updates should not be updated until all of the needed data has been released by the U.S.

Census Bureau. [0102] Another commenter agreed, stating that the proposed 180-day turn-around time for ETE studies to the NRC for review is not realistic. [0130] The commenter proposed the following revision: “Within 180 days of issuance of the decennial census data for transient and permanent populations by the U.S. Census Bureau, nuclear power reactor licensees and license applicants shall develop an ETE and submit it to the NRC for review and approval under § 50.4.” [0130]

NRC Response: The NRC agrees with the commenters. The NRC agrees that 180 days to complete ETE updates could be challenging based on the number of licensees and the limited number of commercial contractors available to complete the updates. Therefore, the NRC is extending the amount of time to complete ETE analysis updates from 180 to 365 days from when a population change triggers the update or the availability of census data. Changes were made to the final rule and NUREG/CR-7002 in response to these comments.

Offsite Planning

Comments: A commenter argued that ETEs provide useful information to offsite response agencies. The commenter recommended that an ETE’s impact on offsite planning should be considered within the proposed regulation. This commenter added that the proposed regulation fails to recognize that updating ETEs must be coordinated with offsite agencies and concluded that NRC approval is an unnecessary burden. [0084]

NRC Response: The NRC disagrees with the commenter. Licensees will follow the guidance in NUREG/CR-7002, or an acceptable alternative, when completing ETE updates. First, the licensee will coordinate with OROs in order to understand ORO emergency response resources. Then the licensee will develop the ETE update based on the available resources. There is no maximum or expected ETE so the OROs just provide the resources at their disposal. OROs then review the update for accuracy concerning available resources. ORO impact is minimal other than coordination with the licensee and review of the ETE update. The NRC has determined that review to confirm adequacy of ETE updates is necessary for consistency in implementation. No change was made to the final rule or NUREG/CR-7002 in response to these comments.

4.4.3 Draft NUREG/CR-7002: ETE Updating

ETE Updating

Comments: A commenter stated that the guidance should require utilities to annually update the population data in the EPZ and conduct a full update of the ETE whenever there is a 5 percent increase in population. In addition, this commenter argued that the ETE update should be done every five years or at the request of State or local authorities based on changes in the EPZ. The commenter also stated that the FEMA REP Program Manual requires pets to be included in the evacuation planning and urged that this guidance include this requirement. [0064]

NRC Response: The NRC disagrees with the commenter. The final rule adopts the approach that the licensee will determine when the longest ETE for the 2-mile region, 5-mile region, or the entire EPZ changes by 25 percent or 30 minutes, whichever is less, to trigger an ETE analysis update. Licensees are required to estimate permanent resident population annually during the years between decennial censuses, and update the ETE analysis if these criteria are met. The

NRC determined that basing ETE analysis updates on a generic population change alone, without consideration of its impact on the ETE values, may not result in useful ETE updates. The NRC does not believe that changes are needed to accommodate pets. The ETE mobilization time takes into account family preparation time for evacuation, which would include the transportation of pets if applicable. No changes were made to the final rule or NUREG/CR-7002 in response to these comments.

Transportation During an Evacuation

Comment: A commenter expressed concern about the NRC's assumptions regarding the ability for transit-dependent populations to obtain access to transportation during evacuations. This commenter requested that the NRC review and clarify its assumptions regarding this population. [0088]

NRC Response: The NRC disagrees with the commenter. The guidance accounts for the time necessary to evacuate transit dependent personnel, which would include the time to obtain access to transportation. The guidance advises that this time be included in the ETE. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Comment: A commenter suggested that the guidance's definition of "background traffic" double counts vehicles: "Any traffic that is not passing through the EPZ ('pass through traffic') must be people that either live, work or are visiting the EPZ." Thus, "background traffic" is already accounted for in the vehicle estimates for permanent and transient populations and recommended that the NRC remove the discussion on "background traffic." [0123]

NRC Response: The NRC disagrees with the commenter. Background traffic includes vehicles that are already on the road when an evacuation order is issued. This would include some people from the permanent and transient population, who may need time to return home before evacuating. Therefore, the consideration of background traffic is needed to support the calculation of the ETE. Although the NRC disagrees with the comment, NUREG/CR-7002, Section 2.5.3 was clarified to point out the importance of considering that this traffic may be on the roadway during an emergency and the ETE should include the time for these individuals to return home and evacuate, if necessary. A clarification was made to NUREG/CR-7002 as a result of this comment.

Comment: A commenter stated that most offsite agency plans and public information advise parents to not pick their children up from schools, but that most parents would ignore this advice. This commenter recommended that the NRC take this into consideration when determining the number of buses that would be needed to evacuate elementary and middle schools. [0121]

NRC Response: The NRC disagrees with the commenter. The evacuation of children is discussed in NUREG/CR-7002, Section 2.4. For planning purposes and calculation of the ETE, transportation resources for elementary and middle schools should be based on 100 percent school capacity. Although this assumption is conservative, there is no guarantee that parents will pick up elementary and middle school students, so planning is done for evacuation of all of these students. Some high school students drive to school and these students would be expected to evacuate in their own vehicles. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Comment: Another commenter questioned the value to the ETE of knowing vehicle queue length for special facilities. This commenter also recommended that the NRC add in bus driver rest time when discussing return trips for buses. [0126]

NRC Response: The NRC disagrees with the commenter. The queue length may not directly affect an ETE; but it provides supportive information used in the review of an ETE document. For example, these facilities may require 20 or more vehicles with a loading time of 15 minutes each. The analyst should consider these logistics when performing the ETE analysis. The logistics for bus drivers will vary by site and scenario and prescribing a rest time would not be appropriate for many situations. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Comment: A commenter stated that the majority of EPZs are low population density sites that do not have roadways which exceed capacity, even during evacuation. The commenter recommended that sentences within the “capacity analysis” section be revised to reflect this point. [0124]

NRC Response: The NRC disagrees with the commenter. There are some low population density sites where roadway capacity may not be exceeded, but this is not reflective of the majority of EPZs. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Treatment of Shadow Evacuation

Comments: A commenter stated that a higher voluntary evacuation percentage be used within the EPZ and recommended values based on the experience of ETE subject matter experts. [0102] A commenter stated that they were unsure how the NRC derived the estimate of 20 percent shadow evacuation. This commenter argued that shadow evacuations could encompass 40 percent of the population and argued that this assumption should be the default for shadow evacuations. [0088] Another commenter stated that the shadow evacuations contradict NUREG-6864, Volume 1, “Identification and Analysis of Factors Affecting Emergency Evacuation,” and questioned whether the guidance should be followed. [0043] One commenter referenced Figure 2-1 in NUREG/CR-7002 and suggested an additional figure to reflect shadow populations beyond the 10 mile radius. The commenter also asked if the shadow population should be measured as an actual or estimated (i.e., 20 percent) figure. [0122]

NRC Response: The NRC disagrees with the commenters. First, there is no quantitative basis for a higher shadow evacuation value than the 20 percent value used by the NRC. Second, the value of 20 percent was derived from NUREG/CR-6953, Volume II, based on responses of individuals who had evacuated when they had been requested not to do so. Third, the shadow evacuation does not contradict NUREG/CR-6864, which states that in the evacuations studied, the shadow evacuation did not impact the effectiveness of the evacuation. NUREG/CR-7002, which is guidance, states that the rings and sectors of Figure 2-1 may be extended to 15 miles to show the shadow populations. The document did not state that a shadow evacuation could not affect an evacuation. NUREG/CR-7002, Section 2.5.2 was changed to clarify that the 20 percent value is static to support a standardized assessment. A clarification was made to NUREG/CR-7002 as a result of these comments.

Evacuation Estimate Studies

Comments: A commenter stated that the proposed methodology for ETE studies is too detailed and requires data that is obscure and hard to obtain. [0043] Two commenters expressed concern that data required for the ETE studies will not be available. This data included population information from medical and correctional facilities. These commenters requested further guidance to address cases where the required information is not available. [0128, 0130] One of the commenters stated that the goal of this guidance is a comprehensive ETE study, but expressed concern that the “prescriptive nature” of this guidance document would encourage “unrealistic” or “unverifiable” assumptions in the absence of accurate/verifiable data. The commenter asked several questions about the guidance in NUREG/CR-7002. First, the commenter asked if licensees will be responsible for confirming the completeness of the detail contained in community plans as required by the NUREG/CR-7002. Second, the commenter asked if NRC’s guidance overlapped with FEMA’s responsibility to oversee community preparedness. Third, the commenter asked how ETE contractors should address situations where community resources and planning do not meet the standards set forth in the guidance document. [0130]

NRC Response: The NRC agrees in part with the commenters. The detail of the methodology is consistent with NUREG/CR-4831, “State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants,” and NUREG/CR-6863, “Development of Evacuation Time Estimates for Nuclear Power Plants.” The methodology in these NUREG/CRs has been applied to most ETEs currently in use. The data needed to develop ETEs is typically available and has not been a significant issue in the development of most ETE studies. However, the NRC agrees that there is a potential for data to be difficult to obtain for certain facilities. NUREG/CR-7002, Section 2.3, “Special Facility Residents,” specifies the use of assumptions when needed, as long as a basis for the assumptions is provided.

NUREG/CR-7002 is a guidance document, not enforceable requirements, and therefore licensees are not responsible for confirming the completeness of community plans. Licensees do not have the authority to require State and local agencies to meet planning standards, but should perform the ETE study based on the local resources that are available.

The prescriptive nature of the guidance is necessary for consistency and thoroughness. It also supports the review of data input and output values to ensure the data is realistic and verifiable, which will assist the analysis reviewer. Changes were made to NUREG/CR-7002 in response to these comments.

Inconsistencies with Other Regulatory Documents

Comment: A commenter stated that there are inconsistencies and conflicts between ETE guidance and requested that the NRC clarify the relationship between the documents. [0084] This and subsequent comments below list the specific sections of the guidance document that need to be clarified by the NRC, according to the commenter:

With regard to the Executive Summary on page vii, the last sentence on page vii states: “When the 0-2 mile evacuation is about complete, the 2-5 mile zone is ordered to evacuate.” The commenter explained that this statement needs to be clarified on whether the evacuation order for the 2-5 mile zone occurs when the evacuees from the 0-2 mile zone leave the EPZ, when they leave the 0-2 mile zone, or at some other point. [0084]

NRC Response: The NRC agrees with the commenter that the timing of the staged evacuation needs to be clarified in the guidance. When approximately 90 percent of the 0-2 mile zone has cleared the 2 mile zone boundary, based on the ETE, the 2-5 mile zone would be ordered to evacuate. The 2-5 mile residents enter the roadway network as the 0-2 mile population is passing through the area. Changes were made to the guidance documents in response to this comment.

Comment: With regard to Table 1-2, Assumption 1 indicates that the ETE is measured from the start of the initial EAS broadcast. The commenter stated that this assumption conflicts with Section 4.1.1, page 22, which indicates that the notification time, which precedes the EAS message, is considered part of the trip generation time. The commenter suggested that the NRC clarify the treatment of notification time. [0084]

NRC Response: The NRC agrees with the commenter. NUREG/CR-7002, Section 4.1.1 was revised to be consistent with Assumption 1, which states that the ETE is measured from the start of the initial EAS broadcast. Changes were made to the NUREG/CR-7002 in response to this comment.

Comment: With regard to Section 2.1 on page 11, the text states that the ETE should use population values for the year the ETE is prepared. However, Section C.1.13.3 of RG 1.206 and NUREG-0800 indicate that projections of the population over the requested duration of the application are necessary. The commenter suggested that many requests for additional information on ESP and COL applications have questioned the use of current population data and resulted in use of population projections for projected construction years and operational years. The commenter requested that the NRC provide consistent guidance regarding the use of current and projected population data. [0084]

NRC Response: The NRC disagrees with the commenter. The guidance document provides the methodology for development of ETE studies. Depending upon the reason the ETE is prepared, such as an application for a Part 52 combined license, additional requirements may apply, such as projecting the population values. Under the final rule, the ETE is required to be updated periodically based on the effect of population changes. Therefore, projecting future populations is not needed, although licensees are required to provide annual population estimates. No change was made to NUREG/CR-7002 in response to this comment.

Comment: With regard to Section 2.5.1 on page 15, the text indicates that: "This is based on site specific characteristics as there may be seasonal events that warrant development of additional ETEs." The commenter stated that this sentence conflicts with the previous sentence, which indicates that only one special event ETE requires analysis. The commenter suggested that the NRC clarify the guidance for performance of multiple special event ETEs. [0084]

NRC Response: The NRC agrees with the commenter. The referenced sentence was deleted to clarify that only one special event ETE should be analyzed. Changes were made to the NUREG/CR-7002 in response to this comment.

Comment: Section 2.5.2 on page 16 states: "A shadow evacuation of 20 percent of the permanent resident population...should be assumed to occur in areas outside the evacuation area." A subsequent sentence indicates that: "For a staged evacuation, when developing the 0-2 mile ETE, it should be assumed that 20% of the remaining EPZ permanent resident

population evacuates as a shadow evacuation.” The commenter suggested the NRC needs to clarify if the 0-2 mile analysis is supposed to consider a shadow evacuation of the 15-mile radius, or of only the remainder of the plume exposure pathway EPZ (i.e., the 2-10 mile zone). [0084]

NRC Response: The NRC agrees with the commenter. Section 2.5.2, “Shadow Evacuation,” of the final guidance document was revised to clarify the approach in the analysis of the shadow evacuation. This section now reads, “A shadow evacuation of 20 percent of the permanent resident population, based on U.S. Census Bureau data, should be assumed to occur in areas outside of the evacuation area being assessed extending to 15 miles from the NPP. The 20 percent value is static to support a standardized assessment. A shadow evacuation would likely occur in a graded manner with the potential for a 20 percent shadow evacuation to occur from the areas that are closer to the declared evacuation area, decreasing with distance away from the affected area.”

The NRC recognizes that the percent of population participating in a shadow evacuation would be graded with a larger percent (about 20%) nearer the evacuation area, decreasing with distance away from the hazard. However, for consistency in analysis, a 20% value is assigned. Changes were made to NUREG/CR-7002 in response to this comment.

Comment: Section 3.1 on page 17 indicates that: “In all cases, a field survey of the key routes ... should be performed.” The commenter stated that the NRC should clarify if a field survey is necessary for an ETE update in the absence of significant changes to the road network. [0084]

NRC Response: The NRC disagrees with the commenter. Field surveys provide more than just information on roadway changes. These surveys provide first hand information regarding potential impediments, access points, new developments, etc., that are not necessarily significant changes to the road network, but could affect the evacuation time estimate. No change was made to NUREG/CR-7002 in response to this comment.

Comment: Section 5.4 on page 32 addresses the need for an ETE update when the population changes by 10 percent or more. The commenter stated that the NRC should provide guidance allowing for sensitivity studies in lieu of full ETE updates. [0084]

NRC Response: The NRC agrees in part with the commenter. The licensee must update the ETE analysis when a population increase causes a material increase to ETE values. The final rule adopts the approach that the licensee will determine when the longest ETE for the 2-mile region, 5-mile region, or the entire EPZ changes by 25 percent or 30 minutes, whichever is less, to trigger an ETE analysis update. Licensees are required to estimate permanent resident population annually during the years between decennial censuses, and update the ETE analysis if these criteria are met. Changes were made to the final rule and NUREG/CR-7002 in response to this comment.

Other Protective Actions

Comment: A commenter requested that guidance be provided for performing an analysis of the time required to take “other protective actions.” [0084]

NRC Response: The NRC agrees with the commenter. The NRC determined that the former rule language phrase “time required...for taking other protective actions” was not needed

because the only other protective action is to shelter in place. Therefore the NRC removed this phrase from the final rule language. Changes were made to the final rule in response to this comment.

Sensitivity Studies

Comment: One commenter noted that the majority of EPZs are of low population (Type I), and the relatively few EPZs with high population (Type II) skew the population distribution and produce a mean that is about double the median. The commenter recommended that it is necessary to recognize the importance of the relation between EPZ types and the ETE. As such, the commenter stated that the ETE updates should include a sensitivity study and recommended what it should include and how the results should be used. The commenter then listed the advantages of conducting a sensitivity study. [0102]

NRC Response: The NRC agrees with the commenter. The final rule adopts the approach of determining when the longest ETE for the 2-mile region, 5-mile region, or the entire EPZ changes by 25 percent or 30 minutes, whichever is less, to trigger an ETE analysis update. The NRC determined that a population increase must have a material impact on ETE values before an ETE update is required, regardless of the total EPZ population. Licensees should use a population sensitivity study or other appropriate method to determine when this trigger is reached. Licensees are required to estimate permanent resident population annually during the years between decennial censuses, and update the ETE analysis if these criteria are met. Changes were made to the final rule and NUREG/CR-7002 in response to this comment.

Staged Evacuation

Comments: A commenter noted that the study assumes 99.5 percent of those advised to shelter will comply. The commenter suggested that this assumption is unrealistic. As a result, the commenter requested that the NRC justify the duration of time for sheltering of people in the 2-5 mile zone. This commenter stated that sensitivity tests with a simulation model could identify the minimum shelter duration for those within the 2-5 mile zone that would allow those in the 0-2 mile zone to evacuate the area. This commenter also requested that the NRC discuss how staged evacuations will be accomplished. [0102] Another commenter stated that some plants define their emergency response planning area (ERPA) in a 5-mile radius and do not break it down by 2 and 5-mile zones. This commenter asked how staged evacuations will be computed for these plants. [0112]

NRC Response: The NRC agrees in part and disagrees in part with the commenters. The NRC disagrees that the study makes an assumption that 99.5 percent of those advised to shelter will comply. The study contains no specific assumption regarding the percentage of the public who would comply with sheltering, but does account for shadow evacuations that could include some members of the public in areas directed to shelter.

The NRC agrees that the guidance document needed clarification regarding shelter duration. For a staged evacuation, when approximately 90 percent of the 0-2 mile zone has cleared the 2 mile zone boundary, based on the ETE, the 2-5 mile zone would receive an evacuation order.

The NRC disagrees with the need to discuss the method for staged evacuations. The ETE provides the time necessary for evacuation, but does not prescribe the methods. Each licensee has the flexibility to determine the best method based on site specific criteria.

The NRC agrees that clarification is needed for staged evacuations of large ERPAs that extend beyond two miles. Licensees are directed to take site specific PAR logic into account in the ETE analysis. Therefore, ETE values should be based on this logic, which takes into account local ERPA boundaries. Changes were made to the guidance document in response to these comments.

Traffic Signal Timing Field Data Requirement

Comments: A commenter stated that the use of intersection signal timing is not realistic for an emergency situation. This commenter recommended that traffic demand patterns should be estimated using an iterative procedure. In addition, this commenter requested that ETE contractors contact local agencies in order to determine whether any special signal timing plans exist. [0102] Another commenter stated that the traffic control plans (signal timing) are rarely available and added that collection of this data in the field will take longer than 180 days. [0130] Another commenter questioned what value the information obtained from “the 10 highest volume intersections within the EPZ” would have in developing the ETE and questioned how the agencies would use this data. [0125]

NRC Response: The NRC agrees in part with the commenters. The guidance to use actual intersection signal timing was removed. NUREG/CR-7002, Section 3.3, “Intersection Control,” was revised to allow a graded approach to modeling of intersections depending on the type of signalization or traffic control in place at the intersection. Changes were made to NUREG/CR-7002 in response to these comments.

Delivery of ETE Reports

Comment: A commenter recommended that a database of the EPZ populations be developed for all 65 sites. This commenter also recommended a delivery schedule for decennial year ETE updates. [0102]

NRC Response: The NRC disagrees with the commenter. There is no need for a central database of EPZ populations, which would be an administrative burden to maintain. The NRC intends to establish a schedule for review to confirm the adequacy of the updated ETEs. However, this information is not needed in the final rule or guidance document. No change was made to the final rule or the guidance document in response to this comment.

Truncation of Trip Generation Time

Comments: One commenter referenced page 27 of NUREG/CR-7002 and asked NRC to clarify what constitutes an “adequate basis” for truncating survey data. For example, the commenter asked whether the results of a “statistical outlier analysis” would be an adequate basis for truncating trip generation time values collected by public survey. [0127]

NRC Response: The NRC agrees with the commenter. The results of a “statistical outlier analysis” would be a valid basis for truncating data received from public surveys. NUREG/CR-7002, Section 4.3, “Evacuation Time Estimates for the General Public,” was revised to clarify this issue. Changes were made to NUREG/CR-7002 in response to this comment.

4.4.4 Other: ETE Updating

Alternatives to the 10-Percent Population Increase

Comments: A commenter stated that the ETE section of the rule needs to be “overhauled.” This commenter recommended that the NRC replace the scenario where evacuation of the whole EPZ is analyzed with sensitivity studies on health effects and compensatory actions. This commenter also requested that additional analyses be restricted to a few high population sites. [0048] Another commenter agreed that it should be possible to assess the impact of population changes by conducting a sensitivity analysis. [0084] A commenter stated that population changes should not be viewed as the sole basis for conducting an ETE. This commenter also stated that licensees should not be required to revise their ETEs if the population decreases. [0096] A commenter argued that the NRC’s proposed trigger of a 10-percent change in population may not be sufficient to always ensure timely updating. This commenter recommended that ETE updates be based on traffic volume or a preset time period. [0109] A commenter suggested that the proposed rule take into consideration population density as a factor rather than treating all sites equally. [0090] Another commenter stated that the proposed rule applies a set of criteria to a wide variety of situations (e.g., small or large population, small or large ERPAs). The commenter called for further rationale and definition of terms before the proposed rule is implemented. The commenter concluded that “one size does not fit all situations.” [0135]

NRC Response: The NRC agrees in part and disagrees in part with the commenters. The NRC does not believe that the ETE section of the rule needs to be overhauled. The intent of the final rule is to ensure that licensees have the most up-to-date ETE information to support protective action decision-making. The ETE analysis and the final rule are not the appropriate forums for assessing potential health effects and compensatory actions. The NRC also disagrees that maintaining current ETE analyses be limited to a few high population sites. All reactor sites could experience population changes that impact ETE values, and therefore the final rule should apply to all nuclear power reactor licensees.

The NRC agrees that “one size does not fit all situations” regarding the trigger for updating ETEs and the threshold for ETE updates in the proposed rule should be changed. Suggested alternative thresholds included various population sensitivity studies that would assess the effects of population changes on ETE values; a 25 percent change in the ETE baseline rather than a 10 percent change in the EPZ population; and population changes resulting in a change to ETE values of 25 percent or 30 minutes, whichever is less. The final rule adopts the approach of a 25 percent or 30 minute increase in ETE values to determine when an ETE analysis update is warranted. Licensees would first perform a population sensitivity analysis to determine the population increase that would cause this increase in ETE values. The NRC determined that basing ETE analysis updates on a population change alone without consideration of its impact on the ETE values may not result in useful ETE updates. The rationale and methodology for performing ETE updates are described in detail in the final rule and NUREG/CR-7002; therefore, the NRC disagrees that any further information is needed prior to publication of the final rule.

The NRC disagrees that ETE updates are not necessary if the EPZ population decreases. An ETE decrease is beneficial information to ORO protective action decision-making. However, the NRC determined that population decreases would be accounted for during the decennial census update. The NRC also disagrees that ETE updates be based on traffic volume. Sandia

National Laboratory (SNL), based upon their expertise developed from years of researching evacuations, confirmed that the major contributor to changes in ETE values is changes in population. Population changes have a direct correlation to the volume of vehicles on the roadway, which directly affects the roadway capacity. Therefore, the NRC determined that population change is the more appropriate metric to monitor the potential effect on roadway capacity.

Changes were made to the final rule and NUREG/CR-7002 in response to these comments.

Comments: A commenter stated licensees would be required to continuously monitor changes in population to determine when a 10-percent population change has occurred. The commenter suggested that the NRC change this requirement so that licensees only have to perform reviews five years after submitting the last ETE. [0076] Another commenter agreed, and stated that the updates should be done every three to five years or at the request of the State or local government. [0064] A commenter stated that all licensees should be required to update their ETE estimates within two years of any changes to the requirements for ETE studies and methods used. [0088]

NRC Response: The NRC disagrees with the commenters. There is no basis for developing ETEs on a five-year or a three to five year period. Also, there is no reason for an update within two years of new guidance being issued if there is no population change to warrant an update. The NRC determined that ETE updates would be more effective if based on a population increase that has a material impact on ETE values, rather than a generic 10 percent population change. The final rule adopts the approach of a 25 percent or 30 minute increase in ETE values to determine when an ETE analysis update is warranted. Licensees would first perform a population sensitivity analysis to determine the population increase that would cause this increase in ETE values. The NRC determined that basing ETE analysis updates on a population change alone without consideration of its impact on the ETE values may not result in useful ETE updates. No change was made to the final rule or NUREG/CR-7002 in response to these comments.

Phased Approach

Comments: A commenter objected to implementing a phased evacuation approach and gave four reasons why. First, the commenter stated that officials have no clear idea what population is most at risk. Second, the commenter explained that today's communications capabilities assure the news will travel quickly through the affected population and those not considered "at risk" will self-evacuate. Third, the commenter asserted that the phased approach ignores shadow evacuation. Finally, the commenter explained that employing a phased approach will undermine authority. The commenter suggested that the regulation provide detailed functional requirements for the ETE. [0072] A commenter disagreed with the first commenter and stated that a phased approach within the evacuation plan should be used that focuses more attention on the region within 0-2 miles rather than the entire EPZ. [0090]

NRC Response: The NRC disagrees with the commenters. First, local officials do have an understanding of the population most at risk based on many years of participating in biennial EP exercises. Second, studies such as NUREG/CR-6864, "Identification and Analysis of Factors Affecting Emergency Evacuations," show that residents largely follow the orders of officials. Self evacuation is not expected to affect the staged evacuation. Third, a shadow evacuation is not ignored in the staged evacuation scenario. Every scenario assumes a shadow evacuation

of 20 percent of the permanent resident population in areas outside of the evacuation area being assessed extending out to 15 miles from the NPP. There is no basis to show that a staged evacuation undermines authority. Lastly, NUREG/CR-7002 considers all areas within the EPZ equally. The NRC has determined that the necessity for ETE studies and periodic updates be included in the regulations while the details of how to perform the study be documented in guidance. This would provide licensees flexibility in performing the ETE study and permit changes to the guidance without a formal rulemaking process. No change was made to the final rule or NUREG/CR-7002 in response to these comments.

Shadow Evacuations

Comments: A commenter stated that the shadow evacuation assumed by the NRC in NUREG/CR-7002 was conservative. This commenter added that licensees should be required to use a more accurate estimate of shadow evacuation. The commenter recommended that NRC impose performance standards for ETEs that require licensees to demonstrate timely evacuations under varying relevant conditions. [0109]

NRC Response: The NRC disagrees with the commenter. Quantitative data for shadow evacuations is not available on a site-specific basis. However, to better define the expectations in the analysis of the shadow evacuation, NUREG/CR-7002, Section 2.5.2, "Shadow Evacuation," was revised to clarify the approach. This section states, "A shadow evacuation of 20 percent of the permanent resident population, based on U.S. Census Bureau data, should be assumed to occur in areas outside of the evacuation area being assessed extending to 15 miles from the NPP. The 20 percent value is static to support a standardized assessment. A shadow evacuation would likely occur in a graded manner with the potential for a 20 percent shadow to occur from the areas that are closer to the declared evacuation area, decreasing with distance away from the affected area."

The NRC recognizes that the percent of population participating in a shadow evacuation would be graded with a larger percent (about 20%) nearer the evacuation area, decreasing with distance away from the hazard. However, for consistency in analysis, a 20% value is assigned. Licensees are required to calculate the ETE based on site-specific characteristics and not meet a specific time standard in order to be acceptable. Requiring licensees to perform regular evacuations would needlessly place the public at risk and therefore should not be required. A clarification was made to NUREG/CR-7002 in response to this comment.

Evacuation Plans

Comments: A commenter stated that the emergency evacuation plan is unrealistic in heavily populated areas. [0053] Another commenter stated that because the State and counties will be implementing the evacuation plans, they should be the ones to decide what is best for their jurisdiction. [0056] A commenter also stated that without accurate assessment of plume transport, evacuation plans will continue to be designed without knowing what portion of the population will be affected by a radiological release. This commenter also urged the NRC to expand the evacuation zone to at least 50 miles. The commenter also stated that the ETEs should take into consideration commuter traffic during rush hour. [0109]

NRC Response: The NRC disagrees with the commenters. Large scale evacuations have been successfully completed in the US about once every 3 weeks for more than 20 years as described in NUREG/CR-6864, "Identification and Analysis of Factors Affecting Emergency

Evacuations.” States and counties make the protective action decisions and are the authorities that decide what is best for their jurisdiction. Licensees provide the ETE analysis to these authorities so that they have information regarding the estimated time to evacuate, and can use that information when making the protective action decision.

No connection exists between the ETE and assessment of plume transport. These are separate analyses and although evacuation speed may be an input to a plume model, the development of the ETE is in no way related to the plume model.

No basis is provided in the comment to consider expanding the evacuation zone to 50 miles.

The guidance does not explicitly include consideration of a rush hour scenario. Such a scenario may have more traffic on roadways at the start of an action, but does not necessarily provide the more challenging scenario or a longer ETE because the summer midweek daytime and winter midweek daytime scenarios would bound a rush hour scenario in that they would take into account the same number of workers, but those workers would be located the farthest distance from home (i.e., at work). When notified, the workers would then travel home, prepare, and evacuate. During rush hour, workers are already on the road and potentially closer to home when they receive notification of the emergency. No change was made to the final rule or NUREG/CR-7002 in response to these comments.

Comments: A commenter stated that the NRC should require realistic modeling for deciding how to stage the evacuation of institutionalized populations. This commenter also asserted that institutions containing immobile populations should be equipped with radiation monitors and contingency plans. [0088]

NRC Response: The NRC disagrees with the commenter. Licensed institutions are required to meet the conditions of their State license. The NRC does not have authority over these institutions. The ETE guidance provides a methodology to assure that resources needed to support evacuation of these facilities are quantified and used in estimating the time to evacuate these facilities. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Resource Use

Comment: A commenter expressed concern about the burden this regulation would place on the NRC, licensees, and State and local government resources. This commenter recommended that the NRC make an assessment of the resources needed to complete ETE revision, review, and approval and reconsider the proposed requirements based on those findings. [0084]

NRC Response: The NRC disagrees with the commenter. The NRC considered the burden to licensees of conducting ETE updates in the regulatory analysis and it was deemed acceptable. There is minimal impact on State and local governments because only key decision-makers would use this information. No training would be necessary since the decision-makers are already acquainted with the process of using ETE values for protective action decisions. The NRC will factor the ETE reviews into its future resource planning. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Requests for Clarification

Comments: A commenter requested that the NRC clarify what “regulations are in place” in cases where infrastructure changes occur due to a catastrophic event and added that these regulations should be cited. The same commenter stated that the timeframe for NRC review and approval of ETEs should be specified. The commenter also requested that the NRC re-evaluate the statement: “NRC believes that the 10% threshold would balance potential inadequacies and burdens.” [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenter. The NRC acknowledges that the wording “regulations are in place” for cases where infrastructure changes occur due to a catastrophic event was not valid and this wording was deleted from the final rule SOC.

The NRC disagrees that the timeframe for NRC review be specified. The NRC intends to establish a schedule for review to confirm the adequacy of the updated ETEs. This information is not necessary for the final rule or guidance document.

The NRC agrees that the 10 percent population change criterion for ETE updates should be changed. The final rule adopts the approach of a 25 percent or 30 minute increase in ETE values to determine when an ETE analysis update is warranted. Changes were made to the final rule and the guidance document in response to these comments.

ETE Updates

Comment: A commenter requested that the proposed rule address the submittal of ETEs for new plants that submit applications for COLs or ESPs between decennial census updates. This commenter stated that the ETEs for new applicants should be developed using the latest decennial data and only updated prior to actual operation. [0102]

NRC Response: The NRC agrees with the commenter. The final rule directs license applicants to use “the most recent U.S. Census Bureau data as of the date the applicant submits its application to the NRC” when developing their ETE analyses. After the Part 52 license applicant receives its combined license, the licensee is required to conduct at least one review of any changes in the population of its EPZ, using the same process as currently operating nuclear power reactor licensees, at least 365 days prior to its scheduled fuel load. Changes were made to the final rule in response to this comment.

Comment: A commenter stated that there needed to be an enforcement structure and that the NRC should require annual submittals by licensees to explain their population estimate reviews. [0109]

NRC Response: The NRC disagrees with the commenter. Licensees are required to maintain these estimates so that they are available for NRC inspection during the period between censuses and to submit these estimates to the NRC with any updated ETE analysis. Therefore, there is no need for the NRC to review annual licensee population estimates. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Comment: A commenter requested that the NRC impose “ETE standards of performance” that would require licensees to demonstrate that they used proper assumptions and methodologies. [0109]

NRC Response: The NRC disagrees with the commenter. The guidance document establishes a methodology that will be used by the NRC to review ETE submittals. Licensees have the flexibility to use this methodology or an alternative that the NRC finds acceptable to develop their ETE analyses. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Requests for Changes in Federal Register Language

Comment: A commenter recommended a change to the FRN language on page 23265 because licensees do not typically use ETEs to recommend PARs. The commenter suggested the following language: “Improving the accuracy and quality of ETE values would help offsite officials determine the most appropriate protective action.” [0102]

NRC Response: The NRC disagrees with the commenter. The intent of the final rule language is to require licensees to use the ETE analysis in the protective action recommendation process. No change was made to the final rule or SOC in response to this comment.

Comment: A commenter recommended a change to the FRN language on page 23265 because OROs are primarily responsible for protective action strategies. The commenter suggested the following language: “Further, the NRC concluded that the effect of population change upon evacuation times should be understood by OROs and incorporated into offsite protective action strategies.” [0102]

NRC Response: The NRC agrees with the commenter. The SOC wording was changed to clarify that the effect of population changes should be incorporated into offsite protective action strategies. Changes were made to the final rule and SOC in response to this comment.

Comment: A commenter recommended changes to the FRN language on page 23265 because population is more likely to change than infrastructure. [0102]

NRC Response: The NRC agrees in part with the commenter. Population and infrastructure changes can affect the ETE, and population changes that could impact the ETE can occur in less time than changes to infrastructure, which can take many years. The NRC did not make the changes recommended by the commenter but did revise the final rule to adopt the approach of a 25 percent or 30 minute increase in ETE values to determine when an ETE analysis update is warranted. No change was made to the final rule in response to these comments.

Comments: Two commenters argued that a material change in ETE was not discussed and that a material change would be a change in baseline ETE of 25 percent or 30 minutes or more. These commenters also were concerned that the use of ETEs in the development of public protective action strategies is not addressed. [0098, 0102]

NRC Response: The NRC agrees in part with the commenters. As discussed in previous comment responses, the 10 percent population criterion was changed, for reasons other than those mentioned in these comments, to a criterion that takes into account the effect of population change on the ETE values that would cause a change in those values of 25 percent

or 30 minutes, whichever is less. No change was made to the final rule in response to these comments.

Comment: A commenter noted that ETEs are used primarily by offsite officials to determine the most appropriate protective action and recommended a change in language to the FRN language on page 23270. The commenter suggested the following language: “The NRC would expect that the updated ETEs would be shared with OROs to be incorporated into offsite protective action strategies.” [0102]

NRC Response: The NRC agrees with the commenter. The word “offsite” was inserted into the SOC to clarify that the NRC would expect OROs to incorporate the updated ETEs into their offsite protective action strategies. Changes were made to the final rule NUREG/CR-7002 in response to this comment.

Comments: A commenter argued that when ETEs are reviewed, all ERPAs should be reviewed to see the cumulative impacts on the EPZ clearance times. This commenter also suggested that reviewing a single ERPA on the basis of largest population would not capture population trends. [0096] Another commenter agreed and commented that the most populous ERPA does not necessarily impact the ETE for the entire EPZ. [0102]

NRC Response: The NRC agrees in part with the commenters. The 10 percent population criterion was modified to a criterion that takes into account the effect of population change on the ETE values. However, the new criterion is specific to the effect of population change on the ETE rather than level of service. As part of this change, the population of the largest ERPA will no longer be considered. Changes were made to the final rule and NUREG/CR-7002 in response to these comments.

Comment: A commenter recommended the NRC change the language on page 23270 of the FRN because the details of the ETE updates belong in a guidance document and not in the rule language. [0102]

NRC Response: The NRC agrees in part with the commenter. Some of the details concerning ETE updates and submissions are provided in guidance. However, the update criteria, including the population trigger value and necessity of annual population reviews, must be included in the rule to ensure consistent implementation. No change was made to the final rule in response to this comment.

Comment: A commenter argued that the licensee should discuss potential enhancements to improve evacuation times with OROs because they will decide whether to implement enhancements. The commenter recommended that the NRC revise the FRN on page 23273 as follows: “Licensees would also be expected to identify and analyze potential enhancements to improve evacuation times and discuss with OROs whether implementation of potential enhancements is appropriate.” [0102]

NRC Response: The NRC agrees in part with the commenter. The NRC will expect licensees to identify potential enhancements to improve evacuation times and discuss them with OROs. The OROs have the responsibility to analyze potential enhancements for implementation. No change was made to the final rule or NUREG/CR-7002 in response to this comment.

Comment: A commenter stated that a sensitivity study should determine when an ETE needs to be updated and not the generic 10-percent criterion. This commenter recommended the NRC change the language on page 23273 of the FRN as follows: “Sites with little population change that does not materially affect ETE would not be substantially impacted by the proposed requirement, while those sites with population change that does materially affect ETE would be required to perform more frequent updates.” [0102]

NRC Response: The NRC agrees with the commenter. The 10 percent population criterion was changed to the approach using a population sensitivity study to determine when a population change materially impacts ETE values. The final rule SOC language was also modified to note that those sites that experience a population change that materially affects the ETE would be required to perform more frequent updates. Changes were made to the final rule in response to this comment.

Comment: A commenter stated that the U.S. census should be used instead of State and local data. This commenter recommended that the NRC revise the language on page 23273 of the FRN as follows: “The review would consist of analysis of population growth based on U.S. Census Bureau data (e.g., Subcounty Population Datasets for population estimates) and would examine the whole EPZ.” [0102]

NRC Response: The NRC disagrees in part with the commenter. Licensees are required to use the most recent U.S. Census Bureau annual resident population data to determine if an ETE update is necessary. State and local population data may also be used, if available. This provides licensees flexibility to use all available data in determining when ETE update criteria have been met. No changes were made to the final rule in response to this comment.

4.5 Amended Emergency Plan Change Process

4.5.1 10 CFR 50.54(q): Amended Emergency Plan Change Process

Recommended Changes to Proposed Rule

Comments: Some commenters disagreed with the NRC introduction of the term “emergency planning function,” and suggested that the rule instead directly refer to the 10 CFR 50.47(b) planning standards and the requirements of Appendix E. These comments generally stated that the use of the “emergency planning function” phrase was not necessary to address power and non-power reactors, that planning standards should be used because compliance is based on the planning standards and that emergency planning functions would be treated as regulatory requirements. The use of “emergency planning functions” would increase ambiguity and confusion. [0084, 0102]

NRC Response: The NRC disagrees with the commenters. The 10 CFR 50.54(q) change process establishes a two-criteria test to establish whether the licensee has the authority to make a change without prior NRC approval. First, the plan as modified must continue to comply with the requirements of Appendix E, and for power reactors, the planning standards of 10 CFR 50.47(b). Second, the licensee must establish that the change does not reduce the effectiveness of the emergency plan. The proposed rule used the requirements of Appendix E, and for power reactors, the planning standards of 10 CFR 50.47(b) for the first test factor. The proposed rule defined a “reduction in effectiveness” in terms of “emergency planning functions”

for evaluating the second test factor. The two factors are distinct and separate and, accordingly, so are the criteria they are compared against. The effect of the comments would be to inappropriately use the same criterion for both test factors.

Under 10 CFR 50.47(a)(1)(i), an operating license is issued only if the NRC finds that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. This finding continues in force subject to 10 CFR 50.54(s)(2)(ii). A reasonable assurance finding is based, in part, on a licensee's compliance with the requirements of Appendix E, and for nuclear power reactor licensees, the planning standards of 10 CFR 50.47(b). However, the NRC's EP regulations are intentionally broadly-worded to provide for addressing plant-specific, site-specific, and EPZ-specific constraints to emergency preparedness and emergency response. During the licensing process, the licensee (or the NRC) may have identified planning constraints and vulnerabilities that required the licensee to commit to site-specific methods, capabilities, and resources beyond those found to be in compliance at another reactor facility. For example, an applicant at a site with complex topography may have been required to establish a more advanced emergency dose assessment capability. Also, after receiving its license, a licensee may have identified newly developed planning or response constraints, or self-identified weaknesses in its emergency plan, and implemented corrective actions beyond that identified in its emergency plan. For example, a licensee may add additional people on-shift as a corrective action to an observed inability to augment the ERO in a timely manner. A licensee seeking to relax either of these example requirements under 10 CFR 50.54(q) would need to determine that the emergency plan can continue to be effective, as modified. This determination will generally require that the licensee establish that the considerations that made the site-specific requirements necessary are no longer applicable to that site, or that an alternative approach would maintain the effectiveness. Thus, what may be adequate to demonstrate compliance at one facility may not be adequate for a different facility, even if the same corporate entity holds the licenses for both facilities.

The NRC disagrees with the comment that the use of "emergency planning function" would create confusion regarding the basis for violations cited by the NRC any more than the use of "planning standard function" does in the assessment of the significance of violations in the EP SDP. With regard to emergency plans, the proposed and final 10 CFR 50.54(q)(2) is a license condition that extends the applicability of the requirements of Appendix E and, for power reactors, the planning standards of 10 CFR 50.47(b) from the licensing phase to the operational phase. With few exceptions, citations for emergency plan non-compliances have referenced the corresponding requirement in the former 10 CFR 50.54(q) followed by the citation to the particular non-compliance in Appendix E or, for nuclear power reactor licensees, in the planning standards of 10 CFR 50.47(b). The applicability of the definition of "emergency planning functions" is explicitly limited to 10 CFR 50.54(q). Within 10 CFR 50.54(q), the phrase "emergency planning function" is used only in the definition of a "reduction in effectiveness" (10 CFR 50.54(q)(1)(iv)), which is then used in 10 CFR 50.54(q)(3) and (4) to differentiate what changes a licensee may make without prior NRC review and those for which prior NRC review is necessary. Section 50.54(q)(2) explicitly identifies the planning standards and/or the requirements in Appendix E, but not "emergency planning functions," as the bases for compliance.

In summary, the arguments raised by the commenters do not establish a substantiated concern that would cause the NRC to reconsider the "emergency planning function" construct and

language as proposed. No change was made to the final rule or the guidance document in response to these comments.

Comment: A commenter recommended that the NRC remove the phrase “emergency planning function” for the reasons identified in the comment on “emergency planning functions” above. The commenter suggested revising this subparagraph as follows:

“(q) Emergency Plans. (1) Definitions for the purpose of this section:
(i) Change means a modification of, addition to, or removal from:

(a) A nuclear power reactor licensee’s emergency plan that affects the licensee’s capability to meet the planning standards in § 50.47(b) or the requirements in Appendix E; or

(b) A research reactor or fuel facility licensee’s emergency plan or implementing procedures that affects the licensee’s capability to meet the requirements in Appendix E.” [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenter. The NRC disagrees with the commenter’s suggested replacement of the “emergency planning function” concept for the reasons set forth in the NRC response to earlier similar comments. Accordingly, there is no need to separate the power and non-power requirements as suggested. No change was made to the final rule or the guidance document in response to this comment.

The NRC agrees with the commenter’s suggested omission of the phrase “or the resources, capabilities, and methods identified in the plan.” The NRC recognizes that the phrase inappropriately dilutes the emphasis that should be placed on the content of the emergency plan. Changes were made to the final rule and the guidance document in response to this comment.

The NRC disagrees with the commenter’s suggested deletion of the phrase “All such changes are subject to the provisions of this section except where the applicable regulations establish specific criteria for accomplishing a particular change.” The commenter provided no supporting justification for removing the phrase. No change was made to the final rule or the guidance document in response to this comment.

Comments: A commenter stated that the proposed definition of “emergency plan” in 10 CFR 50.54(q)(1)(ii) could be read expansively to include documents over which the licensees have little or no control, such as ORO plans. The commenter stated that the suggested language would focus on the emergency plan as a single, up-to-date document. The commenter also stated that the definition is confusing because it creates the impression that multiple historical plans are simultaneously in effect and suggested the following wording for 10 CFR 50.54(q)(1)(ii):

“(ii) Emergency plan means the document, prepared and maintained by the licensee, that identifies and describes:

(a) A nuclear power reactor licensee’s capability to meet the planning standards in § 50.47(b) and the requirements in Appendix E; or

(b) A research reactor or fuel facility licensee's capability to meet the requirements in Appendix E." [0102]

Another commenter stated that the "emergency plan" definition is ambiguous and that NRC should clarify it to specifically identify components that are considered as the "emergency plan," such as emergency plan implementing procedures. [0084]

NRC Response: The NRC disagrees with commenters. The proposed rule clearly stated that the definition applies to content that "identif[ies] and describe[s] the licensee's methods" (emphasis added). Also, proposed 10 CFR 50.54(q)(3) and (4) effectively limited the applicability to changes that the licensee initiates to its emergency plan. No change was made to the final rule or the guidance document in response to these comments.

The NRC disagrees with the commenter's focus on the emergency plan as a single document. The NRC is aware that licensees have, over time, removed information from the emergency plan document and placed it into sub-tiered documents. The language proposed by the NRC clarified that such sub-tiered documents need to be treated pursuant to 10 CFR 50.54(q) to the extent that they identify and describe the licensee's methods of maintaining preparedness and responding to emergencies. No change was made to the final rule or the guidance document in response to this comment.

The NRC disagrees with the commenter's suggestion that the NRC specifically identify components that are considered to be part of the emergency plan. The language of the "emergency plan" definition adequately identifies the characteristics of the documents that require treatment under 10 CFR 50.54(q)(3) without creating a prescriptive list that would require frequent updating. No change was made to the final rule or the guidance document in response to this comment.

The NRC disagrees with the commenter's assertion that the proposed rule language required multiple plans to be in effect simultaneously. The licensing basis of the licensee's EP program is the emergency plan as originally approved by the NRC and all subsequent changes made by the licensee with, and without, prior NRC review and approval under 10 CFR 50.54(q). As explained in the proposed DG-1237 and the final RG 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Plants", the NRC expects the licensee to consider its licensing basis in making the determinations required by 10 CFR 50.54(q)(3). A proper evaluation is not possible without understanding the bases of the particular elements being considered for revision. No change was made to the final rule or the guidance document in response to this comment. However, editorial changes were made in the final rule and the guidance document to consistently use the phrase "plan" rather than "plans" unless the context was in the sense of emergency plans for multiple sites or plants.

The NRC agrees in part with the commenter's suggested replacement of the phrase "maintaining and performing emergency planning functions" in this subparagraph. Although the NRC has decided to retain the emergency planning function concept in the final rule, this phrase, when used in conjunction with the final 10 CFR 50.54(q)(2), could be misinterpreted as requiring compliance with emergency planning functions. This was not the NRC's intent. Changes were made to the final rule and the guidance document in response to this comment.

The NRC disagrees with the commenter's suggested separation of power reactor and non-power reactor requirements. With the retention of the "emergency planning function" phrase,

there is no need to separate the requirements as suggested. No change was made to the final rule or final guidance in response to this comment.

Comments: A commenter stated that the proposed definition of “reduction in effectiveness” in 10 CFR 50.54(q)(1)(iv) needed to be revised to reflect the suggested deletion of 10 CFR 50.54(q)(1)(iii):

“(iii) Reduction in effectiveness means a change in an emergency plan that results in a significant reduction of the licensee’s capability to meet an emergency planning standard or the requirements of Appendix E in the event of a radiological emergency.”

The commenter also suggested that the use of “significant reduction in capability” would allow the change process to be comparable with the “more than a minimal increase” used in 10 CFR 50.59. [0102]

NRC Response: The NRC disagrees with the commenter. As discussed in the NRC response to the previous comments on “emergency planning functions,” the NRC has decided for the reasons stated therein to retain the use of the phrase in the final rule and in the guidance document.

The NRC disagrees with the commenter’s suggestion that a reduction in effectiveness be defined in the context of compliance with regulations. Compliance with the applicable regulations is already one of the two criterion in 10 CFR 50.54(q)(3). However, compliance with regulations is not necessarily synonymous with not causing a “reduction in effectiveness.” No change was made to the final rule or final guidance in response to this comment.

The NRC disagrees with the commenter’s proposal to use the modifier “significant” in the context of a “reduction in effectiveness.” Once the licensee determines that the change would reduce the licensee’s capability to perform an emergency planning function by any amount, the change is to be considered a reduction in effectiveness. The proposed alternative language implies that a reduction in a licensee’s compliance with regulation may be considered acceptable if it isn’t significant. Although the significance of a non-compliance may vary under the ROP, the non-compliance is still a violation. No change was made to the final rule or the guidance document in response to this comment.

Comment: A commenter stated that the NRC’s proposed use of “maintain the effectiveness” in 10 CFR 50.54(q)(2) creates a confusing situation when taken in conjunction with the proposed change process based on a reduction in effectiveness under 10 CFR 50.54(q)(4). The commenter stated that, in order to approve a change which constitutes a reduction in effectiveness, the NRC would need to make a finding that the plans are being maintained in accordance with 10 CFR 50.54(q)(2). [0102]

NRC Response: The NRC disagrees with the commenter. The commenter confuses the intent of 10 CFR 50.54(q)(2) and 10 CFR 50.54(q)(3) and (4). Section 50.54(q) is a license condition placing a burden upon the licensee, not the NRC. The NRC need not make a finding under 10 CFR 50.54(q)(2) in approving a proposed change identified by the licensee under 10 CFR 50.54(q)(3) as a reduction in effectiveness. Instead, the NRC needs to find that the plan, as modified, continues to meet the applicable regulations and that the NRC continues to have reasonable assurance that adequate protective measures can and will be taken in the

event of a radiological emergency. The NRC's approval of the change establishes a new benchmark by which licensee compliance with 10 CFR 50.54(q)(2) will be assessed. No change was made to the final rule or the guidance document in response to this comment.

Comments: Two commenters stated that the NRC is not legally compelled to require that licensees submit changes which constitute reductions in effectiveness for NRC review and approval as a license amendment pursuant to 10 CFR 50.90. [0095, 0102]

NRC Response: The NRC disagrees with the commenters. In *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Unit 1), CLI-96-13, 44 NRC 315 (1996) (*Perry*), the Commission found that NRC staff approval of a licensee proposal to make changes to the plant's reactor vessel material specimen withdrawal schedule, once the withdrawal schedule was removed from the licensee's technical specifications, would not require a license amendment. The Commission concluded that the withdrawal schedule changes would neither alter the terms of the *Perry* license nor allow the licensee any greater operating authority. The Commission noted that the withdrawal schedule was established by a standard of the American Society for Testing and Materials (ASTM), which was incorporated by reference in Appendix H of 10 CFR Part 50. In fact, the licensee's license "specifie[d] an NRC-approved methodology - the ASTM standard - to be used in developing either an initial or a revised schedule." *Id.* at 328. The ASTM standard established "specific technical criteria" and "delineated parameters for Cleveland Electric to use in calculating an appropriate withdrawal schedule." *Id.* In these circumstances, the Commission decided that staff approval of withdrawal schedule changes that met the applicable ASTM standard did not grant the *Perry* licensee greater operating authority, so a license amendment would not be required.

In contrast to the facts of *Perry*, the NRC's regulations do not contain specific technical criteria that can be generically applied to emergency plan changes that reduce the effectiveness of the plan because each licensee's emergency plan is specific to that licensee and its facility. These licensee-unique plans result from the lack of prescriptive requirements in 10 CFR 50.47(b). Instead, these regulations give licensees the flexibility to develop plans and procedures that best fit their individual needs. Consequently, the NRC's approval of a reduction in emergency plan effectiveness is more than a ministerial, non-discretionary act. Consideration of the acceptability of a proposed reduction in emergency plan effectiveness does not involve, as in *Perry*, a simple review of the proposed plan change to determine if previously-approved objective criteria are satisfied. Rather, the determination of the acceptability of the proposed reduction in effectiveness necessitates consideration and resolution of technical and regulatory issues - none of which are the subject of objective evaluation criteria. In some instances, the evaluation of the plan change may involve the balancing of competing regulatory objectives and policies. Thus, NRC approval of a reduction in effectiveness constitutes an exercise of agency discretion. For these reasons, under the principles of *Perry*, an emergency plan change that would reduce the effectiveness of the plan would grant the licensee greater operating authority and would require a license amendment request. See also *Citizen Awareness Network, Inc. v. NRC*, 59 F.3d 284, 294 (1st Cir. 1995); *Sholly v. NRC*, 651 F.2d 780 (D.C. Cir. 1980) (*per curiam*), *vacated on other grounds*, 459 U.S. 1194 (1983); and *in re Three Mile Island Alert*, 771 F.2d 720, 729 (3rd Cir. 1985), *cert. denied*, 475 U.S. 1082 (1986). No change was made to the final rule or final guidance in response to these comments.

Comments: A commenter noted that proposed 10 CFR 50.54(q)(5) would have required the licensee to include the analysis of the change in a report to the NRC, but the NRC provided no justification for this new expectation. The commenter noted that the NRC had an opportunity to

review the analysis under the 71114.04 inspection module. The comment stated that the required submittal date for the report should be revised to read “within 30 days after the change is implemented” since a change could be made and approved but not implemented until required. [0102] Another commenter stated that the requirement to include the decrease in effectiveness analysis for each change is a new requirement that has not been justified and is overly burdensome. [0105]

NRC Response: The NRC agrees in part with the commenters. Although the former rule did not explicitly require the submitted report to include the analysis, the NRC expected the basis for the change be included in the report. The final rule codifies the NRC expectation using language that is consistent with a similar reporting requirement in 10 CFR 50.59(d)(2). The NRC notes that the inspection module 71114.04 is normally performed in the regional offices against the submitted reports as opposed to an onsite inspection. In considering this comment, the NRC decided to reduce the potential burden by requiring only a summary of the analysis because a summary is sufficient for initial NRC oversight purposes. Changes were made to the final rule and the guidance document in response to this comment.

The NRC agrees in part with the commenter’s suggested report submittal timing. The NRC decided to use the phrase “change is put into effect,” rather than “change is implemented,” because it provides a more specific point in time. The change is put into effect when the modified emergency plan is available for use in the emergency response facilities. At that point, the change can affect the licensee’s response to an emergency condition, whether or not all typical implementation activities, such as distribution of the updated emergency plan and ERO training, have been completed. Changes were made to the final rule and the guidance document in response to this comment.

Other Comments

Comment: One commenter stated that, based in part on agency practice, requiring a licensee to submit a license amendment request for a proposed change to an emergency plan that would reduce the effectiveness of the plan would not constitute a clarification of an existing regulatory position, but instead would reflect a new position on what emergency plan changes require a license amendment. [0102]

NRC Response: The NRC agrees, in part, with the commenter. The NRC agrees that the NRC’s use of the license amendment process to review a licensee’s proposed change to an emergency plan that would reduce the effectiveness of the plan could be perceived as a change in the NRC’s practice.

Although the NRC’s search has not been exhaustive, it has reviewed the examples provided by the commenter. In addition, the NRC has reviewed other cases. The vast majority of the NRC’s responses to 10 CFR 50.54(q) submittals have used text similar or identical to the following.

The NRC staff has completed its review of the proposed emergency plan changes as discussed in the enclosed safety evaluation report. The staff concludes that the proposed changes meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50 and provide reasonable assurance that.... Therefore, the proposed changes are acceptable.

The NRC letters do not state that the NRC has concluded that the licensee submittal describes a change that is a reduction in effectiveness. The NRC has also identified several examples where the licensee has withdrawn the submittal after communication with the NRC staff indicated that the change would be a reduction in effectiveness. It is apparent from discussions with involved NRC staff that many (perhaps most) of the changes in emergency plans, when evaluated by NRC staff, were determined to not be decreases in effectiveness requiring NRC approval.

As previously identified by the NRC staff and discussed in this comment, there is one example in which the NRC advised the licensee that if it requested NRC review of a proposed change that would decrease the effectiveness of the licensee's emergency plan, such a request had to be submitted under 10 CFR 50.90.² This request was later resubmitted to the NRC in modified form.³ This resubmittal was made in accordance with 10 CFR 50.54(q) and 50.4 as a decrease in effectiveness, not 10 CFR 50.90. The resubmittal makes no reference to 10 CFR 50.90. The NRC closed its review of this revised submittal by letter dated February 5, 1999, with language similar to that above. Finally, one example can reasonably be read as an approval of a decrease in effectiveness by letter.⁴ While a specific example was not identified of an emergency plan change that was approved by license amendment, this could be the result of proposals that were determined to be decreases in effectiveness having been withdrawn after communications from the NRC (as noted above) and, in addition, the NRC's search of prior actions was not exhaustive.

Given inconsistent prior NRC practice, the absence of a clear record of using the license amendment process (i.e., 10 CFR 50.90) for approving emergency plan changes involving decreases in effectiveness, and the lack of prior guidance specifically stating that the use of the license amendment process is required for approval of 10 CFR 50.54(q) submissions that involve a decrease in effectiveness, the perception offered by the commenter is understandable. No change was made to the final rule or the guidance document in response to this comment.

Comment: One commenter stated that licensees would need to modify their procedures for obtaining NRC approval of emergency plan changes by requesting a license amendment. The commenter suggested that these procedure changes constitute backfitting under 10 CFR 50.109(a)(1). [0102]

NRC Response: The NRC disagrees with the commenter. The NRC does not dispute that some licensees may have to revise their procedures to clarify the process for emergency plan changes. However, procedural changes to address NRC administrative requirements do not constitute changes to procedures to "operate" a facility within the meaning of 10 CFR 50.109(a)(1). The NRC only intended to provide backfitting protection to those aspects of licensee procedures needed to comply with the NRC's substantive technical requirements involving radiological health and safety and common defense and security.⁵ The Backfit Rule

² Thomas, K.M., U.S. Nuclear Regulatory Commission, letter to J.M. Levine, Arizona Public Service Company, October 24, 1997.

³ Levine, J.M., Arizona Public Service Company, letter to U.S. Nuclear Regulatory Commission, September 8, 1998.

⁴ Sekerak, S.P., U.S. Nuclear Regulatory Commission, letter to W.A. Eaton (Entergy Operations, Inc.), September 29, 2000 (ML003756919).

⁵ The NRC notes that some NRC-compelled changes to procedures needed to comply with the NRC's substantive technical requirements involving radiological health and safety or common defense and security, would not constitute backfitting under 10 CFR 50.109(a)(1). The most common example is an

was not intended to address changes in aspects of licensee procedures needed to comply with changes or clarifications in NRC administrative requirements such as acceptable document formats, number of copies, or – as in this case – the process by which an NRC approval is provided. Accordingly, the need to request an NRC approval as a license amendment does not represent a subject matter within the scope of “backfitting” as defined in 10 CFR 50.109(a)(1). No change was made to the final rule or the guidance document in response to this comment.

Comment: Two commenters stated that NRC approvals of changes to emergency plans constituting a reduction in effectiveness do not constitute an expansion of the licensee’s operating authority. The commenters argued that no license amendment is required to make the plan change and the modification to 10 CFR 50.54(q) is a backfit that should have been included in the NRC’s backfit analysis. [0095, 0102]

NRC Response: The NRC disagrees with the commenters. A licensee’s emergency plan is part of the licensing basis for the licensee’s facility. The plan describes the licensee’s responsibilities, activities, and actions to be undertaken to comply with the NRC’s requirements governing emergency preparedness and response. Failure to have an acceptable emergency plan, a failure to implement the plan, or an unauthorized departure from the plan during its implementation, are all subject to NRC enforcement action, including revocation of the operating license. Thus, the emergency plan is part of the licensee’s operating authority granted under its operating license because it constrains the nature and/or scope of licensed activities (i.e., operation of an NPP).

A change to the emergency plan constituting a reduction in effectiveness of that plan essentially allows the licensee to disclaim responsibility for performing⁶ activities and actions (or specific portions thereof) formerly required (or prohibited) under the superseded provisions of the emergency plan. It allows the licensee to perform, without fear of NRC regulatory response (e.g., an order, including an enforcement action), activities and actions formerly precluded. This is equivalent to an expansion of the licensee’s operating authority.

The NRC notes that it is not simply that the emergency plan has “changed” that leads to the conclusion that there is an expansion of operating authority. Otherwise, any change to the emergency plan, regardless of effect on licensee authority to operate, would be deemed an expansion of operating authority for which NRC approval via a license amendment is required. Rather, it is the effect of the change (i.e., allowing the licensee to operate in a manner with respect to radiological health and safety that it was not allowed to do so under the superseded provision of the emergency plan) that forms the essence of the test of “expanded” operating authority.⁷

NRC-compelled change necessitated by a new statutory provision, where the statutory provision affords the NRC little discretion in implementing the statutory mandate. See U.S. Nuclear Regulatory Commission, “Criminal Penalties: Unauthorized Introduction of Weapons,” *Federal Register*, Vol. 74, No. 197, October 14, 2009, pp. 52667-52675.

⁶ This also includes any changes in a threshold prescribed in an emergency plan for performing an activity or action.

⁷ Consistent with the former 10 CFR 50.54(q), 10 CFR 50.54(q) in the final rule requires that only those emergency plan changes that reduce the effectiveness of the plan need prior NRC approval. Those plan changes that increase the effectiveness of the plan may expand the licensee’s operating authority but would not require prior NRC approval.

Moreover, the Commission has determined that the NRC must approve reductions in effectiveness to ensure compliance with the requirements of Appendix E, and for nuclear power reactors, the planning standards of § 50.47(b) so that the proposed changes provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. This approval is more than a ministerial, non-discretionary act. The determination of the acceptability of the proposed reduction in effectiveness necessitates consideration and resolution of technical and regulatory issues. In some instances, the evaluation of the plan change may involve the balancing of competing regulatory objectives and policies. Thus, NRC approval of a reduction in effectiveness constitutes an exercise of agency discretion. For these reasons, under the NRC's legal precedents, NRC approval of an emergency plan change that would reduce the effectiveness of the plan would grant the licensee greater operating authority and would require a license amendment request.

For these reasons, the NRC does not agree that emergency plan changes reducing the effectiveness of the emergency plan do not constitute an expansion of the licensee's operating authority. No change was made to the final rule or final guidance in response to these comments.

Comment: One commenter contended that so long as a modified emergency plan meets the standards of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50, the licensee is not exceeding the operating authority granted in its license and no license amendment is required for the modification. [0102] Another commenter stated that the determination of whether or not the emergency plan's effectiveness has been reduced should be defined in terms of meeting the regulatory planning standards. [0084]

NRC Response: The NRC disagrees with the commenters. Under 10 CFR 50.54(q), a nuclear power reactor licensee may revise its emergency plan without NRC approval only if the plan, as revised by the proposed changes to the plan, continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E and does not result in a reduction in effectiveness of the plan. This latter determination is separate from the determination of whether the emergency plan, as revised by the proposed changes, still meets the requirements of 10 CFR 50.47(b) and Appendix E. The former 10 CFR 50.54(q) contained this two-part test:

The nuclear power reactor licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of Sec. 50.47(b) and the requirements of appendix E to this part.

Section 50.54(q)(3) of the final rule also contains the two-prong test:

The licensee may make changes to its emergency plan without NRC approval only if the licensee can demonstrate through analysis that the changes do not reduce the effectiveness of the plan and the plan, as changed, continues to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

If a proposed change to an emergency plan could be judged to be a reduction in effectiveness based only on whether the revised emergency plan would still meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E, then the two-part test of the decades-old former 10 CFR 50.54(q) and 10 CFR 50.54(q) under the final rule would be redundant and

unnecessary. The interpretation advocated by the commenters is inconsistent with the plain language of the regulation. Even if a proposed change meets the standards of 10 CFR 50.47(b) and the requirements of Appendix E, the proposed change still could result in a reduction in effectiveness, as explained in a prior comment response in this section, and in an expansion of the licensee's operating authority, as explained in another prior comment response in this section. No change was made to the final rule or final guidance in response to these comments.

4.5.2 Part 50, Appendix E, Section IV.B: Amended Emergency Plan Change Process

No comments addressed this section.

4.5.3 DG-1237: Draft Regulatory Guide – Amended Emergency Plan Change Process

General Comments on the Draft Regulatory Guide

Comment: One commenter noted that the NRC is prematurely requesting comments on DG-1237 given that the proposed rule language is subject to comment. [0089]

NRC Response: The NRC disagrees with the commenter. The NRC has adopted the policy that, whenever possible, guidance documents that support a proposed rulemaking should be available for public comment at the time that the proposed rule is published for public comment, as was done in the current proceeding (see SRM-SECY-07-0134, "Evaluation of the Overall Effectiveness of the Rulemaking Process Improvement Implementation Plan," dated October 25, 2007, ADAMS Accession No. ML072980427). Stakeholders have explained to the NRC that they cannot fully evaluate a proposed rule if the supporting guidance that the NRC will use to evaluate licensee compliance with the rule is not available for review. No change was made to the guidance document in response to this comment.

Comment: Two commenters argued that an additional comment period is necessary to evaluate the draft Regulatory Guide against the finalized rule language. [0089, 0102]

NRC Response: The NRC disagrees with the commenters. As noted in the responses to comments on 10 CFR 50.54(q) of the proposed rule, the changes being incorporated into the final guide do not constitute a substantive revision from the draft guide. Accordingly, no additional review period is warranted. Further, the NRC process provides for only one comment period during the development of a regulatory guide. No change was made to the guidance document in response to this comment.

Comment: A commenter stated that the NRC's use of examples throughout the document is problematic. The commenter suggested that the examples convey a standard of acceptance for making changes that actually varies from one licensee to another. [0089]

NRC Response: The NRC agrees with the commenter. The NRC intended to use the examples to convey a standard of acceptance for making changes that varies from one licensee to another. Emergency preparedness is inherently local, and the adage "one size doesn't fit all" applies especially to EP. The apparent standard of acceptance will be appropriately different

from one licensee to another because of plant-specific, site-specific, and EPZ-specific considerations that establish planning or response constraints that need to be addressed. For example, a plant in a rural area may need a dedicated onsite fire department if the response time for a public department to arrive would be protracted. Sections C.1.6, C.4.a, and C.5.2.2 of the draft and final Regulatory Guide address the need to consider plant-specific, site-specific, and EPZ-specific considerations in performing 10 CFR 50.54(q) analyses. No change was made to the guidance document in response to this comment.

Comment: Two commenters recommended that the NRC move the examples to an industry guidance document equivalent to NEI 96-07, Revision 1, which provides guidance on the implementation of the 10 CFR 50.59 rule, or to a resource manual. [0089, 0102]

NRC Response: The NRC agrees with the commenters that the examples could be relocated to an industry guidance document. Any stakeholder is free to submit an alternative approach to a published regulatory guide for NRC consideration. This activity would need to be initiated by the industry. In the absence of such an approved alternative approach, the NRC is proceeding with issuance of the final guidance document. No change was made to the guidance document in response to this comment.

Comments: Two commenters suggested that the 10 CFR 50.54(q) evaluation should be based on the planning standards set forth in 10 CFR 50.47(b) and not “emergency planning functions” introduced in DG-1237 and proposed rule language, or discussed in NRC Inspection Manual Chapter 0609, Appendix B (Emergency Preparedness Significance Determination Process). [0089, 0102] With regard to Section B. of the draft Regulatory Guide, a commenter suggested that the introduction of emergency planning functions creates an unnecessary complication of the rule intent. [0102] Another commenter agreed that the NRC should revise all references to “emergency planning functions” to “emergency planning standards.” [0089] This commenter asked whether, if the NRC retains the “emergency planning function” concept, the basis for violations cited by the NRC will be the emergency planning function or the emergency planning standard. [0089] With regard to Section C., a commenter suggested that the use of emergency planning functions as evaluation criteria during 10 CFR 50.54(q) evaluations is inappropriate. The commenter urged that evaluations of proposed changes to emergency plans should be evaluated against the current emergency planning standards to determine compliance. [0102]

NRC Response: The NRC disagrees with the commenters. As discussed in the NRC responses to similar comments on use of “emergency planning functions” in the proposed rule, the NRC decided for the reasons stated therein to retain the use of the phrase in the final rule and in the final guide. Further, as explained in a prior comment response, 10 CFR 50.54(q)(2) explicitly identifies the planning standards of 10 CFR 50.47(b) and/or the requirements in Appendix E, but not emergency planning functions, as the bases for compliance. In addition, the 10 CFR 50.54(q) change process establishes a dual criteria test to establish whether the licensee has the authority to make a change without prior NRC approval. As discussed in previous NRC comment responses, even if the proposed change resulted in the licensee’s compliance with the regulations, the proposed change still could result in a reduction in effectiveness. No change was made to the guidance document in response to these comments.

Comment: A commenter also recommended that the NRC clarify the evaluation of reduction in effectiveness to address the issue of “significance.” [0102]

NRC Response: The NRC disagrees with the commenter. A similar comment was made in the context of the proposed 10 CFR 50.54(q). As discussed in the NRC response to that comment, the NRC decided for the reasons stated therein not to revise the definition of “reduction in effectiveness” in the final rule or in the final guide. No change was made to the guidance document in response to this comment.

Comment: One commenter recommended that the NRC provide clear guidance in the draft RG and the inspection guidance for inspectors regarding the retroactive application of the new emergency plan change standard. [0089]

NRC Response: The NRC agrees with the commenter. The final rule and the final guide will not be applied retroactively to changes made under the requirements of former 10 CFR 50.54(q). The NRC has revised Section D of the final guide to emphasize this protocol. Changes were made to the guidance document in response to this comment. Conforming changes will be made to the inspection procedures in a future revision.

Comment: One commenter stated that the proposed rule and the associated implementation guidance provided in DG-1237 restrict licensee authority. The commenter stated that the guidance indicates that prior approval is needed for changes to actions that implement the planning standards. In particular, licensees would need NRC review and approval of changes in operation of a volunteer fire department which might affect effectiveness. The commenter suggested that NRC establish specific criteria and standards to require prior NRC approval and any other provision should rest solely within the licensee’s purview. [0135]

NRC Response: The NRC agrees in part with the commenter. Section 50.54(q) of the Commission’s regulations authorizes the licensee to make changes to its emergency plan without prior NRC approval if the change (1) complies with the planning standards of 10 CFR 50.47(b) and the requirements of Appendix E to Part 50, and (2) the change does not reduce the effectiveness of the plan. The proposed and final rule do not in any way restrict the licensee’s authority that has always existed under 10 CFR 50.54(q). However, the proposed guidance addressing the particular example of a volunteer fire department was unclear. In response to similar comments, the NRC revised or deleted the examples considered to be ambiguous. The NRC notes that it is important to recognize that 10 CFR 50.54(q), as amended by the final rule, has two major requirements: 10 CFR 50.54(q)(2), which requires a licensee to follow and maintain the effectiveness of an emergency plan, and 10 CFR 50.54(q)(3) and (4), which establishes a change process. If a volunteer fire department relied upon in the plan ceases operation, the licensee must take action to restore the lost capability that was relied upon in the plan. If in doing so, the licensee has cause to revise its plan, then the change is subject to 10 CFR 50.54(q)(3) and (4). If the response time of the replacement fire department is longer than that for the original fire department, then there may be a reduction in effectiveness. The final regulatory guide was revised to make this clarification.

Recommended Changes to Draft Regulatory Guide

Comments: Two commenters recommended that the NRC remove the reference to 10 CFR 50.90 being the vehicle for applying for emergency plan changes that result in a reduction in effectiveness from Section B., page 4, third bullet. [0102, 0110] One of the commenters suggested that the 10 CFR 50.4 process to obtain NRC approval has been effective. [0110]

NRC Response: The NRC disagrees with the commenters. Similar comments were made in the context of the proposed rule. As discussed in the NRC response to the comment on use of the license amendment process in the proposed rule, the NRC decided for the reasons stated therein to retain the requirement in the final rule and in the final guide. No change was made to the guidance document in response to these comments.

Comment: A commenter asked what the acceptable threshold is for a plan change. The commenter argued that the FRN and Section C.1.1 present the threshold as the effective preservation of compliance with the planning standards, but examples in the emergency planning functions appear to provide the threshold at a level of “anything less than the standard currently contained in the emergency plan.” [0089]

NRC Response: The NRC disagrees with the commenter. The licensee is free to relax requirements in its emergency plan without prior NRC review and approval, if, under 10 CFR 50.54(q)(3), the licensee can show that, first, the emergency plan, as modified, continues to comply with regulations and, second, the change does not reduce the effectiveness of the emergency plan. As explained in Section C.4.a of the guide, the examples identify changes that could require prior NRC approval. The guidance also states that the licensee should use the examples only to inform their decisions involving various changes. The examples are not intended to be all-inclusive or exclusive, may not be applicable to all sites, and are not to be used as thresholds or standards. Instead, the licensee must evaluate the change under consideration against the two criteria test of 10 CFR 50.54(q)(3) within the context of the licensing basis for the plant’s emergency plan. No change was made to the guidance document in response to this comment.

Comments: A commenter stated that the discussion in Section C.1.1.c regarding “minimal impact” further confuses the issue. The commenter asked the NRC to clarify the evaluation standards. [0089]

NRC Response: The NRC disagrees with the commenter. The phrase “minimal impact” appears in Section C.1.1.c. of the draft Regulatory Guide in a general, narrative context intended only to introduce the term “reduction in effectiveness,” which is defined later in Section C.3.7. As specified in the first sentence of this regulatory position, the 10 CFR 50.54(q) change process does not establish whether a proposed change would impact the reasonable assurance determination. The licensee is required only to assess whether or not the change constitutes a reduction in effectiveness. The definition of “reduction in effectiveness” is set forth in 10 CFR 50.54(q)(iv) of the final rule, and expanded upon in Section C.3.7 of the final guide, neither of which require the licensee to assess the magnitude of the impact of the change on the reasonable assurance determination. No change was made to the guidance document in response to these comments.

Comment: A commenter stated that Section C.1.1 conveys the concept that preservation of reasonable assurance is the minimum performance standard for any implemented change process. Therefore, the NRC must clearly establish the “reasonable assurance” delimiter to be used by the licensee to determine when prior NRC review and approval is required. [0102]

NRC Response: The NRC agrees in part with the commenter. The commenter is correct in stating that preservation of reasonable assurance is the minimum performance standard. However, the licensee does not assess whether the change affects a reasonable assurance determination; this is the NRC’s burden. The first sentence in Section C.1.1.c provides that the

10 CFR 50.54(q) change process does not establish whether a proposed change would impact the NRC's reasonable assurance determination. See also 10 CFR 50.54(q)(3) of the final rule. As stated in the guide, the 10 CFR 50.54(q) change process establishes only whether the licensee has the authority to implement the proposed change without prior NRC approval. The determination of whether there continues to be reasonable assurance after the emergency plan is modified rests with the NRC. Accordingly, the NRC need not establish a reasonable assurance delimiter as suggested. No change was made to the guidance document in response to this comment.

Comment: A commenter requested that NRC revise the second sentence of Section C.1.1.c to replace the word "exclude" with "identify." [0102]

NRC Response: The NRC disagrees with the commenter. In the context of the sentence, "exclude" is the correct word. The intent of the change process is to identify those changes that are reductions in effectiveness for which NRC approval is necessary. As such, the change process excludes from the requirement to seek NRC approval those changes that are not reductions in effectiveness. No change was made to the guidance document in response to this comment.

Comment: A commenter recommended that NRC delete the phrase "through appropriate analysis" from the third sentence of Section C.1.1.c because it adds ambiguity to the discussion. [0102]

NRC Response: The NRC agrees with the commenter. The phrase "through appropriate analysis" is unnecessary in this context because the guidance on performing a thorough analysis is provided elsewhere in the guide (e.g., Section C.5.2.5). Changes were made to the guidance document in response to this comment.

Comment: A commenter stated that the examples in Section C.1.1.b should be deleted (e.g. "For example, changes that ..."). [0102]

NRC Response: The NRC disagrees with the commenter. The examples help to explain the concepts discussed in Section C.1.1.b. No change was made to the guidance document in response to this comment.

Comment: A commenter suggested that the purpose of Section C.1.2 needs clarification. In particular, the commenter recommended that Section C.1.2 should convey the guiding principles and define the characteristics and criteria for the application of conservatism and not just offer a specific application. [0102]

NRC Response: The NRC agrees in part with the commenter. The detailed discussion in the example in Section C.1.2 detracts from the clarity of this section. Nonetheless, the specific application provided is an example that helps to explain the concepts addressed in the section. The NRC has condensed the example in the final guide. Changes were made to the guidance document in response to this comment.

Comment: A commenter asked for the NRC to clarify whether "ERO actively performing its function" in Section C.1.4.a aligns with the regulatory requirements. [0102]

NRC Response: The NRC disagrees with the commenter. Section 50.47(b)(2) calls for timely augmentation of response capabilities. The fundamental objective for augmentation is relieving the control room personnel of emergency response functions and allowing them to focus on plant control manipulation. Augmentation is not complete until the response functions assigned to the augmented staff in the individual emergency response facilities are being performed. If the control room is still performing the functions of the TSC and the EOF, then augmentation hasn't fully occurred. The NRC's position derives from the stated function of the TSC and EOF in regulatory guidance (NUREG-0696, NUREG-0737) and Appendix E to Part 50. In considering this comment, the NRC decided to revise the subject example in the interest of clarity. Changes were made to the guidance document in response to this comment.

Comment: A commenter suggested that the language of Section C.1.7 of the draft regulatory guide (i.e., "notify all offsite organizations within 15 minutes") incorrectly interprets Appendix E, Section IV.D.3. The commenter claimed that the current language of Appendix E, Section IV.D.3, "does not mean to notify ALL agencies and complete the notifications within 15 minutes." The commenter recommended that the NRC correct the statement to reflect the intent of the current regulation. [0102]

NRC Response: The NRC disagrees in part with the commenter. The subject example properly reflects current regulatory intent. Appendix E, Section IV.D.3 requires the licensee to have the capability to notify responsible State and local government agencies within 15 minutes after declaring an emergency. Although the commenter is correct in stating that the language in Appendix E does not explicitly state "all" State and local government agencies, it does provide that the licensee have the capability to notify "responsible agencies" (note the plural form of "agency"). A failure to notify any single responsible agency could result in the public in the areas under the cognizance of that agency not being adequately protected. This is obviously not the regulatory intent.

NUREG-0654, Section II.E.3 identifies the information that is expected to be provided in initial notifications. Although Section IV.D.3 of Appendix E does not explicitly state that the licensee have the capability to "complete" the notification within 15 minutes, it does require the licensee to have the capability of notifying responsible State and local agencies, that is, providing the information with which to initiate and carry out their emergency response functions, including protective measures. Section 50.47(b)(4) provides, in part, that "State and local response plans call for reliance on information provided by the facility licensees for determinations of minimum offsite response measures." The fundamental objective of the notification hasn't been achieved until the requisite information has been provided to the responsible State and local agencies.

Although the statement quoted in the comment is consistent with regulatory intent, the NRC has decided to re-phrase the statement in a manner that identifies the regulatory intent as an NRC expectation rather than a regulatory requirement. Changes were made to the guidance document in response to this comment.

Comment: A commenter asked what the first sentence in the first paragraph of Section C.2 means: "submitted to the NRC for review and approval under 50.4." [0102] Another commenter stated that Section 2 uses the word "should" rather than "shall." The commenter recommended that NRC make this change or clarify if the intent is not all changes to the emergency plan listed in Section 2 need NRC prior review. [0110]

NRC Response: The NRC agrees with the commenters. The NRC's intent was to suggest to licensees considering a change involving one or more of the items in Section C.2.a-f that they interface with the NRC and obtain NRC input before finalizing the change evaluation that determines that the change is NOT a reduction in effectiveness. The section does not apply to changes that the licensee has determined are reductions in effectiveness. Based on these comments and the questions raised at the various public meetings on this rulemaking, the NRC recognizes that the proposed language is not fully consistent with that intent. Changes were made to the guidance document in response to these comments.

Comments: A commenter recommended that the NRC use the reference "10 CFR 26.4(a)(1)-(5) and (c)" in Section C.2.b. to include other NUREG-0654, Table B-1, functions such as fire brigade and security. [0110] With regard to Section C.2.b, two commenters recommended that the NRC replace "(see 10 CFR 26.4(a)(2) and (c))" with a reference to 10 CFR Part 26. [0089, 0102]

NRC Response: The NRC agrees with the commenters that the positions need to be included and that the less specific reference is appropriate because it inherently incorporates 10 CFR 26.4(a)(1)-(5) and (c). Changes were made to the guidance document in response to these comments.

Comments: A commenter stated that Section C.2.f imposes additional requirements on submittals to the NRC. Based upon this, updates to the ETEs as a result of the availability of new census data (every 10 years) will require all licensee to submit the updated ETE for approval from the NRC prior to its being available for use. [0102] With regard to Section C.2.f, two commenters recommended that the NRC delete the expectation for requesting review and approval under 10 CFR 50.4 for updated ETEs. The commenters suggested that separate regulatory guidance is being promulgated for this activity, so there is no value added to the process by submitting this for "review and approval." [0102, 0110]

NRC Response: The NRC agrees with the commenters. The submittal requirements for ETE updates are provided in 10 CFR 50.47(b)(10) and Appendix E to Part 50, as amended by the EP final rule. Changes were made to the guidance document in response to these comments.

Comment: A commenter recommended that the NRC add a new item to Section C.2 on page 9: "Revision to the Emergency Action Level scheme as specified in 10 CFR Part 50, Appendix E, Section IV.B.2." [0110]

NRC Response: The NRC disagrees with the commenter. The regulatory requirement for EAL scheme changes is already addressed in Part 50, Appendix E, Section IV.B. No change was made to the guidance document in response to this comment.

Comment: A commenter suggested that the NRC relocate paragraph C.3.3.b entirely to Section C.5.1 or C.5.2 of the Regulatory Guide. [0102]

NRC Response: The NRC agrees in part with the commenter. The information in Section C.3.3.b, a definition section, would be useful in Section C.5.2, the evaluation section, because it could facilitate the evaluation and because the information in Section C.3.3.b is fundamental to the discussion in Section C.3.3. Section C.3.3.b will be retained in the final guide. Changes were made to the guidance document in response to this comment.

Comment: A commenter identified a conflict between the definition of regulatory requirement in Section C.3.4 and a similar definition in Inspection Manual Chapter 0609, Appendix B. [0102]

NRC Response: The NRC agrees with the commenter. The definitions differ and they should be made consistent. The NRC has revised the definition in Section C.3.4 and will revise the definition in IMC 0609, Appendix B upon its next revision. Changes were made to the guidance document in response to this comment.

Comment: A commenter stated that NRC should relocate paragraph C.3.4.b entirely to Section C.5.1 or C.5.2 of the Regulatory Guide. [0102]

NRC Response: The NRC agrees in part with the commenter. The NRC has revised the final guide to address the intent of Section C.3.4.b in Section C.5.2.2 as suggested, but will retain Section C.3.4.b since the information is fundamental to the discussion in Section C.3.4 because it applies to “commitments made in the emergency plans.” Changes were made to the guidance document in response to this comment.

Comment: A commenter asked if the NRC can clarify the applicability of 44 CFR 350.14 versus 10 CFR 50.54(q) as they apply to emergency notification ANS design reports. [0102]

NRC Response: The NRC disagrees that additional clarification is necessary. As stated in Section C.1.6.f.c, footnote 3 on Page 11, and Sections C.4.5.c, and 5.1.4.d of the guide, if the licensee has assumed responsibility for the installation and maintenance of the ANS on behalf of the State or local governments, and the licensee makes changes to its commitments documented in the approved ANS design report, then the licensee should evaluate those changes against the criteria of 44 CFR 350.14, “Amendments to State Plans.” If the licensee deems it warranted, the proposed changes are to be submitted to FEMA via the cognizant State official for review and approval as provided in 44 CFR 350.14. No review under the 10 CFR 50.54(q) change process is necessary unless the licensee makes a change to its onsite emergency plan. No change was made to the guidance document in response to this comment.

Comment: Two commenters suggested that the definition of “Emergency Plans” in Section C.3.5 is structurally flawed. In particular, the commenters stated that there can only be one emergency plan, so the NRC should delete the second sentence. [0089, 0102]

NRC Response: The NRC disagrees with the commenters. Similar comments were made in the context of the proposed rule. As discussed in the NRC response to the comment on the definition of “emergency plan” in the proposed rule, the NRC has decided for the reasons stated therein to retain the requirement in the final rule and in the final guide. No change was made to the guidance document in response to this comment.

Comment: A commenter stated that “emergency plan,” and “emergency plans” are used interchangeably throughout the document. [0089]

NRC Response: The NRC agrees with the commenter regarding the inconsistent use of singular and plural and performed a global search to use “emergency plan” except where the context was to emergency plans of multiple sites or licensees. Changes were made to the guidance document in response to this comment.

Comment: Two commenters also identified inconsistencies in the guidance with respect to the application of the word “change.” Part of the time, the text presents a “change” as being the effect the activity has on the physical emergency plan document, while frequently the text provides examples of changes based on the attribute of the activity and not its effect on the emergency plan. The commenters first identified this issue in Sections C.3.5.a and b and C.3.6, but requested that the NRC check elsewhere in the draft Regulatory Guide as well. [0089, 0102]

NRC Response: The NRC agrees with the commenters that there are inconsistencies. The NRC intended to focus the licensee’s attention on the content of the emergency plan, but as identified by the commenter, this focus was not always apparent. Changes were made to the guidance document in response to this comment.

Comment: A commenter recommended the NRC delete paragraph C.3.5.d in its entirety. The commenter stated that the requirement or expectation to aggregate activities and evaluate incremental changes is unworkable. The commenter also stated that 10 CFR 50.47 is the required acceptance standard. The commenter stated that if Section C.3.5.d remains in the final guide, that incremental conservatisms added at licensee discretion must be credited to the licensee and kept available for reduction without being considered a reduction in effectiveness. [0102]

NRC Response: The NRC disagrees with the commenter. The commenter did not substantiate the assertion that the requirement to consider the original NRC-approved plan and changes made by the licensee without prior NRC approval is unworkable. The NRC expects the licensee to consider its EP licensing basis in performing 10 CFR 50.54(q) evaluations. Unless the licensee understands the basis for the current emergency plan, it cannot adequately evaluate whether a reduction in effectiveness is involved. The NRC disagrees with the commenter’s implication that there is margin between the content of its plan and the planning standards (and Appendix E) and that the licensee somehow “owns” that margin. The NRC also disagrees with the implication that reducing this margin does not cause a reduction in effectiveness. The change process in 10 CFR 50.54(q)(3) has two criteria. First, the emergency plan as modified will continue to comply with regulations, and second, that the changes will not reduce the effectiveness of the plan. The fact that there may be apparent margin between the commitments in the plan and the associated regulatory requirements only addresses the first criterion—compliance with regulations. It does not address the second criterion—reduction in effectiveness. The licensee’s burden is to demonstrate that the change does not decrease the effectiveness of the plan. The existence of margin does not necessarily equate to no reduction in effectiveness. The NRC added a new Section C.1.8 to further clarify its position. Changes were made to the guidance document in response to this comment.

Comments: Two commenters recommended that Section C.3.6.b should be relocated to the implementation guidance in Section C.5.1 and broken into separate discussions regarding the treatment of recognized degraded/nonconforming conditions versus planned activities such as maintenance. The commenters argued that the current paragraph mixes multiple concepts. [0089, 0102] With regard to Section C.3.6.d, a commenter suggested that the NRC relocate this section to Section C.5 on implementation guidance. [0102]

NRC Response: The NRC agrees in part with the commenters. The NRC has replaced the proposed Sections C.3.6.b and C.3.6.d as part of its response to earlier comments regarding the dual treatment of the term “changes” in the rule and the guide. Changes were made to the guidance document in response to these comments.

Comments: A commenter suggested that the NRC revise the definitions for Resources, Capabilities, and Methods in Section C.3.6.c to make them stand-alone (i.e., their own C.3.6.x sections) given their critical contribution to the change screening process. Regarding Section C.3.6.d, the commenter suggested that the NRC relocate this section to Section C.5 on implementation guidance. [0102]

NRC Response: The NRC disagrees with the commenter. Although the definitions are used in Section C.3.6.b as revised in the final guide, they no longer make a critical contribution to the change screening process because the final rule language no longer includes the three terms. Standalone treatment is not necessary. No change was made to the guidance document in response to this comment.

Comment: A commenter stated that, in Section C.3.7.a, the definition of “capabilities” should be deleted and should instead reference the prior definition, and the definition of “emergency” should be a stand-alone definition. [0102]

NRC Response: The NRC disagrees with the commenter. As discussed in the response to an earlier comment, the NRC decided that a standalone treatment of the definitions for “Resources,” “Capabilities,” and “Methods, was not necessary. As such, the definition of “capabilities” must be retained in Section C.3.7.a because the term “Capabilities” is used in Section C.3.7.a discussion. The commenter provided no justification for the suggestion regarding a standalone definition of “emergency.” No change was made to the guidance document in response to this comment.

Comment: A commenter recommended that the NRC divide Section C.4 of the draft Regulatory Guide into two categories: one that applies to operating power reactors and one that applies to non-power reactors. [0102]

NRC Response: The NRC disagrees with the commenter. The title of the proposed and final guide is “Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors.” Because the guide applies to only nuclear power reactors, the suggestion to divide Section C.4 into two categories, one for power reactors and one for non-power reactors, is unnecessary. No change was made to the guidance document in response to this comment.

Comment: A commenter suggested that for operating power reactors, Section C.4 should contain discussions on significant reduction in effectiveness to meet a planning standard and non-power reactors should have a section on emergency planning functions. [0102]

NRC Response: The NRC disagrees with the commenter. A similar comment was made in the context of the proposed rule. As discussed in the NRC response to that comment, the NRC decided for the reasons stated therein not to revise the definition of “reduction in effectiveness” in the final rule or in the final guide to incorporate significance. No change was made to the guidance document in response to this comment.

Comment: With regard to Section C.4.14.b(1), a commenter stated that the first sentence is problematic because when taken literally, “the effect of reducing the challenge” prohibits drill variation and undermines the basis for the rulemaking. The commenter recommended that this emergency planning function should simply indicate that a variety of challenge levels are required. [0089]

NRC Response: The NRC agrees in part with the commenter. The proposed sentence contained an editorial error that may have made the sentence unclear. The corresponding sentence in the final guide was revised to read: “A change in the conduct of drills and exercises that would have the effect of reducing the challenge to ERO personnel such that they are not provided an opportunity to practice key functional areas and major tasks, including use of plans, procedures, and equipment associated with those functions and tasks.” However, as the proposed text that started with “such that” indicated, to the extent that the licensee’s program allows key functional areas and major tasks to be exercised over the planning cycle, as allowed by regulation, variation in drills and exercises are not circumscribed by this sentence. Changes were made to the guidance document in response to this comment.

Comment: A commenter recommended that the NRC remove the word “Effectiveness” from the title of Section C.5.0, because this section’s purpose is to convey the overall review process. [0102]

NRC Response: The NRC agrees with the commenter. Section C.5.0 does address aspects of the change process beyond determination of whether a plan change reduces the effectiveness of the plan. Accordingly, the commenter’s suggestion is appropriate. Changes were made to the final guidance in response to this comment.

Comment: A commenter requested that the NRC provide more clarity in Section C.5.1 of the draft Regulatory Guide on licensee commitment above planning standard(s) to address the ability to reduce capability without significantly reducing effectiveness of the emergency plan. [0102]

NRC Response: The NRC disagrees with the commenter. The guide, taken as a whole, provides sufficient guidance for licensees to perform an adequate analysis of a proposed change to an emergency plan.

The NRC disagrees that consideration of licensee commitment above planning standards (the so-called “margin”) is properly involved in determining whether a change constitutes a reduction in effectiveness. The change process in 10 CFR 50.54(q)(3) has two criteria. First, the emergency plan as modified will continue to comply with regulations, and second, that the changes will not reduce the effectiveness of the plan. The fact that there may be apparent margin between the commitments in the plan and the associated regulatory requirements only addresses the first criterion—compliance with regulations. It does not address the second criterion—reduction in effectiveness. The licensee’s burden is to demonstrate that the change does not decrease the effectiveness of the plan. The existence of margin does not necessarily satisfy this burden. The NRC added a new Section C.1.8 to the final guide to further clarify its position. Changes were made to the guidance document in response to this comment.

Comment: A commenter recommended that the NRC remove the words “to the emergency plans” from the first sentence of Section C.5.1 because the focus is on the “change” activity and not just the plan. [0102]

NRC Response: The NRC disagrees with the commenter. As stated in the response to an earlier comment, the NRC acknowledged some inconsistency regarding the proper focus of the change process. The NRC performed a review on the entire document and corrected inconsistent references to ensure the proper focus. The use of the phrase “emergency plan” is

necessary in the first sentence of Section C.5.1 to ensure that all licensee documents meeting the 10 CFR 50.54(q)(1)(ii) definition of “emergency plan” are considered. No change was made to the guidance document in response to this comment. In response to an earlier editorial comment, the NRC did change all references to “plans” to read “plan” unless the reference was to plans of multiple sites.

Comment: A commenter disagreed with the second sentence in Section C.5.2.2 and the concept of multiple simultaneous “plans” being in effect at the same time. The commenter recommended that the NRC delete the word “original.” [0102]

NRC Response: The NRC disagrees with the commenters. The final Section C.5.2.2 is consistent with the final rule. As discussed in the NRC responses to similar comments on the definition of “emergency plan” in the proposed rule, licensees will not have multiple simultaneous emergency plans in effect at the same time. For the reasons stated in those comment responses, the NRC has decided to retain the definition in the final rule and in the final guide. No change was made to the guidance document in response to this comment.

Comment: A commenter recommended that the NRC replace the word “change” with “reduction in effectiveness” in the last sentence of Section 5.2.4. [0102]

NRC Response: The NRC agrees with the commenter. The NRC’s intent with Section C.5.2.4 was to determine whether or not a reduction in effectiveness is involved. The last sentence is inconsistent with this intent, and has been omitted. Changes were made to the guidance document in response to this comment.

Comment: A commenter stated that Section 5.2.6 is problematic. The commenter suggested that effective review criteria and good guidance should negate the necessity for addressing cases where the “licensee is unsure” of the outcome of the 10 CFR 50.54(q) review. [0102]

NRC Response: The NRC agrees in part and disagrees in part with the commenter. Effective review criteria and good guidance should negate the need for consultation with the NRC. The NRC has provided improved guidance with the issuance of the final guide. However, the NRC is also aware that these determinations are necessarily subjective and that there will be unanticipated change situations that fall outside of the guidance. The NRC included Section 5.2.6 as a suggestion to assist licensees with these situations. No change was made to the final rule or the guidance document in response to this comment.

Comment: A commenter suggested that the draft Regulatory Guide needs to reference 10 CFR 51.22 in Section C.5.3. [0102]

NRC Response: The NRC disagrees with the commenter. The final guide provides guidance on making emergency plan changes; it does not provide guidance on how to submit a license amendment. Also, 10 CFR 51.22 addresses categorical exclusions for the preparation of environmental assessments or environmental impact statements. Since there are currently no categorical exclusions for most if not all emergency plan changes, the reference is unneeded. No change was made to the guidance document in response to this comment.

Comment: A commenter asked if the NRC evaluated the attributes of a license amendment request submitted under 10 CFR 50.90 for their appropriateness to an EP amendment requesting a reduction in effectiveness. For example, the commenter identified the No

Significant Hazards Consideration (NSHC), which asks a number of questions that the commenter suggested are not pertinent to EP. [0102]

NRC Response: The NRC disagrees with the commenter. The requirements for a license amendment request for a change to an emergency plan are no different than the requirements for any other license amendment request under 10 CFR 50.90 and 50.91. The NRC is aware of the three determinations of 10 CFR 50.92(c) related to an NSHC. Although it may be unlikely that an emergency plan change would (1) cause an increase in the probability or consequences of an accident, (2) create a new or different accident, or (3) involve a significant reduction in a margin of safety, this does not change the NRC's statutory obligations under the Atomic Energy Act and the National Environmental Policy Act. Many non-EP license amendments do not result in a significant hazards concern. No change was made to the guidance document in response to this comment.

Comment: A commenter recommended that the NRC change the word "made" in the first sentence of Section C.5.4 to "implemented." [0102]

NRC Response: The NRC agrees in part with the commenter. As discussed in the NRC responses to a similar comment on the proposed rule, the NRC has decided for the reasons stated therein to change the word "made" in the first sentence of Section C.5.4 to read "put into effect" in the final rule and in the final guide. Changes were made to the guidance document in response to this comment.

Comment: A commenter stated that the last sentence of Section C.5.4 eliminates the use of a screening tool to show that a proposed change does not impact any of the 16 planning standards and, by inference, would require a statement be made for each planning standard indicating why each proposed change does not impact that planning standard item. The commenter suggested that the NRC revise this sentence so that licensees provide documentation similar to what is required under 10 CFR 50.59(d)(2). [0102]

NRC Response: The NRC agrees in part with the commenter. In considering this comment, the NRC recognized that the structure of the first paragraph of Section C.5.4 may lead to confusion as it interspersed requirements for retaining a record and making reports. The NRC expects that all 10 CFR 50.54(q) evaluations will be rigorously performed and well documented. Some screening steps (such as those discussed in Section C.5.1) could be dispositioned by a simple yes or no, but other determinations, such as the applicability of a particular planning standard, should include documentation of the basis of those determinations. A check mark in and of itself cannot explain why the planning standard was considered not to be affected. What did the analyst consider in coming to that conclusion? What was the basis of the conclusion? The NRC expects the evaluation to provide a clear record of why the change is not a reduction in effectiveness. However, the NRC recognizes that the provision in Section C.5.4 may be overly restrictive in certain cases. Changes were made to the guidance document in response to this comment.

Comment: A commenter urged that the NRC needs to resolve the ambiguity of the last paragraph in Section 5.4 and the NRC's option "to review all emergency plan changes that have been made." Specifically, the commenter stated that if the NRC wants a permanent record of the changes, then it should be the stated position. [0102]

NRC Response: The NRC agrees in part with the commenter. In considering this comment, the NRC recognizes the need to clarify the statement in question. The current language implies that the NRC has a right to inspect the 10 CFR 50.54(q) change evaluation for the duration of the license. Once the licensee has disposed of change evaluations more than three years old, they are no longer inspectable. Nonetheless, the NRC has the authority and the responsibility to inspect the emergency plan for the duration of the facility license. If the inspector identifies a questionable plan provision that was not implemented as approved by the NRC, the inspector will ask for a justification for the change, generally starting with the 10 CFR 50.54(q) change evaluation. If the change evaluation isn't available, the licensee will be asked to provide a justification for the change. The fact that the 10 CFR 50.54(q) analysis was greater than three years old and had been disposed of, does not excuse the licensee from needing to justify the change. Changes were made to the guidance document in response to this comment.

Comment: A commenter suggested that the records retention guidance in Section 5.4 is inconsistent with the finite retention period prescribed by regulation (current and proposed). The commenter suggested that NRC delete the infinite records retention guidance in DG-1237, and instead describe NRC's role during the 3-year records retention period. [0135]

NRC Response: The NRC agrees in part with the commenter. The subject text in the proposed guide was a suggestion and remains as such in the final regulatory guide. As suggested by the commenter, the final guide was revised to clarify the NRC's role by noting that a lack of change documentation (because evaluations greater than three years old were destroyed) does not absolve the licensee from having to justify any change which is subsequently questioned regarding its impact on the effectiveness of the licensee's emergency plan. As such, it may be prudent to save change evaluations longer than required. Changes were made to the guidance document in response to this comment.

Comment: One commenter suggested that the NRC does not provide guidance on implementation in Section D. The commenter asked what process will be used to revise or rescind RIS 2005-02 after the new 10 CFR 50.54(q) is implemented. [0102]

NRC Response: The NRC agrees with the commenter. The proposed Section D did not provide implementation guidance. Included in the examples cited by the commenter was the lack of guidance to NRC inspectors on inspecting 10 CFR 50.54(q) evaluations performed prior to the effective date of the final rule. The NRC extensively revised Section D in the final regulatory guide to provide additional guidance on the staff's and licensee's use of this regulatory guide. Although Section D does not discuss the status of previous guidance, the section does state that the NRC would use the guidance in the regulatory guide to evaluate a licensee's new determination of a reduction in effectiveness resulting from changes to the licensee's plan made by the licensee on or after the effective date of this guide. The NRC also revised Section D to provide that the final guide will not be applied retroactively in evaluating emergency plan changes which were put into effect prior to the effective date of the guide. NRC inspectors will evaluate such changes using the prior rule language and previous guidance. Changes were made to the guidance document in response to this comment.

Comment: A commenter stated that the NRC does not reference RIS 2005-02, Rev. 0, in the References section of the draft Regulatory Guide. The commenter urged that absence of this revision or draft Revision 1 leads to conflicting guidance. [0102]

NRC Response: The NRC disagrees with the commenter. See the NRC response to previous comment. Since neither RIS was used in the preparation of the final regulatory guide, their inclusion in the “References” is unnecessary.

Comments: A commenter provided several comments on Appendix A of the draft Regulatory Guide. [0102]

- Flowchart is flawed and missing key steps. Flowchart is not consistent with proposed rule language.
- Reference to DG sections is needed in flowchart.
- Flowchart does not align with DG-1237 sections.
- Appendix A, flowchart, third block down – The block includes “complies with regulations”. It is not clear what the intent of this block is.
- Determination regarding compliance should be reflected as a decision block.
- Appendix A, flowchart, first block – Using the draft guide’s definition of change, there should first be the determination of whether the activity constitutes a change.
- Appendix A, block containing “Submit for NRC review and approval under 10 CFR 50.4” – Section C.2 describes this as a “recommended” action. Revise the Appendix to reflect this as a recommendation.

NRC Response: The NRC agrees with the commenter. The NRC deems these suggestions as desirable improvements to the final guide and the Appendix was revised accordingly. With regard to the first bulleted suggestion, the NRC revised the illustration to reflect changes made to the final guide in response to the comments on the proposed rule and proposed guide. With regard to the last bulleted suggestion, which is related to the first suggestion, the NRC decided instead to omit the action block as being unnecessary given changes made to Section C.2 in response to other comments. Changes were made to the guidance document in response to this comment.

Comment: A commenter stated that Appendix A, Section C.2, and Section C.5.1 all refer to NRC’s “review and approval” of changes not constituting reductions in effectiveness but strongly suggested for review, and these sections indicate that the proposed change is submitted under 10 CFR 50.4. The commenter asked what form and submittal format licensees would use for such submittals. The commenter also asked if these changes do not constitute reductions in effectiveness, what form of approval by the NRC would be provided. [0102]

NRC Response: The NRC agrees in part with the commenter. The NRC has revised Appendix A and Section C.5.1 for consistency with Section C.2 as revised in response to earlier comments. Changes were made to the guidance document in response to this comment.

4.5.4 Other: Amended Emergency Plan Change Process

Conforming Change to 10 CFR 51.22

Comment: Two commenters urged the NRC to make a conforming change to 10 CFR 51.22, “Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.” The commenters stated that many emergency plan changes requiring an amendment per 10 CFR 50.90 would not qualify for the categorical exclusion established in 10 CFR 51.22 because of the specificity of that language. Thus, generally administrative emergency plan changes would necessitate an environmental assessment. The commenters argued that the NRC should include a conforming change in the rule to avoid this unintended consequence. [0089, 0095]

NRC Response: The NRC disagrees with the commenters. A revision to 10 CFR 51.22 is not necessary to avoid preparation of an environmental assessment for “generally administrative plan changes.” The NRC has previously developed environmental assessments for license amendment requests that were essentially administrative changes. Also, truly administrative changes would not cause a reduction in effectiveness and would not be required to be submitted for prior NRC approval. No change was made to the final rule or the guidance document in response to this comment.

Other Comments

Comment: One commenter recommended that the NRC and licensees use quantitative analytical methods to evaluate emergency plan changes and whether they reduce the effectiveness of the plan. [0048]

NRC Response: The NRC disagrees with the commenter. Although the NRC agrees in concept that a quantitative analytical approach could be advantageous, the Commission’s EP regulations include few numerical criteria that could be evaluated in a quantitative analytical approach. Such numerical criteria could be counterproductive as the prescriptiveness of that approach would largely preclude needed flexibility to develop resources, capabilities, and methods that are reflective of plant-specific, site-specific, and EPZ-specific considerations. The Commission noted in *Long Island Lighting Company* (Shoreham), CLI-86-13, 24 NRC 22, 30 (1986): “Our emergency planning requirements do not require that an adequate plan achieve a preset minimum radiation dose saving or a minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident. Rather they attempt to achieve reasonable and feasible dose reduction under the circumstances; what may be reasonable or feasible for one plant site may be for another.” No change was made to the final rule or guidance document in response to this comment.

Comment: A commenter stated that the NRC did not provide a sound justification for the amended emergency plan change process rule changes being proposed. [0102]

NRC Response: The NRC disagrees with the commenter. The NRC provided its justification in the proposed rule SOC and in its supporting regulatory analysis. The commenter provided no substantiated evidence that the proposed changes were unnecessary or that the proposed approach would not be an improvement over the former approach. No change was made to the final rule or guidance document in response to this comment.

Comment: A commenter mentioned that the NRC would continue to use the letter approval process for EAL scheme changes, while individual EAL changes that would reduce the effectiveness of the plan would be submitted and processed as license amendments. The

commenter suggested that there is no reason to treat EAL scheme changes differently than individual EAL changes. [0095]

NRC Response: The NRC agrees with the commenter that the NRC should use the same process to review a licensee's EAL scheme changes as it will to review individual EAL changes that would reduce the effectiveness of the licensee's emergency plan. The Commission previously determined that a licensee's proposal to convert from one EAL scheme to another EAL scheme is of sufficient significance to require prior NRC review and approval (70 FR 3591; January 26, 2005). For the reasons provided in the final rule SOC, the NRC has determined that the license amendment process is the appropriate method for requesting NRC approval for EAL scheme changes, and the § 50.54(q) change process is to be used for all other EAL changes. Changes were made to the final rule based on this determination.

4.6 Removal of Completed One-time Requirements

Comment: One commenter supported the proposed elimination of one-time regulatory requirements. [0135]

NRC Response: No response is necessary.

4.6.1 10 CFR 50.54(r)

No comments addressed this section.

4.6.2 10 CFR 50.54(s)(1)

Comments on Retained Rule Language Regarding the EPZ

Comments: One commenter noted that the proposed regulation discusses the content of plans for the ingestion pathway EPZ, but does not do the same for the plume exposure pathway. The same commenter suggested that NRC allow additional flexibility for licensees to adjust their EPZs to account for new reactor technologies. [0084]

NRC Response: The NRC disagrees with the commenter. The content of licensee emergency plans is discussed in detail in Part 50, Appendix E, and not in 10 CFR 50.54(s)(1). The content of offsite emergency plans is addressed in FEMA regulations found in 44 CFR Part 350. No additional detail regarding the content of emergency plans is needed in 10 CFR 50.54(s)(1). Allowing additional flexibility for licensees to adjust the size of their EPZs to account for new reactor technologies is beyond the scope of this rulemaking. No change was made to the final rule in response to these comments.

4.6.3 10 CFR 50.54(s)(2)(i)

No comments addressed this section.

4.6.4 10 CFR 50.54(u)

No comments addressed this section.

5. Other Comments

5.1 *Finding of No Significant Environmental Impact*

No comments addressed this issue.

5.2 *Paperwork Reduction Act Statement*

No comments addressed this issue.

5.3 *Regulatory Analysis*

Detailed Comments on the Regulatory Analysis

Comments: One industry representative compared NRC's regulatory cost estimates for five rule areas with the results of a survey of three NPPs. The commenter concluded that NRC's cost estimates for on-shift staffing and evacuation time estimate updating are reasonably accurate. The commenter claimed that it could not estimate the full costs of licensee coordination with OROs because of a lack of clarity in the ISG. However, the commenter did determine that the NRC overestimated the cost of verifying mutual aid agreements. The commenter agreed with NRC's one-time cost estimate to implement drills and exercises, but stated that NRC's cost estimates to conduct the exercises are too low because they omit costs to State and local governments. The commenter further argued that NRC's cost estimates for backup means for alert and notification are inconsistent with the proposed requirements. The NRC calculated the cost of this provision as equal to the cost of upgrading plants' sirens. A siren upgrade would not satisfy the proposed requirements. The commenter suggested that the NRC revise the rule to make a siren upgrade sufficient. [0102]

NRC Response: The NRC agrees with the commenter regarding the estimates for licensee coordination with OROs and has revised the cost of verifying mutual aid agreements as suggested.

Regarding the cost for Challenging Drills and Exercises, the NRC agrees with the commenter that the costs of State and local participation should be included and has revised the regulatory analysis accordingly.

Concerning the cost for backup means for ANS, the NRC does not agree that the regulatory analysis was inconsistent with the proposed rule. Like the cost estimate for the proposed rule, the regulatory analysis for the final rule assumes that some licensees will upgrade their siren activation systems, as opposed to their sirens, to provide a redundant method of activating sirens. As stated in the assumptions for Table A.11 of the regulatory analysis, those sites that already have backup power for sirens could use this approach to comply with the requirement for a backup means for the alert portion of their ANS. Therefore, the NRC has not revised these cost estimates.

Other Comments Applicable to the Regulatory Analysis

Comments: One commenter suggested that the NRC use SOARCA data to update calculations of potential economic losses in an emergency event. [0048] Another commenter

argued that the proposed changes will cause a significant cost increase for OROs, and will have “no positive impact on protecting the public safety and health.” [0060]

NRC Response: The NRC disagrees with these commenters. The SOARCA study is currently under review, so it would not be appropriate to use the study as the basis for changes to EP regulations at this time.

Regarding the benefit of the amendments relative to the cost to OROs, the final rule is cost-justified because it increases the effectiveness of important aspects of licensees’ emergency plans, thereby potentially saving lives in the event of an emergency. The primary benefits of the final rule that affect OROs are to increase assurance that: (1) resources are available to respond to a hostile action at a NPP, and (2) emergency plans will be successfully implemented during any emergency. These benefits improve protection of public health and safety during an emergency. As a result, the regulatory analysis and backfit analysis for the final rule conclude that, when considered in the aggregate and relative to the associated one-time cost of approximately \$485,000 and annual cost of \$40,000 per NPP site, and one-time cost of \$14,000 per non-power reactor site, the changes in the final rule constitute a substantial increase in EP and are justified in view of the enhanced protection of public health and safety. No change was made to the regulatory analysis in response to these comments.

5.4 Regulatory Flexibility Certification

No comments addressed this issue.

5.5 Backfit Analysis

Comment: One commenter suggested that the regulatory analysis for the proposed rule, which states that “[t]he Backfit Rule protects licensees from Commission actions that arbitrarily change license terms and conditions,” reflects a misunderstanding of the purpose of the Backfit Rule. The commenter stated that the fundamental purpose of the Backfit Rule is not to prohibit arbitrary or otherwise illegal agency action but to ensure that changes in agency regulations or positions are properly justified and imposed in an orderly fashion. [0102]

NRC Response: The NRC agrees in part with the comment that the purposes of the Backfit Rule are not solely “to prohibit arbitrary or otherwise illegal agency action,” and that an objective of the Backfit Rule is to ensure that changes in NRC regulations or positions interpreting the regulations (and other NRC requirements) are justified and imposed in an orderly fashion, as well as to “ensure order, discipline, and predictability and to enhance optimal use of NRC staff and licensee resources.” U.S. Nuclear Regulatory Commission, NUREG-1409, “Backfitting Guidelines,” July 1990, ADAMS Accession No. ML032230247. The regulatory analysis’ discussion was intended to be a “shorthand” for the full panoply of regulatory/policy concerns to which the Backfit Rule is addressed. The NRC has revised the final regulatory analysis to address this comment.

However, the NRC disagrees with the comment’s implicit assertion that the Backfit Rule protects a licensee from changes in all NRC requirements. As discussed in a previous comment response, the Backfit Rule does not apply to changes in the NRC’s procedural and administrative requirements governing the manner in which a licensee must obtain an otherwise undisputed NRC approval (that is, the need for NRC approval is unquestioned). Clearly, any

such changes may not be illegal or arbitrary, and should be imposed in an orderly fashion to ensure optimal use of NRC and licensee resources. However, the NRC uses the regulatory analysis and Paperwork Reduction Act clearance processes, rather than the Backfit Rule, to achieve those objectives. The comment did not mention these processes, which are generally applicable to all Federal agencies. The NRC assumes that the comment is not implicitly suggesting that all other Federal agency decision making is defective because they are not subject to restrictions analogous to the Backfit Rule – restrictions which were voluntarily adopted by the NRC without statutory mandate or direction from the President.

5.6 Requests for an Extension of the Comment Period

Requests for an Extension of the Comment Period Beyond August 3, 2009

Comments: Fourteen commenters, including four members of the nuclear power industry and ten State or local government agencies, requested an extension of the comment period beyond the initial August 3, 2009 deadline. The commenters requested between 75 and 105 additional days to provide comments due to the substantive nature of the proposed amendments to NRC EP requirements; significant legal, regulatory, and policy issues requiring extensive review; additional time to discuss possible consequences of the proposed changes with affected State and/or local jurisdictions; and to allow for a more comprehensive review that will result in more meaningful comments. [0025, 0026, 0027, 0028, 0029, 0030, 0031, 0032, 0035, 0036, 0037, 0038, 0039, 0040]

NRC Response: The NRC granted the requests for an extension of the comment period and extended the public comment period to October 19, 2009 in view of the NRC's desire to receive high quality comments from external stakeholders, and recognizing the quantity of information to be analyzed and the coordination efforts needed by and among stakeholders.

5.7 Need for Further Public Outreach/Guidance

Requests for Additional Implementation Guidance for States

Comment: One commenter from a State government agency expressed a need for additional guidance from the NRC as to how States with multiple reactor sites should implement and schedule the exercises required by Part 50, Appendix E, Section IV.F.2.j. [0068]

NRC Response: The NRC agrees with the commenter. The rule language in Section IV.F.2.d was modified such that States with multiple sites should fully participate in one hostile action biennial exercise per exercise cycle and partially participate in other hostile action biennial exercises each cycle similar to how these States participate in the ingestion pathway portion of biennial exercises. In addition, the overall time period for conducting the initial hostile action biennial exercise was extended to December 31, 2015 to allow more time for States with multiple sites to prepare for these exercises.

5.8 Implementation

Request for NRC to Publish an Implementation Timeline

Comment: One commenter pointed out the absence of an implementation timeline for the proposed requirements. The commenter stated that the NRC should develop such a timeline, and should provide State and local agencies with an opportunity to provide their input. [0064]

NRC Response: The NRC agrees in part with the commenter. A proposed implementation plan or timeline was developed in conjunction with FEMA and provided in the proposed rule. Several comments were received on the proposed timeline and adjustments were made to it in the final rule. In addition, the NRC and FEMA conducted a public meeting on November 15, 2010 to obtain additional stakeholder feedback on the proposed implementation time periods. State and local agencies provided feedback on the implementation timelines at this session and additional adjustments were made as described in the final rule SOC.

5.9 Editorial Changes in the Proposed Rulemaking

5.9.1 Proposed change of “Radiation” to “Radiological”

No comments addressed this issue.

5.9.2 Proposed change of “DHS” to “FEMA”

No comments addressed this issue.

5.9.3 Other

Miscellaneous Editorial Changes

Comment: One commenter suggested revising Appendix E, Section IV.E.5 to replace references to “physicians” with the term “medical providers,” because licensees typically negotiate with providers rather than individual physicians. The commenter offered revised phrasing as follows: “Arrangements for medical service providers and other personnel qualified to handle on-site medical emergencies.” [0102]

NRC Response: The NRC agrees with the commenter that licensees typically do not make arrangements for emergency medical services with individual physicians, but rather through medical service providers. The final rule language in Appendix E, Section IV.E.5 addresses the change suggested by the commenter.

Comment: A commenter suggested revising Appendix E, Section IV.E.9.d to require licensees to contact only NRC headquarters during emergencies, eliminating the reference to contacting the NRC Regional Office. In current practice, the licensee notifies NRC Headquarters using the Emergency Notification System (ENS). NRC Headquarters then contacts appropriate response locations including NRC Regional Offices. The commenter offered revised phrasing as follows: “Provisions for communications by the licensee with NRC Headquarters from the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility. Such communications shall be tested monthly.” [0102]

NRC Response: The NRC disagrees with the commenter. Although the licensee notifies NRC Headquarters for initial and subsequent emergency declarations via ENS, a communications link between the licensee’s facilities and the NRC Regional Office can be used for providing

follow-up information directly to NRC regional staff if needed and requested by the NRC Regional Base Team. No change was made to the final rule in response to this comment.

Comment: One commenter recommended that NRC revise Appendix E, Section IV.F.2.a(iii) as follows: “For a combined license issued....” [0135]

NRC Response: The NRC agrees with the commenter. This was a typographical error and the final rule language in Appendix E, Section IV.F.2.a(iii) was changed as recommended by the commenter.

5.10 Other Miscellaneous Comments

Miscellaneous Comments

Comments: A commenter recommended a change to the FRN language on page 23265 regarding highway construction to recognize that planned construction may never begin or come to completion. The commenter also suggested that the NRC revise the FRN language on page 23265 as follows:

“The NRC has traditionally taken the lead in reviewing the ETE analyses with the assistance of a traffic expert contractor during the initial licensing of a plant, especially for contested licensing cases involving ETE contentions.” [0102]

NRC Response: The NRC agrees in part with the commenter. However, the NRC concluded that these sections of the SOC were not necessary to support the discussion of ETE updates and they were deleted. Therefore, a response to this commenter is unnecessary.

Comment: Several commenters provided comments on the FRN language on page 23265. One commenter argued that the rulemaking language as written implies that capacity and level of service (LOS) are synonymous, which is not correct. This commenter also argues that the HCM analysis focuses on traffic volume and does not discuss population. [0102] Another commenter stated that the language of this section assumes that roadways in all EPZs are near capacity in an evacuation. The commenter argued that this is not true for low population density EPZs. [0096] A third commenter agreed with this concern. [0098] Two of the commenters discussed the assumptions that were made regarding the roadways within the EPZ. The commenters suggested that the NRC re-evaluate the technical basis for the 10 percent criterion because almost all roadways within an EPZ are two-lane highways and not freeways. [0098, 0102]

NRC Response: The NRC changed the 10 percent population criterion as a result of other stakeholder comments, to a criterion that takes into account the effect of population change on the ETE values. Therefore, the NRC removed from the final rule SOC the language on which these comments were based because it was no longer needed to support the rule change. As a result, a response to the commenters is unnecessary.

Comment: One commenter argued that the proposed EP regulations should apply to NRC licensed activities beyond those in Parts 50 and 52. In particular, the commenter stated that the geologic repository at Yucca Mountain, Nye County, Nevada, which is licensed pursuant to Part 63, should be subject to the proposed regulations. [0047]

NRC Response: The NRC disagrees with the commenter. The emergency planning criteria for a facility licensed pursuant to Part 63 are contained in 10 CFR 73.32(b). No basis is provided for subjecting facilities licensed under Part 63 to additional emergency planning criteria resulting from the rule changes for facilities licensed under Part 50 or 52. No changes were made to the final rule in response to this comment.

Comments: Three commenters expressed concerns regarding the interactions between the stakeholders affected by the proposed regulations. [0048, 0057, 0084] One of the commenters stated that the NRC generally needs to improve its communication with other Federal agencies and the public and its elected officials regarding emergency planning and nuclear risks. [0048] Another commenter stated that several of the proposed regulations will directly impact State and local planning, which are under FEMA's jurisdiction. [0084] The third commenter claimed that the proposed rulemaking will empower nuclear utilities as governing bodies over their State and local governments. The commenter stated that the proposed arrangement would negatively affect the relationship between these entities, and could create conflicts of authority between the utilities and FEMA. [0057]

NRC Response: The NRC agrees in part with the commenters. This rulemaking was coordinated closely with FEMA to ensure that offsite agencies were aware of the proposed changes to EP regulations and potential impacts to offsite EP programs, and to align onsite and offsite guidance on implementing these changes. Comments and issues affecting both onsite and offsite EP programs were jointly resolved by the two agencies. The comment regarding the proposed rulemaking empowering nuclear utilities as governing bodies over State and local governments was addressed in Section 3.4 of this document. No changes were made to the final rule in response to these comments.

Comment: One commenter expressed concern that the NRC may not develop and maintain the ISG document to the level of detail that it would maintain another form of guidance such as a RG or NUREG. The commenter requested further dialogue with the NRC regarding the ISG after the NRC has considered comments on the proposed rule. [0102]

NRC Response: The NRC disagrees with the commenter. ISGs are developed and maintained following processes equivalent to those used for other types of NRC guidance documents. The NRC does not believe there is a need to conduct another comment period on the ISG after revisions are made based on changes in the final rule and comments received during the public comment period.

Comment: Another commenter suggested that enforcement actions for offsite infractions—such as a fine for deficiencies exhibited in an emergency drill—should be consistent with enforcement actions for onsite infractions of comparable significance. [0048]

NRC Response: The NRC disagrees with the commenter. The NRC does not have the regulatory authority to impose enforcement actions or penalties on OROs. No changes were made to the final rule in response to this comment.

Comments: One commenter stated that licensees' emergency plans and procedures are not coordinated and integrated with licensees' security plans and procedures. According to the commenter, this lack of synchronization will prevent OROs and licensees from effectively coordinating hostile action responses, drills, and exercises. The commenter also stated that the lack of integration may lead to the double-counting of certain resources. [0064]

NRC Response: The NRC disagrees with the commenter. The NRC has observed several drills that integrated security and EP, and the NRC expects that the drill and exercise program will continue to integrate security and EP. If there are site-specific integration problems, they should be worked out between the OROs and licensee. However, the NRC enforces its regulations and requires licensees to address any inadequacies. The burden is upon the licensees to ensure that their programs are integrated appropriately with those of OROs (per 10 CFR 50.47(b)(3) and (6)).

In addition, the development of an integrated hostile action response plan falls under the purview of each emergency response stakeholder working with each other to achieve integration. The barriers between interdisciplinary (Federal, State, and local) laws and regulations preclude a single entity to mandate this level of integration, except for the Congress of the United States. No changes were made to the final rule in response to these comments.

Comment: Another commenter recommended that the NRC amend its definition of hostile action to include cyber attacks. [FEMA-2008-022-0079]

NRC Response: The NRC disagrees with the commenter.

Section 73.54 of the NRC's regulations requires nuclear facility licensees to implement a cyber security program that provides high assurance that safety, security, and emergency preparedness functions of nuclear facilities are protected from cyber attacks. Licensees are expected to have an NRC-approved cyber security program. Additionally, the NRC provided a method to aid licensees in implementing 10 CFR 73.54 by developing Regulatory Guide 5.71, "Cyber Security Program for Nuclear Facilities" and the nuclear power industry indicated that it had voluntarily implemented cyber security programs in accordance with NEI 04-04, "Cyber Security Program for Power Reactors," at all power reactor sites. These documents provide the licensees with clear expectations on the plans, scope, and definition of cyber hostility.

Whereas cyber attacks directed at licensee facilities are associated with digital computer and communication systems and networks, "hostile action" is defined in the final rule as an act associated with individuals who can potentially achieve an end to harm public health and safety through the use of physical violence. The current regulatory requirements for cyber attacks are adequately and reasonably separated from the definition of "hostile action." No changes were made to the final rule in response to this comment.

5.11 Comments Outside the Scope of the Rulemaking

Communication with Public

Comments: One commenter recommended that the NRC communicate to the public that individuals should take protective actions in the event of a radioactive release beyond the edge of the EPZ. In addition, the commenter suggested that the public does not understand much about fatality risks. The commenter stated that the NRC should educate the public about how protective actions vary with distance and scenario. The commenter also stated that the NRC should inform the public that over-evacuation is undesirable because it slows down evacuees and could result in small increases in health consequences for evacuees nearest the site. In addition, the commenter suggested that the NRC inform the public that modern science

indicates that nuclear accidents are less likely than thought before and that only a small subset of nuclear accidents might result in a release of radioactive material, and that these releases would be much weaker than thought before and would take longer to enter the environment. The commenter also recommended that in the final rule the NRC should address public acceptance issues. [0048]

NRC Response: The NRC considers these comments to be beyond the scope of the rulemaking because this rule does not concern the NRC's public outreach efforts in the area of EP. No change was made to the final rule in response to these comments.

ANS Time Requirements

Comment: A commenter expressed concern that the requirement to complete an initial alerting within 15 minutes may result in increased use of "non-informative notifications" rather than "actionable notifications." [0065]

NRC Response: The 15 minute goal in 10 CFR Part 50, Appendix E, Section IV.D.3, for the initial alerting of the public is not under consideration in this rulemaking.

Protective Actions

Comments: One commenter provided several comments related to PARs under various scenarios, such as when offsite power is lost or an armed ground terrorist attack occurs at the site. The commenter submitted tables with various scenarios and recommended emergency responses and PARs under each scenario. The commenter also suggested that the NRC examine data and use modern emergency planning technology to help determine appropriate emergency response and PARs. The commenter also recommended that the application of protective action guides (PAGs) should be implemented on a group basis rather than on an individual basis to achieve the lowest overall exposure. With regard to evacuating people, the commenter suggested that the NRC consider psychological health consequences when balance different risks. [0048]

NRC Response: The NRC considers these comments to be beyond the scope of the rulemaking because this rule does not concern PARs. However, the NRC issued NUREG-0654, Supplement 3, Draft Report for Comment, "Guidance for Protective Action Recommendations for General Emergencies," for public comment on March 8, 2010. This draft guidance document would enhance protective action strategies for response to serious nuclear power plant emergencies. No change was made to the final rule in response to these comments.

Comments: Another commenter requested that the NRC require the following of licensees as protective measures: (1) pay the cost for evacuation plans for pre-school and day-care centers; (2) pay for additional vehicles and drivers to complete immediate transport of all students from every school district in the EPZ at one time; (3) expand the evacuation zone to at least 50 miles; (4) account for the wind direction at the time of the radiation release; (5) pay to build shelters at least 50 miles away in each direction from the nuclear plant; (6) immediately notify the public of any radiation release due to an accident or attack; (7) pay substantial fines for failure to provide immediate notification of any accident or attack; (8) provide funding for independent public education in regions around nuclear plants; and (9) guard against air strikes, missile attacks, and large numbers of terrorists. [0053] The commenter also suggested that potassium iodide

(KI) pills could lead to a false sense of protection among the public. [0053] Another commenter argued that the consequences of an accident may extend beyond the 10-mile EPZ. [0072] Another commenter recommended that the NRC take a conservative approach when establishing the size of the EPZ, and stated that the proposed rule should address the size of the EPZ. Further, the commenter recommended that the EPZ be subdivided into four regions. These regions would consist of an inner circle of two miles, a wedge area, a downwind sheltering area, and an unaffected area. [0048]

NRC Response: The NRC considers these comments to be beyond the scope of this rule. Although the topics addressed by these comments are enveloped within the overall scope of the Commission's EP regulations, the particular topics were not addressed in this proposed rule on which the NRC requested comments. The regulatory process for affecting changes such as those requested by the comments is provided in 10 CFR 2.802, "Petition for Rulemaking." With regard to Comment #6, although the scope of the proposed rule includes codifying a timeliness criterion for emergency classification, it does not include any changes to existing requirements regarding notification of State and local officials and the notification of the public by these officials. No change was made to the final rule in response to these comments.

Comment: Two commenters argued that the NRC is not using the most advanced modeling technique concepts for meteorology. The commenters indicated that the proposed enhancements to the regulations fail to meet current scientific understanding regarding meteorology, dose assessment, and speed at which an accident requiring protective actions for the public may develop. The commenters requested that the NRC include accurate dose assessments as part of the rulemaking. [0072, 0088]

NRC Response: The NRC considers these comments to be beyond the scope of this rule. Although dose assessments are enveloped within the overall scope of the Commission's EP regulations, dose assessment was not addressed in this proposed rule on which the NRC requested comments. The regulatory process for affecting such changes is provided in 10 CFR 2.802, "Petition for Rulemaking." No change was made to the final rule in response to this comment.

Comment: Another commenter stated that the proposed regulations do not assure public safety because the rule does not establish: (1) an upper limit on the allowable radiation dose members of the public may receive or the risk they may be exposed to, and (2) the risks caused by unnecessary evacuation. [0088]

NRC Response: The NRC considers these comments to be beyond the scope of this rule. Although protective actions and the guidelines for initiating those actions are enveloped within the overall scope of the Commission's EP regulations, these two topics were not addressed in the proposed rule on which the NRC requested comments. The regulatory process for affecting such changes is provided in 10 CFR 2.802, "Petition for Rulemaking." No change was made to the final rule in response to this comment.

Comment: A commenter stated that the proposed rule language says that the NRC may approve an emergency plan change if it is provided "reasonable assurance" that adequate measures can and will be taken in the event of a radiological emergency and that the rule needs to define "reasonable assurance." [0072]

NRC Response: The NRC considers this comment to be beyond the scope of this rule because the term “reasonable assurance” is not used in 10 CFR 50.54(q) of the proposed or final rule. The licensee’s burden is only to determine whether the change “reduces the effectiveness” of the plan—a phrase which is defined in the final rule. No change was made to the final rule or the guidance document in response to this comment.

Comment: A commenter also objected to NRC’s effort in Regulatory Issue Summary (RIS) 2005-02, Revision 1, to compel licensees to prepare license amendment requests in connection with emergency plan changes in advance of the completion of this rulemaking. The commenter stated that this violates the Administrative Procedure Act, and is inconsistent with the Commission’s Principles of Good Regulation. [0102]

NRC Response: The NRC considers the comment to be beyond the scope of this rulemaking. RIS 2005-02, Revision 1 was a separate administrative action and was separately published for public comment on August 24, 2009 (74 FR 42699), in keeping with the Commission’s Principles of Good Regulation. The EP rulemaking, which is the subject of this comment resolution, was independent of the RIS. Accordingly, this comment is out of scope. No change was made to the final rule in response to this comment.

Comments That Are Not Germane to the Rulemaking

Comment: One commenter submitted comments that focused on the limitations and capabilities of available transport technologies for use in the EAS construct. [0052]

NRC Response: The NRC considers this comment to be beyond the scope of this rulemaking. The NRC does not have the regulatory authority to set standards for the capabilities of transport technologies for use in the EAS. Such standards would be set by other Federal agencies, such as the Federal Communications Commission. No change was made to the final rule in response to this comment.

Opposed to Nuclear Power Plants

Comments: One commenter suggested that the facts indicate that NPPs are a clear and present danger, and argued that it is negligent for the NRC to claim that a meltdown is highly unlikely. The commenter called for the NRC to make decisions to hold the nuclear industry accountable for their “threat to society.” [0053]

NRC Response: The NRC considers this comment to be beyond the scope of this rulemaking. No change was made to the final rule in response to these comments.

Comment: Another commenter argued that nuclear power is environmentally hazardous and requested that NRC not issue licenses for current applications for NPPs. [0044]

NRC Response: The NRC considers this comment to be beyond the scope of this rulemaking. If a stakeholder has concerns about an applicant for a new nuclear power reactor license, the stakeholder has opportunities to participate in the applicant’s licensing proceeding to raise those concerns.

Scenarios and Vulnerabilities That Nuclear Power Plants Need to Protect Against

Comments: One commenter suggested that the NRC conduct a classified review of security issues. [0048] Another commenter suggested that the NRC require nuclear plant owners to guard against air strikes, missiles, and large group terrorists' attacks. [0053] The commenter stated that GE Mark II design reactors are vulnerable to terrorists' attacks for several reasons that should result in required nuclear industry protection against air strikes and missiles. The commenter also mentioned that small aircraft loaded with fuel could cause a significant radiation leak or a fire that could lead to a meltdown. [0053] Three commenters recommended that the NRC require NPPs to protect against attacks on spent fuel storage facilities. [0053, 0072, 0088]

NRC Response: The NRC considers these comments to be beyond the scope of this rulemaking because this rulemaking involves security matters only to the extent that they relate to EP. The commenters raised specific security issues independent of any connection to EP. Information on the security issues stated by the commenters can be found on the NRC's public website, such as the "Security Spotlight," which addresses layers of defense such as protecting against air attacks, defending against adversaries, securing materials and strengthening regulations (<http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/security-spotlight/overview.html>). No change was made to the final rule in response to these comments.

Comments: To help protect against attacks, a commenter suggested that the NRC require websites to remove high resolution mapping information immediately, including all on-line aerial views of NPPs. [0053] The commenter also cited issues with lax security, and claimed that NPPs remain vulnerable to terrorist attacks due to the NRC's reluctance to detect and/or address lax security, such as sleeping security guards. [0053]

NRC Response: The NRC considers these comments to be beyond the scope of this rulemaking because this rulemaking involves security matters only to the extent that they relate to EP. The commenters raised specific security issues independent of any connection to EP. No change was made to the final rule in response to these comments.

Comment: A commenter stated that the NRC plans for "best case scenarios" when they should assume the "worst case scenario." As an example, the commenter suggested that plans and the proposed rule assume slow breaking accidents. [0072]

NRC Response: The NRC considers this comment to be beyond the scope of this rulemaking. Nevertheless, the NRC does not plan for the "best case scenario." If it did, the extensive emergency planning regulations would not exist, nor would the requirements for a robust containment building around NPPs. The emergency planning zone is not based on a best case scenario, but rather addresses, in a conservative manner, the potential for an accident and the need to protect public health and safety. Additionally, the final rule requires exercise scenarios to include fast breaking events to enhance preparedness efforts and ensure adequate capabilities are demonstrated. However, if the commenter has information that would show the NRC's regulations are inadequate, that information should be forwarded to the NRC for review and analysis. No change was made to the final rule in response to this comment.

Comments: Another commenter recommended that all bridges at NPPs must be protected. [0070] The commenter stated that the NRC must re-examine this failure in the final rule. [0070] The commenter also suggested that the rule should prescribe a timeframe in which a licensee must determine that a cyber attack has occurred or is occurring. [0070]

NRC Response: The NRC considers these comments to be beyond the scope of this rule because this rulemaking involves security matters only to the extent that they relate to EP. The commenters raised specific security issues independent of any connection to EP. The regulatory process for rule changes such as those requested by the commenters is provided in 10 CFR 2.802, "Petition for Rulemaking." No change was made to the final rule in response to these comments.

Comment: One commenter suggested that telephone service is not reliable during emergencies, so licensees should have at least three satellite telephones. [0070]

NRC Response: The NRC considers this comment to be beyond the scope of this rule. The topic addressed by this comment is enveloped within the overall scope of the Commission's EP regulations but was not addressed in this proposed rule on which the NRC requested comments. The regulatory process for rule changes such as those requested by the commenter is provided in 10 CFR 2.802, "Petition for Rulemaking." No change was made to the final rule in response to this comment.

Performance Requirement

Comments: Two commenters recommended that the NRC set a performance requirement for emergency response plans. The commenter explained that the standard could be defined in terms of the net effect on the public in accident or sabotage scenarios or the degree of risk reduction achieved by the plan. [0088, 0109]

NRC Response: The NRC considers this comment to be beyond the scope of this rule. This rulemaking was not intended to replace the current regulatory scheme with a completely new program. However, the NRC is beginning work on technical bases to develop a more risk-informed regulatory oversight process that may address some of the commenters' concerns. No change was made to the final rule in response to these comments.

SOARCA Study

Comments: One commenter urged the NRC to continue with the SOARCA study and to expand it to deal with hostile action. The commenter also recommended that the NRC not take actions that would contradict the knowledge of severe accidents and their consequences that has been established thus far by the SOARCA effort. The commenter also suggested that the NRC explain the SOARCA to the public (its methods and conclusions). [0090] Another commenter suggested that the NRC use the SOARCA analyses to change other areas of EP not covered in proposed rule. [0048]

NRC Response: The NRC considers these comments to be beyond the scope of this rule. No change was made to the final rule in response to these comments.

6. Comments Shared With FEMA

Several commenters addressed topics that involve FEMA oversight. In some cases, the comments involved one of the NRC's rulemaking topics. For these comments, the NRC addressed the comment (with input from FEMA) within this document under the appropriate rulemaking issue category. In other cases, comments were submitted to the NRC's rulemaking docket involving issues or documents that were a part of FEMA's rulemaking docket. For these comments, the NRC provided FEMA with the comment submission so that the issue could be addressed as part of FEMA's docket.

NUREG-0654/FEMA-REP-1, Supplement 4

Comments: Several of the comments submitted to the NRC docket that FEMA addressed as part of its docket discuss NUREG-0654, Supplement 4. Four commenters provided detailed comments on the content of the document. [0060, 0064, 0065, 0102] Another commenter stated that the FEMA FRN implies that NUREG-0654 is a regulation, contrary to NRC's interpretation. The commenter recommended that FEMA add a statement regarding NUREG-0654 to the REP Program Manual similar to the one the NRC used in SECY-08-0182. [0069] Another commenter felt that the request for comment on NUREG-0654 was premature, and requested an additional comment period on the document after the rule language is finalized. [0089]

Alert and Notification Systems

Comments: One commenter stated the FEMA documents currently under review do not adequately address the evaluation criteria for backup alert and notification systems. [0069] Another commenter requested clarification of a paragraph in NRC's ISG document (NSIR/DPR-ISG-01) regarding FEMA's statistical sampling of residents to assess the public's ability to hear or receive alerts and notifications. The paragraph states that the notification capability "may be verified on a statistical basis," yet it also states that FEMA will take such a sample "Every year, or in conjunction with an exercise of the facility." [0100]

Use of FEMA/DHS Source Information in NRC's Interim Staff Guidance

Comments: One commenter stated that it appears that the ISG document (NSIR/DPR-ISG-01) appears to disregard stakeholder input from the regional meetings held by FEMA. [0100] The same commenter argued that the guidance document utilizes DHS Comprehensive Reviews as justification for the proposed regulation. The commenter states that States participating in the Comprehensive Reviews were not aware that the information they provided might be used as justification for regulatory changes. [0100]

7. Support of Other Comments

Comments: Fifteen commenters endorsed or voiced support for the comments on the proposed rule made by the Nuclear Energy Institute. [0075, 0076, 0082, 0087, 0089, 0090, 0091, 0092, 0093, 0094, 0099, 0101, 0103, 0104, 0135]

One commenter expressed support for the comments submitted by Pilgrim Watch. [0108]

NRC Response: No response is necessary.