RULEMAKING ISSUE

NOTATION VOTE

January 9, 2009 SECY-09-0007

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: PROPOSED RULE RELATED TO ENHANCEMENTS TO EMERGENCY PREPAREDNESS REGULATIONS (10 CFR PART 50) (RIN 3150-AI10)

PURPOSE:

To obtain Commission approval to publish for public comment a proposed rule that would amend certain emergency preparedness (EP) requirements that govern domestic licensing of production and utilization facilities.

SUMMARY:

The enclosed proposed rule, "Enhancements to Emergency Preparedness Regulations," would codify certain voluntary protective measures contained in NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security Based Events," and other generically applicable requirements similar to those previously imposed by Commission orders. It would also amend other licensee emergency plan requirements based on a comprehensive review of the Nuclear Regulatory Commission's EP regulations and guidance. The proposed requirements would enhance the ability of licensee's in preparing to take and taking certain emergency preparedness 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.

CONTACTS: Lauren M. Quinones, NRR/DPR
(301) 415-2007

Don R. Tailleart, NSIR/DPR
(301) 415-2966

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, including EP response to such events, differ from accident events due to the challenges presented to emergency responders as a result of the security event. 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 EP issues as described in SECY-05-0010. As a result, the 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: hostile action 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 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 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. In an April 17, 2007, memorandum from the Executive Director for Operations, the staff provided its rulemaking plan to the Commission. Later, when preparing the proposed rule, the staff identified similarities between two issues known in the rulemaking plan as "collateral duties" and "shift staffing and augmentation." As a consequence, these issues have been partially combined in this proposed rule. The NRC is now considering non-rulemaking options for some of the elements of shift staffing and is also requesting stakeholder comments in Section V of the Federal Register Notice. Also, in addition to the issues identified in the rulemaking plan, one administrative change has been added to remove certain one-time requirements that all licensees have completed.

DISCUSSION:

The proposed amendments to the EP requirements would result in changes to the following existing sections and appendices in Part 50:

- 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"

The proposed amendments would require holders of licenses under 10 CFR Part 50 that are currently subject to EP requirements, applicants for operating licenses under 10 CFR Part 50, or applicants for combined licenses under 10 CFR Part 52, to ensure that their EP programs meet the amended EP requirements. The proposed amendments would similarly apply to applicants for construction permits under Part 50 in their discussion of preliminary plans for coping with emergencies (§50.34(a)(10)) and to applicants for early site permits under Part 52 that choose to propose either major features of an, or a complete and integrated, emergency plan (10 CFR 52.17(b)(2)). The proposed amendments are summarized as follows. The first six are security-related issues associated with Order EA-02-026 or BL-05-02, five are non-security-related issues resulting from the comprehensive review of EP regulations and guidance, and one administrative:

1. On-Shift Multiple Responsibilities – The proposed requirements would explicitly limit duties assigned to on-shift emergency response organization (ERO) personnel to ensure

that these emergency responders do not become overburdened during an emergency event. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.A.

2. Emergency Action Levels (EALs) for Hostile Action Events – The proposed requirements would amend regulations to require licensees to have EALs for hostile action events. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.B.

3. Emergency Response Organization Augmentation and Alternate Facilities – The proposed requirements would amend regulations to require licensees to identify alternative facilities to support ERO augmentation during hostile action events. This would codify the ICM requirements and the enhancement examples described in BL-05-02. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.E.

4. Licensee Coordination with Offsite Response Organizations (ORO) During Hostile Action Events – The proposed requirements would amend regulations to require licensees to ensure ORO personnel assigned emergency plan implementation duties would be available to do so during hostile action events. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.A.7.

5. Protection for Onsite Personnel – The proposed requirements would amend regulations to require specific emergency plan provisions to protect onsite emergency responders, and other onsite personnel, in emergencies resulting from hostile action events at nuclear power plants. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E by creating a new Section I.

6. Challenging Drills and Exercises – The proposed requirements would amend regulations to require licensees to include hostile action event scenarios in drills and exercises and submit the scenarios for NRC review and approval. These proposed requirements would be incorporated into 10 CFR Part 50 Appendix E, Section IV.F.

7. Backup Means for Alert and Notification Systems – The proposed requirements would amend regulations to require licensees to have backup measures that would be implemented when the primary means of alerting and notification are unavailable. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.D.3.

8. Emergency Classification Timeliness – The proposed requirements would amend regulations to ensure that licensees are able to complete emergency classifications in a timely manner in the event of a radiological emergency. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.C.

9. Emergency Operations Facility – Performance Based Approach – The proposed requirements would amend regulations to provide performance-based criteria for consolidated EOFs. The NRC is also proposing revisions to regulations to remove the references to an EOF as a “near-site” facility and to incorporate specific EOF distance criteria into the regulations. These proposed requirements would be incorporated into

10 CFR 50.47(b)(3), 10 CFR 50.47(d)(1), 10 CFR 50.54(gg)(1)(i); and 10 CFR Part 50, Appendix E, Sections IV.E.8, IV.E.9.c, and IV.E.9.d.

10. Evacuation Time Estimate (ETE) Updating – The proposed requirements would amend regulations to require licensees to review ETEs periodically. These proposed requirements would be incorporated into 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.

11. Amended Emergency Plan Change Process – The proposed requirements would ensure that (1) the effectiveness of the emergency plans would be maintained, (2) changes to the approved emergency plan would be properly evaluated, and (3) any change that reduces the effectiveness of the plan would be reviewed by the NRC prior to implementation. These proposed requirements would be incorporated into 10 CFR 50.54(q) and 10 CFR Part 50, Appendix E, Section IV.B.

12. Removal of Completed One-Time Requirements – The NRC staff is proposing to amend regulations to eliminate 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 completed one-time requirements would be removed from 10 CFR 50.54(r), 10 CFR 50.54(s)(1), 10 CR 50.54(s)(2)(i), and 10 CFR 50.54(u).

This proposed rule would also require changes to docketed applications for new reactors. The current schedules for this rulemaking and for currently docketed combined license applications (COLAs), or anticipated early site permit (ESP) applications and COLAs, are such that the applications would be in various phases of NRC staff review, possibly as far along as the final hearing phase, when the Commission promulgates this rule as final. The staff has determined that any adverse impact of these changes on ESPs and COLAs can be managed through close communication with ESP and COL applicants and timely submission of the necessary changes to those applications.

The Commission should be aware that there are staff members that have views different than those presented in this paper with regard to one of the proposed changes (i.e., the changes to the process for reviewing changes to emergency plans as summarized in number 11 above.) These views are summarized in Enclosure 6 and will be addressed in the rulemaking process. The Office of the General Counsel has advised the staff that proposed changes to an emergency plan that would reduce the effectiveness of the plan must be submitted for NRC approval through a license amendment request.

Guidance Documents

The NRC staff expects to publish draft guidance documents for review and comment in conjunction with the proposed rule. Comments on the proposed guidance will be considered by the NRC in the development of the final guidance documents. The staff intends to keep power reactor license applicants aware of the development of the associated implementation guidance, including planned public meetings and posting draft implementing guidance on the NRC web site. The final guidance documents will accompany the proposed final rule.

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 proposed

rule. The NRC staff met with internal and external stakeholders, including FEMA management, on numerous occasions starting in 2005. Also, the staff posted draft rule language on the e-rulemaking website, http://www.regulations.gov, on February 29, 2008, and solicited stakeholder comments. The NRC received three comment letters. One comment letter was submitted by the State of Pennsylvania, one was submitted by the Nuclear Energy Institute, and one was submitted by the Union of Concerned Scientists on behalf of several non-governmental organizations. The NRC considered the comments received on the draft rule language in the process of developing the proposed rule. The NRC staff hosted a public meeting on March 5, 2008, to discuss the draft rule language, and on July 8, 2008, to discuss comments received on the draft rule language. The NRC staff plans to hold additional public meetings following the publication of the proposed rule in the *Federal Register*. Enclosure 5 summarizes the comments received and the NRC's resolution of those comments.

COMMITMENT:

The staff plans to publish this proposed rule in the *Federal Register* in February 2009. After consideration of public comments, the staff plans to submit the final rule to the Commission for consideration in December 2009. This schedule was approved by the Executive Director for Operations on April 17, 2007.

RESOURCES:

Staff estimates that the total resources required for FY 2009 are 4.5 Full Time Equivalent (FTE) and $250,000, and for FY 2010 are 3.4 FTE and $250,000. The following resources are included in the FY 2009 President's Budget and FY 2010 budget request:

NRR: FY 2009 - 1.2 FTE, FY 2010 - 0.4 FTE

NSIR: FY 2009 - 2.5 FTE and $250,000 ($35K is subject to a FY 2009 Appropriation), FY 2010 - 2.5 FTE and $250,000

OGC: FY 2009 - 0.4 FTE (subject to a FY 2009 Appropriation), FY 2010 - 0.1 FTE

NRO: FY 2009 - 0.1 FTE, FY 2010 - 0.1 FTE

ADM: FY 2009 - 0.1 FTE

FSME: FY 2009 - 0.2 FTE (subject to a FY 2009 Appropriation), FY 2010 - 0.3 FTE

$35K for this activity are deferred for NSIR under the six month FY 2009 Continuing Resolution (CR). 0.4 FTE is deferred for OGC under a one year CR. 0.2 FTE is deferred for FSME under a six month and one year CR. These resources are subject to a FY 2009 appropriation.

RECOMMENDATIONS:

The staff recommends that the Commission take the following actions:

1. Approve for publication in the *Federal Register* the proposed amendment to 10 CFR Part 50 (Enclosure 1).

2. Certify that this rule, if promulgated, will not have a significant economic impact on a substantial number of small entities in order to satisfy requirements of the Regulatory Flexibility Act (5 U.S.C. 605(b)).

3. Take note of the following:

   a. The proposed rule will be published in the *Federal Register* for a 75-day comment period.

   b. A draft regulatory analysis has been prepared (Enclosure 2).

   c. A draft environmental assessment and finding of no significant impact has been prepared (Enclosure 4).

   d. This proposed rule creates new information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq*.). The staff will submit this rule to the Office of Management and Budget (OMB) for review and approval of the paperwork requirements (Section XIII of Enclosure 1). A draft OMB supporting statement has been prepared (Enclosure 3).

   e. The appropriate Congressional committees will be informed.

   f. The Office of Public Affairs will issue a press release.

COORDINATION:

The Office of the General Counsel has no legal objection to the proposed rule. The Office of the Chief Financial Officer has reviewed the proposed rule for resource implications and has no objections.

The Office of Information Services has reviewed the proposed rule and has no objections to the changes in information collection requirements.

/RA/

R. W. Borchardt
Executive Director
for Operations

Enclosures:
1. *Federal Register* Notice
2. Draft Regulatory Analysis and Backfit Analysis
3. Draft OMB Supporting Statement
4. Environmental Assessment
5. Summary and Analysis of Public Comments on the Draft Rule Language
6. Concerns of Some Members of the Staff Regarding Proposed Emergency Preparedness Rulemaking

[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

RIN 3150–AI10

[NRC-2008-0122]

Enhancements to Emergency Preparedness Regulations

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC or Commission) is proposing to amend certain emergency preparedness (EP) requirements in its regulations that govern domestic licensing of production and utilization facilities. The proposed amendments would codify certain voluntary protective measures contained in NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security Based Events," and other generically applicable requirements similar to those previously imposed by Commission orders. They would also amend other licensee emergency plan requirements based on a comprehensive review of the NRC's EP regulations and guidance. The proposed requirements would enhance the ability of licensee's in preparing to take and taking certain emergency preparedness 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.

DATES: Submit comments on the rule by **[INSERT DATE 75 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*].** Submit comments on the information collection aspects of this rule by **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*]**. Comments received after the above dates will be considered if it is practical to do so, but

assurance of consideration cannot be given to comments received after these dates.

ADDRESSES: You may submit comments by any one of the following methods. Comments submitted in writing or in electronic form will be made available for public inspection. Because your comments will not be edited to remove any identifying or contact information, the NRC cautions you against including any information in your submission that you do not want to be publicly disclosed.

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) 415-5905; e-mail Carol.Gallager@nrc.gov.

Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.

E-mail comments to: Rulemaking.Comments@nrc.gov. If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at (301) 415-1966.

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at (301) 492-3446.

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

NRC's Public Document Room (PDR): The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Public File Area O1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

NRC's Agencywide Documents Access and Management System (ADAMS): Publicly available documents created or received at the NRC are available electronically at the NRC's Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the

documents located in ADAMS, contact the NRC's PDR reference staff at 1-800-397-4209, or (301) 415-4737, or by e-mail to PDR.Resource@nrc.gov.

FOR FURTHER INFORMATION CONTACT: Lauren Quiñones, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-2007, email Lauren.Quinones@nrc.gov ; or Don Tailleart, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-2966, email Don.Tailleart@nrc.gov .

SUPPLEMENTARY INFORMATION:

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 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 the Supplementary Information of this document provides a list of the public 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". 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: hostile action-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 via a memorandum. 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 would allow a more timely rulemaking effort to occur and would 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 proposed rule. The NRC is considering non-rulemaking options for some of the elements of shift staffing and is also requesting stakeholder comments in Section V of this document. Additionally, the Commission

directed the NRC staff in SRM-M060502, "Staff Requirements – Briefing on Status of Emergency Panning 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.

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 proposed rule. The NRC discussed the proposed improvements to the EP regulations and guidance at several conferences with key stakeholders present including the 2007 Regulatory Information Conference and the 2008 National Radiological Emergency Preparedness 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. This is discussed further in Section IV below. 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 emergency preparedness 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.

II. Discussion

The proposed amendments would require 10 CFR Part 50 licensees that are currently subject to the EP requirements, and applicants for operating licenses under Part 50 or combined licenses under Part 52 that would be subject to the proposed EP requirements to ensure that their EP programs meet the amended EP requirements. The proposed amendments would similarly apply to applicants for construction permits under Part 50 with respect to their discussion of preliminary plans for coping with emergencies (§ 50.34(a)(10)), and to applicants for 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)).

The 16 planning standards in § 50.47(b) apply to both 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 the Federal Emergency Management Agency's (FEMA) recommendation, which is based on the content of the State and local plans. FEMA's regulations in 44 CFR Part 350 also contain these 16 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 that are proposed by the NRC in this rulemaking are designed to affect the onsite plans, not the offsite plans. The proposed changes have been written in a way that is expected to limit the chance of unintended impacts on FEMA regulations.

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 does 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 are 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 discussion of the proposed amendments 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 Issues

The NRC is proposing amendments to enhance its EP regulations by clearly addressing EP actions for a hostile action event. Some of these proposed 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 (January 13, 2003; 68 FR 1643); Order EA-03-039, "Security Personnel Training and Qualification Requirements (Training) Order," issued April 29, 2003 (May 7, 2003; 68 FR 24514); Order EA-03-086, “Revised Design Basis Threat Order,” issued April 29, 2003 (May 7, 2003; 68 FR 24517); and the Design Basis Threat (DBT) final rule (March 19, 2007; 72 FR 12705). As a result of these adequate protection requirements, the Commission has determined that the proposed EP changes that are based on the requirements of Order EA-02-026 would no longer be necessary

to ensure adequate protection during a hostile action event. Therefore, because the existing regulatory structure ensures adequate protection of the public health and safety and common defense and security, the NRC has determined that, in the current threat environment, the following proposed amendments would not be necessary to ensure adequate protection during a hostile action event. These amendments are considered enhancements to the current EP regulations. However, these enhancements would result in a substantial increase in emergency preparedness and the protection of public health and safety.

1. *On-Shift Multiple Responsibilities*

The NRC is concerned that on-shift ERO personnel who are assigned to emergency plan implementation functions may have multiple responsibilities that would prevent timely performance of their assigned emergency plan tasks. The current requirements for on-shift responsibilities are addressed in § 50.47(b)(2) and Part 50, Appendix E, Section IV.A. These regulations do not state 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 result in overburdening the control room staff during an emergency event. One licensee had assigned the STA as fire brigade leader which could hinder 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. Assigning additional duties, such as fire brigade member 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 subject 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 could result 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 expects this practice to continue. This could increase the risk of over-burdening on-shift responders and result in inadequate or untimely response. Therefore, both of these options were considered unacceptable. Instead, the NRC is proposing to revise Part 50, Appendix E, Section IV.A. to address this issue, as discussed in Section V of this document.

2. *Emergency Action Levels for Hostile Action Events*

Section 50.47(b)(4) currently stipulates that emergency plans must include a standard emergency classification and action level scheme. Part 50, Appendix E, Section IV.B., currently 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, current NRC regulations do not require EALs for hostile action events and do not address the issue of anticipatory response to hostile action events. Although Order EA-02-026 and BL-05-02 addressed these issues, those improvements to the EAL requirements to address hostile action events are only in orders and guidance. Thus, the NRC cannot ensure consistent and effective implementation of these enhancements among existing and future licensees.

Order EA-02-026 required the declaration of at least an 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 events 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/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," 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 licensees have implemented both the credible threat EAL required by Order EA-02-026 and the EAL enhancements specified in BL-05-02, there is no requirement to

maintain the enhancements identified in the bulletin. This could result in inconsistent EAL implementation among licensees for response to hostile action events. Also, future licensees would not be required to include these enhancements in their emergency plans. This rulemaking would serve to establish consistent EALs across the nuclear power industry for hostile action events. The ICMs and BL-05-02 provided enhancements to EAL schemes which would allow event declarations to be accomplished in a more anticipatory manner. This 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 believes that these enhancements to the EAL requirements addressing hostile action events should be codified by revising Part 50, Appendix E, Section IV.B., as discussed in Section V 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 continue to be no regulatory requirement for current or future licensees to incorporate EALs for hostile action events in their emergency plans, nor would there be a consistent minimum level of implementation that the NRC had determined to be adequate.

3. *Emergency Response Organization (ERO) Augmentation and Alternative Facilities*

Licensees are required by current § 50.47(b)(8) and Part 50, Appendix E, Section IV.E. 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) which 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.

However, the current regulations at § 50.47(b)(8) and Part 50, Appendix E, Section IV.E. do not require licensees to identify alternative facilities to support ERO augmentation during hostile action events. During a hostile action event, 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.

Order EA-02-026 required that licensees assess the adequacy of staffing plans at emergency response facilities during a hostile action event, 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 a hostile action event. 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 a hostile action event until the site was secured. However, the NRC considers it prudent to fully activate ERO members for off-normal working hour hostile action events to promptly staff alternative facilities, in order to minimize delays in overall site response. Even during normal working hours, licensees should consider deployment of onsite ERO personnel to an alternative facility near the site during a hostile action event.

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 were taken, there would continue to be no explicit regulatory requirement regarding the actions necessary during hostile action events for the ERO to staff an alternative facility. ERO members would likely not have access to the site during a hostile action event, but timely augmentation would still be necessary for adequate response. Taking no regulatory action may result 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 endorse by RIS 2006-12, do not provide a consistent, NRC-approved means for addressing needed enhancements for hostile action events. The use of voluntary programs does not ensure long-term continuity of the enhancements for both licensees and applicants. Thus, the NRC believes that the ICM requirement and the enhancement examples described in BL-05-02 concerning ERO augmentation to alternative facilities during hostile action events should be codified in Part 50, Appendix E, Section IV.E. to maximize the effectiveness of the site response. These proposed changes are discussed in Section V of this document.

4. *Licensee Coordination with Offsite Response Organizations during Hostile Action Events*

The NRC believes that a unique challenge posed by a hostile action event 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. Current regulations at § 50.47(b)(1) and Appendix E to Part 50 do 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 a hostile action event 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 events 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 a hostile action event. The NRC acknowledged this challenge when it issued Order EA-02-026 and included provisions that licensees address coordination with OROs for hostile action events. 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 in a hostile action event.

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 a hostile action event. 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 to ensure that adequate resources are available to respond to a hostile action event 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. The NRC believes that a voluntary approach would not ensure consistent industry-wide implementation of the ICM requirements and there would be no requirement for new licensees to incorporate the changes into their emergency plans.

The NRC is proposing to revise Part 50, Appendix E, Section IV.A.7. to require licensees to ensure that ORO personnel assigned emergency plan implementation duties would be available to do so during hostile action events. These proposed changes are discussed in Section V of this document.

5. *Protection for Onsite Personnel*

Existing NRC regulations at § 50.47(b)(10) and Appendix E to Part 50 do not currently require specific emergency plan provisions to protect onsite emergency responders, and other onsite personnel, in emergencies resulting from hostile action events 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 a 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. The NRC believes that taking no action could result in the vulnerability of onsite personnel during a hostile action event. 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 does not ensure that these measures would be incorporated into emergency plans at new sites.

The NRC is proposing to revise Appendix E by creating a new Section I. to address this issue, as discussed in Section V 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 a hostile action event, 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 event scenarios. The current NRC regulations are general in nature and do not explicitly require licensees to include hostile action event scenarios in drills and exercises, nor do they directly allow the NRC to require specific scenario content. The NRC believes that its regulations should be revised 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 hostile-action EP tabletop drills at four sites, a drill at one site, and an exercise at one site, as well as several security FOF exercise evaluations. 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;
- 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 plant licensees stated that they would develop and implement an enhanced drill and exercise program. Program elements are captured in a guidance document developed by NEI, NEI 06-04, Rev. 1, “Conducting a Hostile Action-Based Emergency Response Drill.” 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 is voluntary, and the NRC cannot require licensees to maintain these enhancements, absent issuance of an order.

Issuance of orders is resource intensive and an inefficient approach to address a generic problem.

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 and guidance that would require revision to enhance exercise scenarios. The working group recommended several changes to the FEMA Radiological Emergency Preparedness (REP) Program Manual that comport with proposed changes to NRC regulations 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 may relate 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 will inform the update to the REP Program Manual. The NRC also considered stakeholder views as they relate to this proposed rule and enhancements to EP guidance, although some comments were received after the deadline to be considered in this proposed rule.

The NRC believes that a regulatory change would be necessary to enhance scenario content to include hostile action scenarios and reduce preconditioning through a wide spectrum of challenges. This change would 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 ensure correction of the issues 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 proposing to revise Appendix E, Section IV.F. to address these issues, as discussed in Section V of this document.

B. Non-Security Related Issues

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

1. *Backup Means for Alert and Notification Systems*

The current 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. Existing NRC regulations do 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 do 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 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 Regulatory Guide (RG) 1.155, “Station Blackout,” (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 is appropriate that the NRC also consider 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 does 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, or designating multiple EAS broadcast stations to ensure that instructional messages can be transmitted. A voluntary approach may be appropriate 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 should be required to have backup ANS methods and therefore is proposing rulemaking to address backup capabilities for

both the alert and notification functions. Three variations for addressing this issue in rulemaking were considered.

The first variation would add 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 eliminate any of these other failure modes. This approach would prescribe 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 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. Therefore, the NRC considered this approach to be unacceptable.

The second variation would require that the primary ANS be designed so there would be no common single failure mode for the system; therefore, a backup system would not be needed. This approach would ensure that the entire ANS is 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 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 be difficult. Even after extensive analysis and testing of a warning system, a common failure mechanism may not become evident until the system is to be activated for an emergency event. For a siren-based system, several additional sirens (with backup power capabilities) may need to be installed to provide overlapping acoustic coverage in the event clusters of sirens fail and thus may discourage licensees at future nuclear power plant sites from using these systems due to the increased cost for installing additional sirens. This approach may not be 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 has directed FEMA to require all outdoor warning systems to be operable in the absence of AC power.

The third variation was selected for rulemaking and would revise Part 50, Appendix E, Section IV.D.3 to require backup measures that would be implemented when the primary means of alerting and notification are unavailable. These proposed changes are discussed in Section V of this document.

2. *Emergency Classification Timeliness*

In its oversight of licensee EP programs, the NRC has occasionally observed a lack of urgency by a few licensees in performing emergency classifications. This situation may be a result of a lack of a specific regulatory timeliness requirement. Emergency classification 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 – notice of unusual event, alert, site area emergency, or general emergency – is to be declared.

These classifications 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 classification 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 classifications would be 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 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 would be 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 was rather a guideline for 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 a few instances, during actual events, in which classifications were inappropriately delayed. Although these few 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 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 broadly worded regulatory requirements, there is currently no regulatory requirement, broad or otherwise, that emergency classifications meet any particular timeliness criterion. The NRC believes that the fourth option, an amendment of the regulations, would be the best course of action to ensure that licensees are able to complete emergency classifications in a timely manner in the event of a radiological emergency. Placing a classification timeliness criterion into the regulations would clearly establish the NRC's expectations, as well as provide a regulatory framework to consistently enforce these

expectations. The NRC considered amending § 50.47(b)(4), Part 50, Appendix E, Section IV.B., IV.C., or IV.D., or a combination of all of them. The NRC opted not to amend § 50.47(b)(4) because it is applicable to both onsite and offsite emergency plans, whereas Appendix E is applicable to an applicant or licensee - the entity responsible for making emergency classifications.

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 would allow licensees some degree of flexibility during an actual radiological emergency in addressing extenuating circumstances that may arise when an emergency classification 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 would 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 proposing to revise Part 50, Appendix E, Section IV.C. to address this issue by providing a capability criterion. These proposed changes are discussed in Section V of this document.

3. *Emergency Operations Facility – Performance-Based Approach*

Several nuclear power plant 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 current §§ 50.34(f)(2)(xxv), 50.47(b)(3), 50.47(d)(1), 50.54(gg)(1)(i), and Appendix E, Sections IV.E.8.,

IV.E.9.c., and IV.E.9.d. Guidance documents, including NUREG-0696, “Functional Criteria for Emergency Response Facilities,” and NUREG-0737, “Clarification of TMI Action Plan Requirements,” Supplement 1, “Requirements for Emergency Response Capabilities,” 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 do not explicitly define the term “near-site.” This regulatory structure has 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 current regulations nor guidance documents address 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 be applied to consolidation of EOFs if clearer criteria were 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 revising the regulations (and associated guidance) such that the consolidation of EOFs for multiple sites, as well as situations when a licensee proposes to locate an EOF for a single site or different licensees propose to share an EOF that is separately staffed and operated by each licensee, where the EOF is located more than 25 miles from at least one of the nuclear power reactor sites, could be implemented without prior NRC approval. However, the benefits of locating an EOF for a single site or co-locating an EOF for different licensees at a remote location are not evident in terms of increasing staffing flexibility and standardizing emergency response. Although a co-located EOF would have some of the same characteristics as a consolidated facility in terms of equipment, displays, and other types of resources, each licensee would staff and operate the co-located facility according to a plant-specific emergency plan and set of implementing procedures. In this sense, a co-located EOF is more like a single-site facility. Offsite officials that respond to the facility would not benefit from dealing with a standardized licensee emergency response staffing organization or response methodology for multiple sites. The remote siting of an EOF for a single site or as a co-located facility would be more appropriately addressed as a request for an exception to NRC guidance or an exemption from NRC regulations and considered on a case-by-case basis. Therefore, the NRC determined that this option would not be appropriate.

Another option considered would be to maintain EOF distance criteria as guidance only and to specify consolidated EOF criteria in guidance rather than in the regulations. However, providing these criteria as guidance only would not ensure that future applicants would follow the criteria. Thus, an EOF could be located within 10 miles of a site with no backup facility provided, or could be located beyond 25 miles of a site without prior NRC approval. A consolidated EOF could be implemented without meeting the proposed performance-based criteria. A licensee could relocate or consolidate 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 be implemented that may not provide 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 be appropriate.

Therefore, the NRC is proposing changes to NRC regulations (and associated guidance) so the criteria for consolidated EOFs would reflect a performance-based approach. The NRC is also proposing revisions to 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 V of this document.

In a conforming change, § 52.79(a)(17) would be revised to make clear 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 E.8.a(i) would apply. That section would accurately reflect the need for the combined license application to address an EOF; by contrast § 50.34(f)(2)(xxv) only requires 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 propose 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 current EP regulations at § 50.47(b)(10) and Part 50, Appendix E, Sections II.G., III., and IV. require 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 current regulations do 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 they currently do not affect the development of public protective action strategies.

Nuclear power plant 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. Applicants include the results of the ETE analysis in the onsite emergency plan, typically 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. The NRC has traditionally taken the lead in reviewing the ETE analyses with the assistance of a traffic expert contractor, especially for contested licensing cases involving ETE contentions.

In NUREG/CR-6953, Vol. 1, “Review of NUREG-0654 Supplement 3, Criteria for Protective Action Recommendations for Severe Accidents,” 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 improvements 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 ETEs. Improving the accuracy and quality of ETE values would help 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 protective action strategies.

To address this issue, the NRC considered amending the current regulations to require licensees to assess changes to the EPZ infrastructure and 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 drafted several NRC studies related to evacuation (e.g., NUREG/CR-6863, “Development of Evacuation Time Estimates for Nuclear Power Plants,” NUREG/CR-6864, “Identification and Analysis of Factors Affecting Emergency Evacuations,” and NUREG/CR-6953). Based upon their expert opinion, SNL confirmed that the major contributor to changes in ETE is changes in population. Although changes in infrastructure can impact the ETE, population is the more important factor.

The planning and budget cycle for infrastructure projects is measured in years, as indicated in GAO-03-764T, "Testimony Before the Subcommittee on Transportation, Treasury and Independent Agencies, Committee on Appropriations, House of Representatives, 'Federal Aid Highways: Cost and Oversight of Major Highway and Bridge Projects - Issues and Options.'" Within the years it takes to plan, budget, and construct highway infrastructure, the opportunity exists to include such improvements in the ETE as planned or constructed, based on the timing of the infrastructure, whereas significant population changes can occur over shorter periods of

time. Therefore, with population changes as the major contributor and infrastructure changes as an enveloped contributor, the NRC determined that simplifying the regulations to explicitly require assessment of ETEs based on population changes was adequate for updates to ETEs. In the case of an infrastructure change due to a catastrophic event, the NRC already has regulations in place to ensure that licensees consult with OROs to consider the impact of offsite events on evacuation routes and ETEs.

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 provide the regulatory means for enforcing the desired frequency of ETE updates and consistency of ETE determinations.

The NRC is proposing to amend § 50.47(b)(10) and Part 50, Appendix E, Section IV. to require the periodic review of ETEs. The NRC considered codifying that all population changes result in updates to ETEs, but determined that population changes of less than 10 percent would not significantly impact the ETE. The basis for establishing a requirement to update ETEs when the population has changed by at least 10 percent is derived from the U.S. Department of Transportation “Highway Capacity Manual” (HCM), which contains analysis techniques for determining the capacity of a roadway, (i.e., Level of Service (LOS)). The analysis applies a series of curves called the “Speed Flow Curves and LOS for Basic Freeway Segments” to roadways and determines the LOS for a given traffic volume. The analysis shows that traffic volume is a direct indicator of the population involved in an evacuation given the roadway system in the area of concern. The HCM analysis shows that an increase in 10 percent of vehicles on roadways that are near capacity (such as would be the case in an evacuation) likely creates a decrease of one level of roadway service (i.e., from Level D to Level E). This decrease in roadway service results in slower moving traffic and longer ETEs. The decrease in

LOS is not apparent for a vehicle, or population, increase of less than 10 percent.

Additionally, the NRC believes that the 10 percent threshold would balance potential inadequacies and burdens. Based on the HCM analysis, SNL research, and NRC experience, 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, thereby potentially reducing the effectiveness of the ETEs. At the same time, requiring an assessment of licensee ETEs for a change in population of less than 10 percent would require licensees to make assessments when the change in population would not likely have a meaningful impact on the ETEs. Thus the NRC believes that a population change of 10 percent is the adequate threshold for requiring an assessment of licensees' ETEs.

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 current Appendix E to Part 50 and, for nuclear power reactor license applicants, the standards of current § 50.47(b). After the facility license is issued, the holder of the license is required by current § 50.54(q) to follow and maintain in effect emergency plans which meet the requirements of current Appendix E and, for nuclear power reactor licensees, the standards of current § 50.47(b). Current § 50.54(q) also provides a process under which a licensee may make changes to its approved emergency plans without prior NRC approval provided the changes would not decrease the effectiveness of the emergency plans as approved and the plans, as modified, would continue to meet applicable regulations. However, the NRC has determined that the language of the current § 50.54(q) does 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 in effect its emergency plan if the NRC is to continue to find that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency as stipulated by § 50.54(s)(2)(ii). The EP regulations generally refer to the onsite emergency plan as a stand-alone document. However, emergency plans rely 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 the 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 may not adequately consider the impact of configuration changes on the effectiveness of the emergency plan.

The NRC has determined that the phrase “maintain in effect” in the current § 50.54(q) is not adequately clear in conveying the NRC expectation that an effective emergency plan also requires maintaining the various capabilities and resources relied on in the plan. The phrase “maintain in effect,” as applied to emergency plans in current § 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 proposing to amend current § 50.54(q) to clarify that the regulatory intent is the latter sense by requiring licensees to follow and “maintain the effectiveness” of their approved emergency plans.

Current § 50.54(q) also provides a process under which a licensee may 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. Prior NRC approval is required for any change that could decrease the effectiveness of the emergency plan. The NRC and licensees have experienced significant difficulties in implementing this portion of current § 50.54(q) because the current rule language does not define what constitutes a decrease in effectiveness of an emergency plan nor does it identify the type of changes that would constitute a decrease in effectiveness of the plan. The lack of clear evaluation criteria has resulted in regulatory inefficiencies, such as licensees submitting for review changes that do 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 are attributable to these findings.

The NRC has 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 emergency plans, and (3) provide some examples of changes that are not decreases in effectiveness. Although RIS 2005-02 provides 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."

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 have yet to agree on the best approach to resolve the problems. Issuing more regulatory guidance was rejected because that approach has been tried but has not resolved the problems. The NRC believes that an amendment to the regulations, supplemented as necessary by regulatory guidance, would be the best course of action and would ensure that (1) the effectiveness of the emergency plans would be maintained, (2) changes to the approved emergency plan would be properly evaluated, and (3) any change that reduces the effectiveness of the plan would be reviewed by the NRC prior to implementation. The NRC proposes to issue regulatory guidance concurrently with the implementation of the amended rule language and would consider stakeholder-developed and -proposed guidance as an alternative to NRC-developed guidance.

The NRC is proposing to amend current § 50.54(q) to replace the existing language. Conforming changes have been proposed in Part 50, Appendix E, Section IV.B. The NRC also believes that the proposed rule changes would promote consistent and predictable

implementation and enforcement, while minimizing inefficient and ineffective use of licensee and NRC staff resources.

6. *Removal of Completed One-Time Requirements*

The NRC is proposing to eliminate 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 proposed to be removed are:

(1) Section 50.54(r), which requires 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 proposes to delete this requirement and designate the section as “reserved.”

(2) Section 50.54(s)(1), which requires nuclear power plant 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. However, that portion of § 50.54(s)(1) that discusses the size of the EPZs would be retained. There is no longer a need for this provision because this requirement has expired. However, the rule language regarding EPZ size and footnotes 1 and 2 regarding those EPZs remain applicable. The NRC proposes to delete the obsolete text while retaining the current language regarding EPZs and footnotes 1 and 2.

(3) Section 50.54(s)(2)(i), which requires the nuclear power plant 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 proposes to delete the current

§ 50.54(s)(2)(i), designating the section as “reserved.”

(4) Section 50.54(u), which requires 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 proposes to delete this requirement and designate the section as “reserved.”

The NRC is proposing to eliminate these completed one-time requirements in the interest of regulatory clarity. Eliminating these requirements would not relax any currently effective regulatory requirement and would cause no regulatory burden on any current or future licensee or applicant.

III. Public Input to the Proposed Rule.

A. *Public Meetings*

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

1. Meeting with NRC regional EP inspectors in January 2005 and January 2006;
2. Public meeting with interested stakeholders on August 31 and September 1, 2005;
3. Public meetings with State, local, and Tribal governments and nuclear power industry representatives at the National Radiological Emergency Preparedness (NREP) Conference on April 11-14, 2005, March 27-30, 2006 and April 7-10, 2008;

4. Regulatory Information Conference on March 16, 2007;
5. Public meeting with non-governmental organizations (NGOs) on May 19, 2006;
6. Public meeting with the NEI/nuclear power industry representatives on July 19, 2006;
7. Regional public meetings with State and local representatives and nuclear power industry working groups;
8. Public meeting with external stakeholders on March 5, 2008;
9. Meeting with nuclear power industry representatives at the 2008 NEI Communications Forum; and
10. Public meeting with external stakeholders on July 8, 2008.

The NRC also met routinely with representatives of FEMA to coordinate issues of mutual interests 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.

B. *Public 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 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 State of Pennsylvania, one was submitted by NEI, and one was submitted by the Union of Concerned Scientists on behalf of several NGOs. A detailed discussion of the public comments and the Commission’s responses is contained in a separate document (see Section IX, “Availability of Documents,” of this document). The NRC also received comments on

issues that are outside the scope of this proposed rule and on regulatory provisions that are not proposed to be revised in this proposed rule. The NRC determined that these comments did not support changing the scope of the proposed rule.

IV. Specific Request for Comments

In addition to the general invitation to submit comments on the proposed rule, the NRC also requests comments on the following questions:

1. *Inclusion of National Incident Management System/Incident Command System in EP programs.* The NRC is considering the need to integrate the National Incident Management System (NIMS) and more specifically, the Incident Command System (ICS), into licensee EP programs. On February 28, 2003, President Bush issued Homeland Security Presidential Directive-5 (HSPD-5), which directed DHS to develop and administer a NIMS. NIMS/ICS provides a consistent nationwide template to enable all government, private-sector, and NGOs to work together during domestic incidents. HSPD-5 requires Federal departments and agencies to make the adoption of NIMS by State and local organizations a condition for Federal preparedness assistance. Non-government entities, such as nuclear power plant licensees, are not required to adopt NIMS. More information about NIMS and ICS may be found at http://www.fema.gov/emergency/nims/index.shtm.

The NRC has observed coordination challenges during hostile action drills and observed discussions in some of the focus groups discussing the FEMA REP Program Manual with respect to the use of the ICS between onsite and offsite responders. It is likely that these issues will be addressed through lessons learned in drills and other training, but consistency across all nuclear plant sites may be an issue. The NRC is seeking comments on whether the NRC should issue regulations requiring that licensees train responders and implement the ICS to improve interface with offsite response organizations.

2. *Shift staffing and augmentation*. Licensees are required by current § 50.47(b)(2) and

Appendix E to Part 50 to maintain an ERO comprising both an on-shift emergency organization and an organization capable of augmenting the shift in a timely manner. However, the regulations state that this shift staffing for emergency response must be “adequate” without providing a definition of “adequate” and are silent with regard to what constitutes a timely augmentation. NUREG-0654 defines the measure of adequacy and divides the ERO augmentation into 30-minute and 60-minute responders. However, the guidance is not succinct, resulting in inconsistencies in ERO shift staffing and augmentation strategies among nuclear power reactor licensees.

In SECY-06-0200, the NRC staff identified shift staffing as an area of concern, noting the challenge in evaluating the adequacy of licensee shift staffing because of the lack of clarity regarding the functional requirements for emergency response. To address this issue, the NRC considered a revision to its regulations to establish functional requirements for the emergency responders instead of focusing on specific emergency responder positions. The NRC also realized that the functional requirements may be dependant upon site- and scenario-specific parameters. Consequently, the NRC attempted to design a performance-based system for identifying shift staffing needs and intended to include it in the development of a broader EP performance-based regulatory regimen. As a result, the shift staffing element was no longer considered in this rulemaking effort.

However, some stakeholders continue to express concern regarding emergency response organization staffing. The NRC recognizes that there is merit in enhancing the regulations to provide clear direction regarding adequate staffing, such as achieving regulatory stability through industry consistency and accommodating technological advancements. Toward that end, the NRC requests comments on whether the NRC should enhance its current regulations to be more explicit in the number of ERO staff necessary for nuclear power plant emergencies. When responding to this question, please consider the following draft staffing

table. The table provides proposed staff functions and minimum staffing levels for the on-shift and augmenting emergency response organization. The table modifies the original guidance of NUREG-0654, Table B-1 with lessons learned from several years of EP program inspections by the NRC.

On Shift[1]	**Augment w/in 60-min**[1]	**Augment w/in 90-min**[1, 2]
Emergency Director (1) (Shift Manager) • Responsible for overall ERO Command & Control until relieved. • Responsible for approving event classifications and PARs until relieved.	Emergency Director (1) (TSC) • Responsible for overall ERO Command & Control until relieved. • Responsible for approving event classifications and PARs until relieved.	Emergency Director (1) (EOF) • Responsible for overall ERO Command & Control. • Responsible for approving PARs.
Communicator (1) • Responsible for communicating event classifications and PARs to offsite agencies, including the NRC.	Communicator (1) (TSC) *[In addition to the one already on-shift]* • Assume responsibility for either ORO or NRC communications from on-shift Communicator.	Communicator (1) (EOF) • Assumes responsibility for communicating PARs, as well as plant updates, to the NRC (HPN).

On Shift[1]	**Augment w/in 60-min**[1]	**Augment w/in 90-min**[1, 2]
Qualified Health Physics Personnel (2)[3] • Responsible for providing Health Physics coverage to the on-shift staff.	Site Radiation Protection Coordinator (SRPC) (TSC) (1) • Responsible for evaluating and assessing plant and offsite data in the development of onsite protective actions and offsite PARs. • Responsible for recommending onsite and offsite PARs to the Emergency Director. • Responsible for all Radiation Protection activities, including Field Team direction.	Site Radiation Protection Director (SRPD) (EOF) (1) • Responsible for evaluating and assessing plant and offsite data in the development of offsite PARs. • Responsible for recommending offsite PARs to the Emergency Director. • Responsible for Field Team direction.
Dose Projections (1) • Responsible for providing dose projections to the Emergency Director for PAR determinations, until relieved.	Additional Qualified Health Physics Technicians *[In addition to the personnel already on-shift]* (OSC) • (4) Responsible for providing Health Physics coverage for OSC personnel in the plant. • (2) Responsible for plant surveys. • (1) Responsible for controlling dosimetry issuance and maintaining plant access control for radiologically controlled areas.	Additional Qualified Health Physics Technicians *[In addition to the personnel already on-site]* (OSC) • (2) Responsible for providing health physics support for the emergency response organization..

On Shift[1]	**Augment w/in 60-min**[1]	**Augment w/in 90-min**[1, 2]
EAL/PAR classifications (1)[4] • Responsible for evaluating plant conditions and dose projections and recommending event classifications and PARs to the Emergency Director, until relieved.	Dose Projections (1) (TSC) • Responsible for providing dose projections to the SRPC for PAR determinations.	Dose Projections (1) (EOF) • Responsible for providing dose projections to the SRPD for PAR determinations.
Core/Thermal Hydraulics Eng (1)[4] • Responsible for evaluating reactor conditions and providing input to the Emergency Director until relieved.	Event Classifications (1) (TSC) • Responsible for evaluating plant conditions and recommending event classifications to the Emergency Director.	Off-Site Field Team B • (1) Qualified Radiation Monitor responsible for assessing environ radiation/contamination and providing input to SRPC. Also responsible for providing Health Physics coverage for team. • (1) Driver responsible for transportation.

On Shift[1]	**Augment w/in 60-min**[1]	**Augment w/in 90-min**[1, 2]
Fire Brigade as Defined by Tech Specs The Fire Brigade is controlled by the site-specific Technical Specifications.	Core/Thermal Hydraulics/PRA Engineer (TSC) (1) • Responsible for evaluating reactor conditions and providing input to the Emergency Director. • Responsible for evaluating plant system status and providing PRA input to the Emergency Director.	OSC Supervisors (4) • (1) Electrical: Responsible for supervising OSC activities related to electrical equipment. • (1) Mechanical: Responsible for supervising OSC activities related to mechanical equipment. • (1) I&C: Responsible for supervising OSC activities related to IC equipment. • (1) HP: Responsible for supervising OSC activities related to radiation protection.

On Shift[1]	**Augment w/in 60-min**[1]	**Augment w/in 90-min**[1, 2]
Ops Crew as Defined by Tech Specs Number of Operators on-shift is controlled by the site-specific Technical Specifications.	Maintenance (OSC) (1 electrician, 1 mechanic; 1 IC) • (1) Electrician: Responsible for providing electrical support for ECCS equipment, event mitigation, and equipment repair. • (1) Mechanic: Responsible for providing mechanical support for ECCS equipment, event mitigation, and equipment repair. • (1) I&C Technician: Responsible for providing assist with logic manipulation, for providing I&C support for event mitigation and equipment repair, and for support of digital I&C if applicable.	IT Lead (TSC) (1) • For sites with digital I&C: Responsible for assisting in ensuring that the digital I&C equipment operates properly.
	On-Site Field Team (1 qualified radiation monitor and 1 driver) • (1) Radiation Monitor responsible for assessing environ radiation/contamination and providing input to SRPC. Also responsible for providing Health Physics coverage for team. • (1) Driver responsible for transportation.	Joint Information Center Manager (JIC): • (1) Responsible for managing and coordinating media information related to the event.

On Shift[1]	**Augment w/in 60-min**[1]	**Augment w/in 90-min**[1, 2]
	Off-Site Field Team A • (1) Qualified Radiation Monitor responsible for assessing environmental radiation/contamination and providing input to SRPC. Also responsible for providing Health Physics coverage for team. • (1) Driver responsible for transportation.	
	TSC Engineering • (1) Electrical/I&C: Responsible for providing engineering coverage for the ERO related to electrical or I&C equipment. 1. (1) Mechanical: Responsible for providing engineering coverage for the ERO related to mechanical equipment.	
	Lead OSC Supervisor (1) • Responsible for OSC activities as directed by Emergency Director.	

On Shift[1]	**Augment w/in 60-min**[1]	**Augment w/in 90-min**[1, 2]
	Security Supervisor (TSC) (1) • Responsible for coordinating security-related activities and information with the Emergency Director.	

Notes:

1. No collateral duties are assigned to an individual that are beyond the capability of that individual to perform at any given time.

2. Specified TSC/OSC personnel must be performing their required functions within 60 (90) minutes of an Alert or higher event classification. Specified EOF/JIC personnel must be performing their required functions within 90 minutes of a Site Area Emergency or higher event classification.

3. Two qualified Health Physics personnel for a single unit site, or one per unit for a multi-unit site.

4. Could be the STA if justification for collateral duties supports additional responsibilities.

3. *Expanding to non-power reactor licensees a requirement for detailed analyses demonstrating timely performance of emergency response functions by on-shift personnel.* The NRC is proposing to require nuclear power reactor licensees to demonstrate through detailed analyses that on-shift personnel can perform all assigned emergency plan implementation functions without having competing responsibilities that could prevent them from performing their emergency plan functions. The NRC is seeking comments on 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.

4. *Expanding to non-power reactor licensees a requirement for the capability to assess, classify, and declare an emergency condition within 15 minutes.* The NRC proposes to require nuclear power reactor licensees to establish and maintain the capability to assess, classify, and declare an emergency condition promptly within 15 minutes after the availability of indications to plant operators that an EAL has been, or may be, exceeded. The NRC is considering whether it is necessary to add the 15-minute criterion for non-power reactor licensees. The NRC is seeking comments on whether to issue regulations requiring that non-power reactor licensees establish and maintain the capability to assess, classify, and declare an emergency condition promptly within 15 minutes after the availability of indications to reactor operators that an EAL has been, or may be, exceeded.

5. *Expanding to non-power reactor licensees a requirement for hostile action event EALs.* The NRC is proposing that EALs for nuclear power plants must address hostile action events. The proposed rule regarding EALs would not apply to non-power reactors because the EALs for these reactors are generally based on projected or actual offsite dose and not an initiating event. However, hostile action directed toward a non-power reactor is an initiating

event that could conceivably cause an offsite dose. The NRC is seeking comments on whether the NRC should issue regulations requiring that non-power reactor licensees include hostile action event EALs in their emergency plans.

6. *Effective date.* As proposed, the effective date of this rule would be 30 days after publication of the final rule in the *Federal Register*, with an option for a licensee or applicant to defer implementation until 180 days after publication of the final rule in the *Federal Register* (with certain exceptions). The NRC is concerned that combined license (COL) and early site permit (ESP) applicants would need to submit timely revisions to docketed applications, to avoid schedule impacts to application reviews, in order to comply with the proposed amendments should they become final before the staff's licensing review is complete. The NRC is seeking comments on 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.

7. *Implementation Schedule*. As proposed, each element of the proposed rule would be implemented on a schedule that may vary from approximately 30 days to 3 years. The wide variance in the proposed implementation schedule is a result of the varying degree of difficulty and scheduling problems for some elements including the need for analysis, development of processes, procurement of equipment/facilities, and/or coordination with offsite response organizations. The NRC is concerned that the proposed implementation schedule may not be appropriate for some offsite response organizations and licensees. The NRC is seeking comments regarding the appropriateness of the proposed implementation schedule.

V. Section-by-Section Analysis

The Commission is proposing to amend 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."

Section 50.47 Emergency plans

The NRC is proposing to amend § 50.47(b)(3) to remove the reference to the EOF as a "near-site" facility. Criteria would be provided 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 consolidated EOFs, specifying that these facilities would 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 proposed changes to Appendix E, Section IV.E.8.

The NRC is proposing to amend § 50.47(b)(10) to require licensees to review and update their ETEs periodically and submit them to the NRC for review and approval. Proposed changes to Appendix E to Part 50 would provide the required frequency and details of the ETE updates and submissions. Although requirements for ETEs are found in both § 50.47(b) and in Appendix E to Part 50, the level of detail between them greatly differs. Section 50.47(b) establishes the EP planning standards that licensees must meet, whereas Appendix E sets forth more detailed implementation requirements.

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

The NRC is proposing to amend § 50.47(d)(1) to remove the reference to the EOF as a

"near-site" facility. Criteria would be provided 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 consolidated EOFs, specifying that these facilities would 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 proposed changes to Appendix E, Section IV.E.8.

Section 50.54 Conditions of licenses

The NRC proposes to revise the current § 50.54(q) in its entirety. Proposed § 50.54(q)(1) would define four terms whose meanings would be limited to application within the proposed § 50.54(q). Proposed § 50.54(q)(1)(i) would define a "change" to the emergency plan as an action that results in modification or addition to, or removal from, the licensee's emergency plan or the resources, capabilities, and methods identified in the emergency plan. Thus, a change to the emergency plan would not be limited to revisions to the document labeled "emergency plan." For example, a proposed plant configuration change that removes a seismic instrument relied upon in the emergency plan as an EAL threshold would be encompassed by this definition. The last sentence in this definition calls attention to the possibility that other regulatory change processes may be applicable. In the example above, the plant configuration change would likely be subject to the requirements of § 50.59 and a technical specification change may also be involved.

The proposed § 50.54(q)(1)(ii) definition of "Emergency plan" would encompass any document that describes the programmatic methods that the licensee uses to maintain and perform emergency planning functions and to demonstrate compliance with the requirements of current Appendix E, and for nuclear power reactors, the planning standards of current § 50.47(b). Under the proposed § 50.54(q), sub-tier documents, such as emergency plan implementing procedures, would not ordinarily be 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. This would be consistent with the current § 50.54(q) requirements. However, if a license were to relocate a programmatic description to another document, that description would remain subject to the proposed § 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 proposed § 50.54(q) change process. The definition would also emphasize, 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 over time will constitute a reduction in effectiveness of the original approved emergency plan.

Proposed § 50.54(q)(1)(iii) would define the term "emergency planning function" in terms of a capability or resource necessary to prepare for and respond to a radiological emergency. The specific emergency planning functions would be established in regulatory guidance and would be developed by paraphrasing the applicable broadly-worded regulatory requirements of Appendix E and, for nuclear power reactor licensees, the planning standards of § 50.47(b) to a series of functions that the NRC considers essential to complying with those requirements. The emergency planning functions would not replace or supplement the regulations upon which they would be based and as such, compliance with these provisions would not be required. They would be only used to differentiate between changes that the licensee would be allowed to make without prior NRC approval and those that would require prior NRC approval. The NRC would not establish these emergency planning functions in regulations because the underlying regulations already exist, and the expression of the emergency planning functions would differ between nuclear power reactors, non-power reactors, and fuel facilities licensed under Parts 50 or 52.

Proposed § 50.54(q)(1)(iv) would define 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" would be an evaluation concept that would be used in proposed § 50.54(q) to differentiate between changes that the licensee would be allowed to make without prior NRC approval and those that would 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. "Radiological emergency" as used in the proposed § 50.54(q)(1)(iv), would mean any condition that would result in the declaration of any emergency classification level and the implementation of the licensee's emergency plan. A nuclear power reactor licensee evaluating whether a particular emergency plan change would constitute a reduction in effectiveness would be 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 would base their evaluations on the planning bases for their respective facilities.

Current 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) would be required by proposed § 50.54(q)(2) to follow and maintain the effectiveness of its emergency plan, as originally approved. The proposed § 50.54(q)(2) references to Appendix E and § 50.47(b), as applicable, would extend the applicability of these requirements as a condition of the facility license (as does the language in current § 50.54(q)). The NRC would expect licensees to identify conditions and situations which could reduce the effectiveness of its

emergency plan, and to take corrective and/or compensatory actions to restore and maintain the

requisite effectiveness.

Proposed § 50.54(q)(3) would grant 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). The reference to Appendix E and § 50.47(b), as applicable, in this paragraph, would serve to exclude any change for which the licensee must request an exemption from requirements under § 50.12.

The NRC would expect 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 would need 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.).

Proposed § 50.54(q)(4) would define the process by which a licensee would request prior approval of a change to the emergency plan that the licensee has determined constitutes a reduction in effectiveness of the plan. Licensees pursuing these changes would be required to apply for an amendment to the license as provided in § 50.90. Expressly providing that licensees would use § 50.90 to seek NRC approval of a proposed change that would reduce the effectiveness of an emergency plan would clarify the process to be used for these proposals. In addition to satisfying the filing requirements for a license amendment request in § 50.90 and § 50.91, the proposed § 50.54(q)(4) request would 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 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 would review the amendment application to make its no significant hazards consideration determination and to determine if 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).

Proposed § 50.54(q)(5) would apply to all licensees subject to § 50.54(q) and require that licensees retain a record of all changes to the emergency plans made without prior NRC approval for a period of three years from the date of change. The section would also require the licensee to submit, as specified under § 50.4, a report of each such change, including its evaluation, within 30 days of the change. The NRC expects that the record of changes would include documentation of the evaluation that determined the change not to be a reduction in effectiveness. The NRC would use this record of changes during inspection oversight of the licensee's implementation of proposed § 50.54(q)(2).

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

The NRC proposes to remove paragraph (r) of § 50.54. The current § 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.

The NRC proposes to amend § 50.54 by revising current § 50.54(s)(1) to remove language addressing a one-time requirement that has now been completed. The current § 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 (November 3, 1980) of the rule, 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. The current § 50.54(s)(1) continued to further establish the size of the two EPZs.

The NRC proposes to remove paragraph (s)(2)(i) from § 50.54. The current § 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 what is the current § 50.54(s)(2)(i) requires 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.

The NRC proposes to remove paragraph (u) from § 50.54. The current § 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 (November 3, 1980) of the rule.

The NRC is proposing to amend § 50.54(gg)(1)(i) to remove the reference to the EOF as a “near-site” facility. Criteria would be provided 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 consolidated EOFs, specifying that these facilities would 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 proposed changes to Appendix E, Section IV.E.8.

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

The NRC is proposing to amend several paragraphs within Section IV. of Appendix E to Part 50 that would apply to licensees and applicants for licenses under Part 50 or Part 52 of this chapter, as applicable. The NRC would amend the first paragraph of Section IV. by adding language to require nuclear power reactor licensees and license applicants to revise their ETEs when the decennial census data is available. The proposed regulation would require that within 180 days of the issuance of the 2010 decennial census data (expected to be available in 2011), ETE revisions be submitted to the NRC under § 50.4 for review and approval. The NRC would establish a schedule for review and approval of the updated ETEs. Thereafter, nuclear power reactor licensees and license applicants would be required to review changes in the population of their EPZ and most populous Emergency Response Planning Area (ERPA). ERPAs are local areas, typically defined by geographic or political boundaries that are used to communicate protective actions to members of the public in familiar geographic terms. Also, when the new population, including permanent residents and transient populations, in either of the EPZ or ERPA would be less than 90 percent or greater than 110 percent of the population that formed the basis for the currently approved ETE, the licensee or applicant would be required to update the ETE to reflect the impact of this population change. The licensee or applicant would be required to submit the updated ETE to the NRC under the procedures of § 50.4 within 180 days of the availability of the population data used in the update.

The NRC proposes to require licensees and applicants to review changes in the population of the EPZ and the most populous ERPA because population density in an EPZ is generally not homogeneous and EPZ evacuation times are significantly influenced by the ERPA with the largest population The NRC considered requiring review of all ERPAs or the review of individual counties and States in addition to the whole EPZ. Review of the ERPA with the

largest population was considered to be a reasonable balance between the burden on licensees and applicants and the need to ensure that the ETE is accurate because the ERPA with the largest population is generally the one with the most impact on evacuation times.

The proposed requirement for nuclear power reactor licensees to evaluate a population change impact on the ETE during the period between decennial censuses would balance the burden on licensees and the expected rates of change among the relevant populations. 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 review would consist of analysis of population growth based on either U.S. Census Bureau data (e.g., Subcounty Population Datasets for population estimates) or State/local government estimates and would examine the whole EPZ as well as the most populous emergency planning area within the EPZ. If an ETE revision were necessary, it would be submitted to the NRC under the provisions of § 50.4 for review and approval. The NRC would review the ETEs to ensure they were consistent with NRC guidance on the development of ETEs that would be expected to be issued with the final rule.

The updated ETEs would allow for more effective development of public protective action strategies and review of evacuation planning. Sites with little population change would be minimally impacted by the proposed requirement, while those sites with a greater rate of population change would be required to perform more frequent updates. Licensees would also

be expected to identify and analyze potential enhancements to improve evacuation times and document whether implementation was appropriate.

The NRC is also proposing to revise the 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 in this paragraph that the requirements for the submittal of emergency response plans apply to not only applicants for nuclear power reactor operating license applicants 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, dated August 28, 2007).

The NRC is proposing to make two editorial revisions to Appendix E to Part 50, Section IV.A.2. One change would be to include the abbreviation of emergency response organization, "ERO," in paragraph 2 of Section IV.A. The second revision would clarify that paragraph 2.c. should read as follows: "Authorities, responsibilities, and duties of an onsite emergency coordinator…."

The NRC is proposing to amend Part 50, Appendix E, Section IV.A.7., to require licensees to confirm that ORO resources, such as local law enforcement, firefighting, and medical services, are available to respond to an emergency, including a hostile action event, at the plant site. Currently, the regulations do not explicitly require the licensee to take action to ensure that OROs are capable of adequately responding to the site during a hostile action event. This new requirement would require licensee coordination with the OROs to ensure that licensees and OROs are able to effectively implement their pre-planned actions for any contingency, including hostile action events as required by Order EA-02-026. This requirement would be enforced through routine inspection and observation of emergency exercises.

The proposed requirement would also contain a new footnote, which would define "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.

The NRC is proposing to add a new paragraph A.9. in Section IV. of Appendix E to Part 50. This new paragraph would require all nuclear power plant licensees under this part and Part 52 to provide 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. This proposed amendment would constitute a new requirement. The proposed rule would not specify, by position or function, which responsibilities must be assigned, but would allow licensees the flexibility to determine the limit of assigned responsibilities for effective emergency plan implementation on a site-specific basis. This would allow licensees to take credit for new technologies that could potentially affect the number of on-shift staff that would be needed. However, licensees would need to ensure that the duties assigned to on-shift staff were reasonable for one person to perform and would not be so burdensome as to negatively impact emergency response.

The licensees would have to perform a job task analysis (JTA) and/or a time motion study 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 would expect the JTA to identify all the tasks which must be performed by available staff during an evolution such as response to an emergency.

Licensees would first need to identify the spectrum of accidents defined in their licensing bases (i.e., design basis accidents (DBAs), as well as the DBT, as applicable), for which there must be emergency planning. The JTA would identify all tasks which must be completed for each DBA and the DBT, as applicable, and the responders responsible for the performance of those tasks. Then licensees would ensure that there would be 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 would not detract from adequate emergency plan implementation would establish a regulatory framework that more clearly codifies the NRC's shift staffing expectations for effective emergency response.

The NRC proposes to amend Section IV.B. of Appendix E to Part 50 to add a requirement that nuclear power reactor licensees and license applicants would take hostile action events, which may adversely affect the plant (e.g., cause personnel harm and/or equipment damage), into account in their EAL schemes. It would also serve to establish consistent EALs for hostile action events among existing and future nuclear power reactor licensees and allow the licensees to make hostile action emergency declarations based on a credible future threat.

The proposed language would also make changes to conform to proposed changes to § 50.54(q), which address the issue described in Section II.B.5 of this document. The current requirement in paragraph (1) in Section IV.B. of Appendix E that licensees obtain prior NRC approval via § 50.4 for changes to an EAL scheme from NUREG-0654 to one based on NUMARC/NESP-007 or NEI-99-01 would be retained but the paragraph numbering would be removed. Paragraphs (2) and (3) would be deleted and replaced with a new requirement that all other EAL changes would be required to be made under the proposed amended § 50.54(q) change process, as discussed earlier in Section V of this document. The two remaining paragraphs in this section would be designated B.1. and B.2.

The NRC proposes to retain the existing language of Section IV.C. of Appendix E to Part 50, redesignate that language as paragraph C.1., and add a new paragraph C.2. The proposed paragraph C.2., which would address the issue of emergency classification timeliness, would require that all nuclear power plant licensees and applicants under this part and Part 52

have and maintain the capability to promptly 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, or may be, exceeded. The NRC believes that the amended language would emphasize the NRC's expectations regarding emergency classification timeliness while retaining sufficient operational flexibility to respond to extenuating circumstances necessary to protect public health and safety. The NRC would consider the 15-minute criterion to commence when plant instrumentation, plant alarms, computer displays, or incoming verbal reports become available to cognizant personnel within the control room, or in another emergency facility in which emergency classifications are performed.

This classification period would end as soon as the licensee determines that an EAL has been, or would be, exceeded and that an emergency declaration is made. If the EAL threshold specifies a duration (e.g., "fire lasting for greater than 10 minutes from detection"), the NRC would expect the licensee to perform assessment and classification efforts concurrently with the specified condition duration. The licensee would be expected to declare the emergency condition promptly as soon as the specified duration has been exceeded, or after it has been determined that the condition cannot be corrected before the duration has been exceeded, whichever occurs first. Because the NRC would expect emergency classifications to be made promptly, the proposed 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.

The NRC is proposing a capability criterion, rather than an inflexible performance criterion, to allow licensees some degree of flexibility in addressing extenuating circumstances that may arise during an actual emergency. For example, an emergency classification may need to be delayed in the interest of performing plant operations that are urgently needed to protect public health and safety. These delays would 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.

The NRC is proposing to add language to Section IV.D.3. of Appendix E to require licensees and applicants to have backup ANS methods for both the alert and notification functions without specifying which backup measures should be used. This approach would allow flexibility in the selection of the method best suited for each site and would also allow the use of newer technologies or other alternative methods. Available backup ANS methods would enhance the public's ability to be promptly alerted of an event at a facility and of possible protective actions.

Section IV.D.3. of Appendix E currently acknowledges that, for the events more likely to warrant use of the 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 proposed amendment would not impose specific time requirements for using a backup method. The alerting function could 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 could involve the designation of multiple EAS broadcast stations or use of weather alert radios or newer technologies, such as advanced messaging systems. Guidance would be provided 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 would also be provided to licensees and offsite officials regarding the need to ensure that the

backup methods could alert and notify the public in the entire plume exposure pathway EPZ, that the personnel and resources required to implement the backup methods would be available during any type of emergency (including hostile action events), and that designated personnel know how to implement backup methods.

The NRC recognizes some backup methods would not be capable of meeting the timeframes that are part of the primary ANS design objectives. The intent of the proposed amendment would not be to have a duplicate primary ANS, but to have a means of backup alerting and notification in place so the public could 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 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 would be acceptable for backup methods. Guidance would be provided 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 would need to be identified, incorporated into the site's ANS design, and submitted for FEMA approval as specified in FEMA-REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants." For nuclear power plant sites that already have provisions for ANS backup means in FEMA-approved ANS designs, licensees and offsite officials would need to confirm that the backup methods meet the proposed requirements and submit revised ANS designs for FEMA approval if changes were deemed necessary. Timeframes for submitting and approving ANS designs, along with implementation of the backup methods, could vary considerably depending on the level of ANS backup measures already in place. Therefore, backup methods must be ready for demonstration no later than its first biennial exercise conducted more than one year after the effective date of the rule, which would result in a maximum of approximately 3 years for implementation across the industry.

Additional changes to Appendix E, Section IV.D.3. are being proposed to update language regarding demonstration of ANS capabilities and correction of deficiencies that still refer to the February 1, 1982, date for compliance to ensure applicability to any new reactors. Instead, 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 current and proposed § 50.54(s)(2). However, the requirement for correction of ANS deficiencies is clearly stated in current and proposed § 50.54(s)(2)(ii) and does not need to be repeated in Part 50, Appendix E, Section IV.D.3.

The NRC is also proposing to add language to Section IV.D.3. of Appendix E to require all licensees under this part and Part 52 to implement the requirements under proposed Part 50, Appendix E, Section IV.D.3 no later than its first biennial exercise conducted more than one year after the effective date of the rule.

Note that no changes are proposed to the basic requirement in § 50.47(b)(5) for nuclear power plant licensees or applicants to ensure that the means to provide early notification and clear instruction 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 notification.

The NRC is also proposing to revise Section IV.E.5. of Appendix E to change the term “radiation” to “radiological,” to provide consistent use of the phrase “radiological emergency;” and the existing language of Appendix E, Section IV.E.8. to redesignate the revised language as Section IV.E.8.a.; and add new Sections IV.E.8.b., E.8.c, E.8.d., and E.8.e.

Proposed Section IV.E.8.a. would remove the reference to the EOF as a “near-site” facility and add the requirement that all nuclear power plant licensees and applicants under this

part and Part 52 must provide an OSC. In a conforming change, § 52.79(a)(17) would be revised to make it clear that combined license applications would not be subject to the TMI action requirements in § 50.34(f)(2)(xxv), which address the need for an onsite TSC, an onsite OSC, and for an EOF. Instead, the requirements governing the need for such facilities in Part 50, Appendix E, Section E.8.a(i) would apply to combined license applications.

Proposed Section IV.E.8.b. would incorporate EOF distance criteria currently found in NRC guidance and specify 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 the 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 would be determined by the straight-line distance from the site's TSC to the EOF, which would be consistent with the approach described in NUREG-0696, Table 2, "Relation of EOF Location to Habitability Criteria." An exception to the 25-mile limit would be made for a consolidated 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 consolidated EOF to another facility closer to the nuclear power plant site. Suitable space near the site would 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.

Proposed Section IV.E.8.c. would provide performance-based criteria applicable to consolidated EOFs. The additional functions that a consolidated EOF would have to address include the capability to obtain and display plant data and radiological information for each plant that the facility serves. A consolidated facility would also need to be capable of effectively responding 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 would also enhance effective response to events occurring at more than one site. In some cases, a consolidated EOF could serve 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 would need to be capable of understanding plant conditions for each type of reactor and translating technical information into a useful form for offsite officials and media relations staff.

By codifying EOF distance requirements in Section IV.E.8.b. of Appendix E and providing specific criteria for consolidated EOFs in Section IV.E.8.c., the proposed language would obviate the need for licensees to seek NRC approval at either the staff or Commission level to consolidate EOFs meeting certain performance-based requirements. Licensees could then implement a consolidated facility as part of their emergency response plans under the provisions of § 50.54(q) without prior NRC approval. The proposed language would also address 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, the consolidated EOFs that have been previously approved by the NRC have functioned as effective emergency response facilities and demonstrated that a near-site consolidated EOF is not necessary to adequately protect public health and safety. Situations in which a licensee proposes to locate an EOF for a single site, or different licensees propose to share an EOF that is separately staffed and operated by each licensee (i.e., a co-located EOF), more than 25 miles from the site(s) would continue to require prior NRC approval. Additional criteria regarding EOF habitability, size, staffing, and other characteristics would remain as guidance.

Although not included in the proposed rule language of Sections IV.E.8.b. or 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 contact is particularly important when a licensee or applicant intends to use a consolidated facility 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 the nuclear power plant).

Proposed Section IV.E.8.d. would require all nuclear power plant licensees and applicants under this part and Part 52, to identify alternative facilities to function as staging areas for augmentation of ERO staff during hostile action events to minimize delays in emergency response and provide for a swift coordinated augmented response. This alternative facility would be required to have the capability to provide for, and the ERO that operates from it would be capable of, offsite notifications, accident analysis, damage mitigation, and engineering assessment activities, including response team planning and preparation. The alternative facility should be equipped with the minimum essential communications and response equipment to ensure that the ERO is aware of conditions at the site and prepared to return when personnel are allowed to re-enter the site. This would enable rapid staffing of onsite emergency response facilities and implementation of mitigation actions when ERO personnel enter the protected area.

The NRC also proposes to add a new Section IV.E.8.e. to permit an existing nuclear power reactor licensee, that, on the day the final rule becomes effective, has an approved EOF that serves only one nuclear power reactor site, but is located more than 25 miles from that 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 to have an EOF more than 25 miles from that nuclear power reactor site.

The NRC is proposing to amend Sections IV.E.9.c. and E.9.d. to remove references to the EOF as a “near-site” facility. Criteria would be 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 consolidated EOFs. The criteria would specify that these facilities would 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 proposed changes to Section IV.E.8 of Appendix E.

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

The NRC proposes to add a new requirement to Section IV.F.2.a. to require licensees to submit, for NRC review and approval, exercises scenarios for full participation exercises required by current Appendix E, Section IV.F.2.a. This proposed requirement would enable the NRC to ensure that licensee exercise scenarios implement the proposed requirements of Sections IV.F.2.i. and IV.F.2.j. of Appendix E, including hostile action events and a variety of challenges to reduce preconditioning of respondents. The NRC also proposes to insert the word “initial” in paragraph F.2.a. to distinguish between the requirements of paragraphs F.2.a. and F.2.b.

The NRC is proposing to revise 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 nuclear plant EP is with FEMA. FEMA has requested that “FEMA” be used rather than “DHS” for clarity of communication with stakeholders.

The NRC proposes to add a new requirement to Section IV.F.2.b. to require licensees to submit, for NRC review and approval, scenarios for their onsite biennial exercises. This proposed requirement would enable the NRC to ensure licensee exercise scenarios implement the proposed requirements of Appendix E, Sections IV.F.2.i. and IV.F.2.j., including hostile action events and a variety of challenges to reduce preconditioning of respondents. The NRC also proposes to insert the word “subsequent” in paragraph F.2.b. to distinguish between the requirements of paragraphs F.2.a. and F.2.b.

The NRC proposes to amend 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 also proposes to change “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 proposing to amend Section IV.F.2.f. to add a second situation when remedial exercises would be required. The proposed amendment would explain that remedial exercises would be required if the emergency plan is not satisfactorily tested during the biennial exercise, such that the NRC, in consultation with FEMA, could not find reasonable assurance that adequate protective measures could be taken in response to an emergency or determine that key ERO skills had been maintained. This change would demonstrate 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 proposed rule change is intended to prevent this trend in the future.

The NRC also proposes to revise Section IV.F.2.g. to require licensees to correct any weaknesses or deficiencies identified during training evolutions, exercises, or drills. This change

would explicitly state the regulatory intent that training evolutions, drills, and exercises are included in the requirement for critique and correction of weaknesses or deficiencies.

The NRC is proposing to add a new Section IV.F.2.i. to Appendix E to require all nuclear power plant licensees under this part and Part 52 to include hostile action events in biennial evaluated exercises. The proposed rule would also ensure that scenarios would be sufficiently varied by requiring the use of a wide spectrum of radiological releases and events, to properly train responders in response to more realistic events than currently used in training and avoid preconditioning the responders to success with inappropriate anticipatory responses. Licensees would also be 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 would require offsite response.

The NRC is proposing to add a new Section IV.F.2.j. to Appendix E, to provide the exercise scenario elements that all nuclear power plant licensees under this part and Part 52 would be required to include in each of their exercise planning cycles, including hostile action directed at the plant site; in-plant repairs that, if properly implemented, would mitigate core damage or mitigate/prevent containment failure when the plant is not fully secured from hostile action; no radiological release or a minimal radiological release that does not require public protective actions; an initial classification of or rapid escalation to a Site Area or General Emergency; implementation of mitigative strategies to respond to the loss of large areas of the plant under § 50.54(hh); and other elements that vary exercise challenges and avoid participant preconditioning or anticipatory responses. This proposed amendment would prescribe the minimum exercise scenario elements necessary for licensees to meet NRC expectations for challenging and varied scenario content in biennial exercises.

The NRC is proposing to add a new Section IV.F.2.k. to Appendix E, to require all licensees under this part to implement the requirements under proposed Part 50, Appendix E,

Section IV.F.2. no later than its first biennial exercise conducted more than one year after the final rule is published in the Federal Register.

The NRC proposes to add a new Section IV.I. to Appendix E that would require all nuclear power plant licensees under this part and Part 52 to provide an expanded range of protective measures for all onsite personnel that would be appropriate for protection against a hostile action event. These measures would be site-specific and consider issues such as the location of workers in relation to potential targets, which would dictate if sheltering and/or evacuation would be appropriate to adequately protect the workers. The new requirement would not direct any specific actions but would allow licensees flexibility to determine the most effective protective measures for onsite personnel protection on a site-specific basis. It also would allow licensees to take advantage of new technologies or other innovations that could further enhance the protection of workers.

If this proposed rule becomes final, the NRC proposes to make it effective 30 days after publication of the final rule in the Federal Register. Licensees and applicants, as applicable, 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 proposed rule changes:

(1) The requirements under proposed § 50.54(q) (emergency plan change process), which would become effective 30 days after publication of the final rule in the Federal Register;

(2) The requirements under proposed Part 50, Appendix E, Section IV.F.2. (challenging drills and exercises), which each applicable licensee would be required to implement no later than its first biennial exercise conducted more than one year after the effective date of the rule. Also, the implementation schedule for the proposed changes in Appendix E, Section IV.F.2. would allow licensees to complete biennial exercises that would already be in the planning process when the final rule becomes effective, without having to consider the new requirements of the final rule. This schedule also would have the general effect of allowing exercises which

meet the new requirements to be conducted over a two-year period, following the effective date of the final rule, thereby allowing licensees and the NRC to gain experience during initial implementation. Consideration will be given to States with multiple reactor sites for the implementation schedule of the exercise requirement under Appendix E, Section IV.F.2.; and

(3) The requirements under proposed Part 50, Appendix E, Section IV.D.3. (backup means for alert and notification systems), which each applicable licensee would be required to implement no later than its first biennial exercise conducted more than one year after the effective date of the rule. The implementation schedule for the proposed changes in Appendix E, Section IV.D.3 would provide licensees a maximum of approximately 3 years for implementation across the industry.

VI. Guidance

The NRC proposes to revise existing guidance and provide new guidance for the new requirements in this proposed rule. This guidance is intended to provide an acceptable method of how licensees and applicants can meet the requirements of the proposed rule. Final guidance would be published concurrently with publication 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 proposing to amend 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 eRulemaking 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)

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

Document	**PDR**	**Web**	**ERR** (ADAMS)
Draft Preliminary Rule Language, Emergency Preparedness Rulemaking, February, 2008	X	X	ML080370069
"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 (January 13, 2003; 68 FR 1643)	X		ML030060360
Order EA-03-039, "Security Personnel Training and Qualification Requirements (Training) Order," issued April 29, 2003 (May 7, 2003; 68 FR 24514)	X		ML030910625
Order EA-03-086, "Revised Design Basis Threat Order," issued April 29, 2003 (May 7, 2003; 68 FR 24517)	X		ML030740002
Federal Register Notice – Final Rule to Amend 10 CFR 73.1: Design Basis Threat (March 19, 2007; 72 FR 12705)	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

Document	**PDR**	**Web**	**ERR** (ADAMS)
NUMARC/NESP-007, Revision 2, "Methodology for Development of Emergency Action Levels," dated January 1992	X		ML041120174
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

Document	**PDR**	**Web**	**ERR** (ADAMS)
IN 85-80, “Timely Declaration of an Emergency Class, Implementation of an Emergency Plan, and Emergency Notifications,” dated October 15, 1985	X		ML031180307
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

Document	**PDR**	**Web**	**ERR** (ADAMS)
Transcripts for August 31, 2005 and September 1, 2005 Portion of the Emergency Preparedness Public Meeting	X		ML052620366
"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	ML082750457
EP proposed rule Environmental Assessment	X	X	ML082750448
EP Paperwork Burden Analysis	X	X	ML082750453
NRC comment responses for EP draft preliminary rule language	X	X	ML082890476

X. Plain Language.

The Presidential memorandum "Plain Language in Government Writing" published on June 10, 1998 (63 FR 31883), directed that the Government's documents be in clear and accessible language. The NRC requests comments on the proposed rule specifically with respect to the clarity and effectiveness of the language used. Comments should be sent to the NRC as explained in the ADDRESSES heading of this document.

XI. 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.

XII. 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, "National Environmental Policy Act; Regulations Implementing Section 102(2)," of 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required.

The determination of this environmental assessment is that there will be no significant offsite impact to the public from this action. However, the general public should note that the NRC is seeking public participation and the environmental assessment is available as indicated in Section IX of this document. Comments on any aspect of the environmental assessment may be submitted to the NRC as indicated under the ADDRESSES heading of this document.

The NRC has sent a copy of the environmental assessment and this proposed rule to every State Liaison Officer and requested their comments on the environmental assessment.

XIII. Paperwork Reduction Act Statement.

The proposed 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*). This rule has been submitted to the Office of Management and Budget for review and approval of the information collection requirements.

Type of submission, new or revision: Revision

The title of the information collection: 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

The form number if applicable: Not applicable

How often the collection is required: One-time, on occasion and annually

Who will be required or asked to report: Operating nuclear power reactors

An estimate of the number of annual responses: 987

The estimated number of annual respondents: 97

An estimate of the total number of hours needed annually to complete the requirement or request: 177,242 hours

Abstract: The U.S. Nuclear Regulatory Commission (NRC) regulations in 10 CFR 50.34, 50.47, 50.54, and 10 CFR Part 50, Appendix E prescribe requirements for emergency preparedness plans and coordination in protecting nuclear power reactors, non-power reactors, and the surrounding community against consequences resulting from accidents and sabotage. The proposed rule contains reporting and recordkeeping requirements, including those for third parties, which are necessary to help ensure that an adequate level of emergency preparedness is attained by nuclear power reactor licensees, non-power reactors, and the surrounding community. This revision addresses changes in information collections contained in the proposed rule, "Emergency Preparedness Rulemaking." Specifically, the draft proposed rule results in changes to information collection requirements in § 50.47, § 50.54, and 10 CFR Part 50, Appendix E.

The NRC is seeking public comment on the potential impact of the information collections contained in this proposed rule and on the following issues:

1. Is the proposed information collection necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?
2. Estimate of burden?
3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

4. How can the burden of the information collection be minimized, including the use of automated collection techniques?

A copy of the OMB clearance package may be viewed free of charge at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Room O-1F21, Rockville, MD 20852. The OMB clearance package and rule are available at the NRC worldwide Web site: http://www.nrc.gov/public-involve/doc-comment/omb/index.html for 60 days after the signature date of this notice.

Send comments on any aspect of these proposed information collections, including suggestions for reducing the burden and on the above issues, by **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]** to the Records and FOIA/Privacy Services Branch (T-5F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-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. Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given to comments received after this date. You may also e-mail comments to Nathan_J._Frey@omb.eop.gov or comment by telephone at (202) 395-7345.

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.

XIV. Regulatory Analysis: Availability.

The Commission has prepared a draft regulatory analysis on this proposed regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The Commission requests public comments on the draft regulatory analysis. Availability of the regulatory analysis is indicated in Section IX of this document. Comments on the draft analysis may be submitted to the NRC as indicated under the ADDRESSES heading.

XV. Regulatory Flexibility Certification.

Under the Regulatory Flexibility Act (5 U.S.C. 605(b)), the Commission certifies that this rule would not, if promulgated, have a significant economic impact on a substantial number of small entities. This proposed 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).

XVI. Backfit Analysis.

As required by 10 CFR 50.109, the Commission has completed a backfit analysis for the proposed rule. The Commission finds that the backfits contained in the proposed rule, when considered in the aggregate, would constitute a substantial increase in emergency preparedness and would be 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.

List of Subjects in 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.

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. 553, the NRC is proposing to adopt the following amendments to 10 CFR Part 50.

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 and must be updated on a periodic basis. Evacuation time estimates and updates must be submitted by applicants and licensees to the NRC for review and approval. 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), (s)(1), and (gg)(1)(i);

b. Remove and reserve paragraphs (r), (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 or the resources, capabilities, and methods identified in the 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 and performing emergency planning functions. An emergency plan includes the plans 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 reactors, 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 which meet 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 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).

(4) The changes to a licensee's emergency plan that reduce the effectiveness of the plans 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 its analysis, within 30 days after the change is made.

(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) Generally, the plume exposure pathway EPZ for nuclear power reactors 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. The exact size and configuration of the EPZs for a

particular nuclear power reactor 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. The plans for the ingestion pathway EPZ shall focus on such actions as are appropriate to protect the food ingestion pathway.

* * * * *

(2)(i) Reserved.

* * * * *

(u) Reserved.

* * * * *

(gg)(1) * * *

(i) 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.

* * * * *

4. In Appendix E to Part 50, Section IV. is amended as follows:

a. Revise the introductory text to the section, paragraphs A., A.2.c., A.7., B.1., B.2., C.1., C.2.,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.f., F.2.g.; and

b. Add new paragraphs A.9., F.2.i., F.2.j., F.2.k.and l., a new footnote 3 to paragraph IV.A.7., designate existing footnotes 2 and 3 as footnotes 4 and 5, and renumber the subsequent footnotes in Section IV as footnote 6 and 7.

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

* * * * *

IV. Content of Emergency Plans

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. The applicant shall also provide an analysis of the time required to evacuate and for taking other protective actions for various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations. 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. Within 180 days of issuance of the decennial census data 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. If at any time during the decennial period, the population of either the EPZ or the most populous Emergency Response Planning Area increases or decreases by more than 10 percent from the population that formed the basis for the licensee’s currently approved ETE, the ETE must be updated to reflect the impact of that population change. This updated ETE must be submitted to the NRC for review and approval under § 50.4 no later than

180 days after issuance of the U.S. Census Bureau's Subcounty Population Datasets or other government population growth estimate upon which the updated ETE is based.

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. Identification of, and assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies. 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 a hostile action[3] event at the nuclear power plant site.

* * * * *

9. All nuclear power plant licensees under this part and Part 52 must provide a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation

3 A hostile action is 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.

functions are not assigned any 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. These action levels must include hostile action events that may adversely affect the nuclear power plant. These 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 revision to an emergency action level scheme must be submitted as specified in § 50.4 for NRC approval before implementation if the licensee is changing from an emergency action level scheme based upon NUREG-0654 to another emergency action level scheme based upon NUMARC/NESP-007 or NEI-99-01. The licensee shall follow the change process in § 50.54(q) for all other emergency action level changes.

* * * * *

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

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. All nuclear power plant licensees and applicants under this part and Part 52 shall establish and maintain the capability to assess, classify, and declare an emergency condition promptly within 15 minutes after the availability of indications to plant operators that an emergency action level has been, or may be, exceeded. This 15-minute criterion must not be construed as a grace period to attempt to restore plant conditions to avoid declaring an emergency action due to an EAL that has been exceeded. This 15-minute criterion must not be construed as preventing implementation of response actions deemed by the licensee to be necessary to protect health and safety provided that any delay in classification does not deny the State and local authorities the opportunity to implement measures necessary to protect the public health and safety.

D. Notification Procedures

* * * * *

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 State/local officials have the capability to make a public 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 notification system shall be to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes. The use of this notification capability will range from immediate 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 State and local governmental officials to make a judgment whether or not to activate the public notification system. The licensee shall identify and demonstrate that the State or local officials have both the administrative and physical means for a backup method of public notification capable of being used in the event the primary method is unavailable. The backup method does not need to meet the 15-minute design objective for the primary prompt public notification system. When there is a decision to activate the notification system, the State and local officials will determine whether to activate the entire notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public notification system shall remain with the appropriate governmental authorities.

A licensee under this part or Part 52 shall implement the requirements under Part 50, Appendix E, Section IV.D.3 no later than the first biennial exercise conducted at the site more than one year after [EFFECTIVE DATE OF RULE].

E. Emergency Facilities and Equipment

* * * * *

5. Arrangements for the services of physicians and other medical personnel qualified to handle radiological emergencies on-site;

* * * * *

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 all nuclear power plant licensees and applicants under this part and Part 52, a licensee onsite operational support center;

b. For the 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 that serves multiple nuclear power reactor sites operated by the same licensee may be located more than 25 miles from one or more of the nuclear power reactor sites as long as provisions are made for locating NRC and offsite responders closer to each nuclear power reactor site that is more than 25 miles from the emergency operations facility so that NRC and offsite responders could interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site;

c. For the emergency operations facility permitted by paragraph 8.b of this section that serves multiple nuclear power reactor sites operated by the same licensee, a facility having the

following capabilities: 1) the capability for obtaining and displaying plant data and radiological information for each nuclear power reactor site, 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 nuclear power reactor site, and 3) the capability to support response to events occurring simultaneously at more than one nuclear power reactor site;

d. For all nuclear power plant licensees and applicants under this part and Part 52, an alternate facility (or facilities) capable of performing the following functions: staging of onsite responders, offsite notifications, and repair team preparation, for use when onsite emergency facilities cannot be safely accessed during a hostile action event;

e. A licensee with an emergency operations facility that serves only one nuclear power reactor site and is located more than 25 miles from that nuclear power reactor site 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 notification system, and ensure that emergency organization personnel are familiar with their duties[4].

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

a. An initial full participation[5] 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 plant licensees shall submit exercise scenarios under § 50.4 for prior NRC review and approval.

* * * * *

(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 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 licensee issued under part 52 of this chapter, if the applicant currently has an operating reactor at the site, an exercise, either full or partial participation[6], shall be conducted for each subsequent reactor constructed on the site. This exercise may be

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5 "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.

6 Partial participation when we 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

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 plant licensees shall submit exercise scenarios under § 50.4 for prior NRC review and approval. 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, protective action decision making, and plant system repair and corrective actions. 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.

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making related to emergency action levels, and (b) communication capabilities among affected State and local authorities and the licensee.

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 be taken in response to an emergency or 2) determine that key ERO skills have been maintained. 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 training, including exercises, shall provide for formal critiques in order to identify weak or deficient areas that need correction. Any weaknesses or deficiencies that are identified during training evolutions, exercises, or drills must be corrected.

* * * * *

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 all nuclear power plant licensees under this part and Part 52 must include a wide spectrum of radiological releases and events, including hostile action events. 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 all nuclear power plant licensees under this part and Part 52 must use scenarios with the following elements in each exercise planning cycle: (1) hostile action directed at the plant site, (2) in-plant repairs that, if properly implemented, mitigate core damage or mitigate/prevent containment failure when the plant is not fully secured from hostile action, (3) no radiological release or a minimal radiological release that does not require public protective actions, (4) an initial classification of or rapid escalation to a Site Area or General Emergency, (5) implementation of mitigative strategies to

respond to the loss of large areas of the plant under § 50.54(hh), and (6) other elements that vary exercise challenges and avoid participant preconditioning or anticipatory responses.

k. A licensee under this part or Part 52 shall implement the requirements under Part 50, Appendix E, Section IV.F.2. no later than its first biennial exercise conducted at the site more than one year after the [EFFECTIVE DATE OF THE RULE].

* * * * *

I. Onsite Protective Actions During Hostile Action Events

For all nuclear power plant licensees under this part and Part 52, a range of protective actions to protect onsite personnel during hostile action events must be developed.

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. Section 52.79 is amended by revising paragraph (a)(17) 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 _____, 2009.

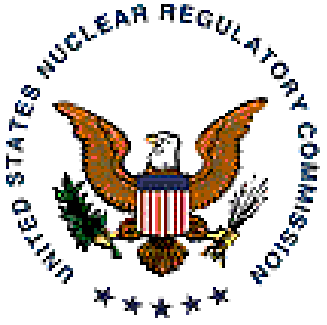
For the Nuclear Regulatory Commission.

Annette Vietti-Cook,
Secretary of the Commission.

Regulatory Analysis and Backfit Analysis

Proposed Rulemaking:
Emergency Preparedness (10 CFR Part 50)

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



Draft – January 8, 2009

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Executive Summary

The Nuclear Regulatory Commission (NRC) is proposing to enhance the current emergency preparedness (EP) regulations pertaining to nuclear reactors. The proposed rulemaking: (1) codifies emergency preparedness requirements imposed by Commission order after the terrorist attacks of September 11, 2001, as modified based upon experience and insights gained by the Commission during implementation, (2) codifies emergency preparedness 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 proposes changes addressing 11 aspects of EP. All of these changes would affect power reactor licensees, and one would affect non-power reactors.

The analysis presented in this document examines the benefits and costs of the proposed 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 proposed 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 proposed rule would result in a total one-time cost to all nuclear power plant sites and non-power reactors of approximately $29.5 million, followed by total annual costs on the order of $3.2 million. The total present value of these costs is estimated at $69.2 million (using a 7-percent discount rate) and $91.5 million (using a 3-percent discount rate) over the next 30 years. 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, would incur a one-time cost of approximately $447,000 followed by annual costs of approximately $50,000.

- Average Cost per Site for Non-Power Reactors. The average non-power reactor would incur a one-time cost of approximately $14,000. The proposed rule does 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 proposed rule. These benefits are evaluated qualitatively in Section 4.1.

- Costs to NRC. The rule would result in a one-time cost to NRC of approximately $1.1 million, followed by annual costs of approximately $192,000. The total present value of these NRC costs is estimated at $3.4 million (using a 7-percent discount rate) and $4.8 million (using a 3-percent discount rate).

- Costs to Other Government Agencies. The rule would result in a one-time cost to other government agencies of approximately $1.8 million, followed by annual costs of approximately $36,000. The total present value of these other government costs is

estimated at $2.2 million (using a 7-percent discount rate) and $2.5 million (using a 3-percent discount rate).

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

The proposed rule also would 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 proposed 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 proposed rule would result in a total one-time cost to all nuclear power plant sites of approximately $61.5 million, followed by total annual costs on the order of $3.2 million. The total present value of these costs is estimated at $101.1 million (using a 7-percent discount rate) and $123.5 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
EAL	Emergency Action Level
EOF	Emergency Operations Facility
EP	Emergency Preparedness
ERO	Emergency Response Organization
ETE	Evacuation Time Estimate
FEMA	Federal Emergency Management Agency
ICM	Interim Safeguards and Security Compensatory Measure
LLEA	Local Law Enforcement Agency
NRC	U.S. Nuclear Regulatory Commission
OMB	Office of Management and Budget
ORO	Offsite Response Organization
SRM	Staff Requirements Memorandum

1. Introduction

This document presents a draft regulatory analysis of proposed enhancements to the emergency preparedness (EP) requirements as set forth by the U.S. Nuclear Regulatory Commission (NRC) in Title 10, Part 50, of the Code of Federal Regulations (10 CFR Part 50). The proposed rule would revise provisions contained in Sections 50.47, 50.54, and Appendix E to Part 50. This introduction is divided into three sections. Section 1.1 states the problem and the reasons for the proposed rulemaking, Section 1.2 provides background information, and Section 1.3 discusses regulatory objectives related to adoption of the proposed revisions to the proposed 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. The NRC staff believes that 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 staff is proposing to revise 10 CFR Part 50 to codify the inclusion of EP enhancements.

1.2 Background

1.2.1 Current Regulations Governing Emergency Preparedness (10 CFR Part 50)

10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," of the Code of Federal Regulations (10 CFR Part 50), codifies a set of EP planning standards in 10 CFR 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 emergency preparedness program capabilities and to evaluate how consistently such changes had been implemented. Specifically, the Bulletin focused on gathering information from licensees on five emergency preparedness 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 emergency preparedness. 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 emergency preparedness requirements imposed by Commission order after the terrorist attacks of September 11, 2001, as modified based upon experience and insights gained by the Commission during implementation, (2) codify emergency preparedness 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 proposed rulemaking would revise 10 CFR 50.47, 50.54, and Appendix E to Part 50 to incorporate a total of 11 regulatory initiatives:

1. Protection of onsite personnel
2. Emergency action levels for hostile action events
3. Hostile action event drills and exercises
4. Evacuation time estimate updating
5. Licensee coordination with offsite response organizations
6. On-shift multiple responsibilities
7. Emergency response organization augmentation and alternative facilities
8. Reduction in effectiveness
9. Emergency classification timeliness
10. Emergency operations facility – performance-based approach
11. Backup means for alert and notification systems

The rulemaking would allow the NRC to achieve enhancements to emergency preparedness 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 emergency preparedness 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 proposed rule would impose. However, taking no action would not enhance emergency preparedness based on recent experience, would not enhance regulatory efficiency, and, moreover, would present a problem for establishing appropriate emergency preparedness 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 is 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 proposed action would reduce the risk that public health will be affected by radiological releases resulting from an emergency.

- Occupational Health (Accident) – The proposed action would reduce the risk that occupational health will be affected by radiological releases resulting from emergencies and by some hostile action events.

- Industry Implementation – The proposed action would require licensees to make facility modifications and to revise their emergency plans and procedures, among other implementation activities.

- Industry Operation – The proposed action would require licensees to conduct additional emergency preparedness (EP) activities beyond those currently being conducted. For example, licensees would need to track compliance over time with NRC's proposed hostile action event drill and exercise requirements.

- NRC Implementation – Under the proposed action, NRC would develop or revise guidance and inspection procedures as a result of the new requirements. Also, the NRC would incur administrative costs to finalize the rulemaking.

- NRC Operation – The proposed action would require the NRC to review biennial exercise scenarios and updated evacuation time estimates for each site on an ongoing basis.

- Other government – The proposed action would 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 proposed rule may require these other government agencies to review and revise guidance and procedures, and to conduct trainings.

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

- Regulatory Efficiency – The proposed action would result in enhanced regulatory efficiency through regulatory and compliance improvements.

- Off-Site Property – The proposed action would reduce the risk that off-site property will be affected by radiological releases resulting from emergencies.

- On-Site Property – The proposed action would reduce the risk that on-site property will be affected by radiological releases resulting from emergencies and some hostile action events.

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 would be 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 events.

[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 proposed 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 proposed 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 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 proposed rule also would 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 is 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 proposed 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). The NRC staff believes that 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 proposed 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 proposed rule, these applications instead would need to cite Part 50, Appendix E as the regulatory basis. NRC estimates that the cost impact associated with this revision is insignificant relative to the overall cost of the proposed rule.

In addition, one of the proposed rule's regulatory initiatives would apply to non-power reactors.[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 proposed 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.

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. 20, *NRC Information Digest, 2008-2009 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 has been obtained from, or developed in consultation with, NRC staff. The analysis also considered input provided by stakeholders at public meetings.

The analysis assumes that the final rule would become effective in December 2010, and that any one-time implementation costs are incurred during the first year. Ongoing (annual) costs of operation are assumed to begin in 2010, and are modeled on an annual cost basis. Costs and savings are expressed in 2008 dollars.

[3] Reduction in Effectiveness 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 proposed rule as a whole, and Exhibit 4-3 shows the incremental costs for each of the 11 regulatory initiatives contained in the proposed rule.[4] Relative to the no-action alternative (Option 1), the rule as a whole (Option 2) would result in a net quantitative cost estimated between $74.8 million and $98.7 million (7-percent and 3-percent discount rate, respectively). The majority of the costs associated with Option 2 will be incurred by industry ($69.2 million - $91.5 million, 7-percent and 3-percent discount rate, respectively).

The analysis estimates that Option 2 would 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 would include a reduced risk that public health and occupational health will be affected by radiological releases resulting from radiological emergencies, including hostile action events. There also would 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 proposed rule also would reduce the risk that off-site and on-site property will be affected by radiological releases resulting from emergencies, including hostile action events.

[4] Note that the totals shown in Exhibit 4-2 exceed those shown in Exhibit 4-3. The reason for this is that Exhibit 4-2 includes certain costs that cannot be attributed to a particular regulatory initiative. In particular, Exhibit 4-2 includes the remaining cost of the rulemaking as part of NRC implementation costs. The NRC estimates that the remaining cost to finalize the rulemaking is approximately $237,000 (assuming a level of effort of 1.5 FTE and a labor rate of $158,000).

Although EP cannot affect the probability of the initiating hostile action event, 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 reduces 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	*Qualitative Benefits and Costs:* None.
Option 2: Proposed Action **Industry:** ($69.2 million) using a 7% discount rate ($91.5 million) using a 3% discount rate **NRC:** ($3.4 million) using a 7% discount rate ($4.8 million) using a 3% discount rate **Other Government:** ($2.2 million) using a 7% discount rate ($2.5 million) using a 3% discount rate	*Qualitative Benefits:* 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 some hostile action events. 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 events. *Qualitative Costs:* None.

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

	Total Savings and Costs				**Average per Nuclear Power Plant Site**		**Average per Non-Power Reactor**	
Entity	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	($29,497,300)	($3,232,300)	($69,182,426)	($91,520,142)	($446,912)	($49,728)	($14,000)	$0
NRC	($1,076,600)	($192,400)	($3,438,824)	($4,768,459)	n/a	n/a	n/a	n/a
Other Government	($1,762,800)	($36,400)	($2,209,707)	($2,461,260)	n/a	n/a	n/a	n/a
Total	($32,336,700)	($3,461,100)	($74,830,958)	($98,749,860)	($446,912)	($49,728)	($14,000)	$0

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

	Total Savings and Costs				Average per Site	
Section	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
Subtotal	*($2,631,800)*	*$0*	*($2,631,800)*	*($2,631,800)*	*($40,200)*	*$0*
Emergency Action Levels for Hostile Action Events						
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
Subtotal	*($487,500)*	*$0*	*($487,500)*	*($487,500)*	*($7,500)*	*$0*
Hostile Action Event Drills and Exercises						
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	$0	$0	$0	n/a	n/a
Subtotal	*($884,000)*	*($532,000)*	*($7,415,723)*	*($11,092,258)*	*($12,800)*	*($7,200)*
Evacuation Time Estimate Updating						
Industry	($6,942,000)	($1,435,200)	($24,562,918)	($34,481,270)	($106,800)	($22,080)
NRC	($508,400)	($36,400)	($955,307)	($1,206,860)	n/a	n/a
Other Government	($364,000)	($36,400)	($810,907)	($1,062,460)	n/a	n/a
Subtotal	*($7,814,400)*	*($1,508,000)*	*($26,329,132)*	*($36,750,590)*	*($106,800)*	*($22,080)*
Licensee Coordination with Offsite Response Organizations						
Industry	($988,000)	$0	($988,000)	($988,000)	($15,200)	$0
NRC	($29,600)	$0	($29,600)	($29,600)	n/a	n/a
Other Government	($783,600)	$0	($783,600)	($783,600)	n/a	n/a
Subtotal	*($1,801,200)*	*$0*	*($1,801,200)*	*($1,801,200)*	*($15,200)*	*$0*
On-Shift Multiple Responsibilities						
Industry	($2,782,000)	$0	($2,782,000)	($2,782,000)	($42,800)	$0
NRC	($65,600)	$0	($65,600)	($65,600)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($2,847,600)*	*$0*	*($2,847,600)*	*($2,847,600)*	*($42,800)*	*$0*

	Total Savings and Costs				Average per Site	
Section	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)	($2,215,049)	($2,664,250)	($21,800)	($1,000)
NRC	($28,000)	$0	($28,000)	($28,000)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($1,445,000)*	*($65,000)*	*($2,243,049)*	*($2,692,250)*	*($21,800)*	*($1,000)*
Reduction in Effectiveness – Nuclear Power Reactor Licensees						
Industry	($1,183,000)	($154,100)	($3,074,990)	($4,139,941)	($18,200)	($2,371)
NRC	($52,000)	($92,000)	($1,181,546)	($1,817,338)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($1,235,000)*	*($246,100)*	*($4,256,536)*	*($5,957,279)*	*($18,200)*	*($2,371)*
Reduction in Effectiveness – Non-Power Reactors						
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	*($448,000)*	*$0*	*($448,000)*	*($448,000)*	*($14,000)*	*$0*
Emergency Classification 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
Subtotal	*($301,600)*	*$0*	*($301,600)*	*($301,600)*	*($4,400)*	*$0*
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
Subtotal	*($54,000)*	*$0*	*($54,000)*	*($54,000)*	*$0*	*$0*
Backup Means for Alert and Notification Systems (ANS)						
Industry	($11,518,800)	($1,110,000)	($25,147,018)	($32,817,985)	($177,212)	($17,077)
NRC	($15,600)	$0	($15,600)	($15,600)	n/a	n/a
Other Government	($615,200)	$0	($615,200)	($615,200)	n/a	n/a
Subtotal	*($12,149,600)*	*($1,110,000)*	*($25,777,818)*	*($33,448,785)*	*($177,212)*	*($17,077)*

	Total Savings and Costs				**Average per Site**	
Section	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
TOTAL						
Industry	($29,497,300)	($3,232,300)	($69,182,426)	($91,520,142)	Nuclear Power Plant: ($446,912) Non-Power Reactor: ($119,600)	Nuclear Power Plant: ($49,728) Non-Power Reactor: $0
NRC	($839,600)	($192,400)	($3,201,824)	($4,531,459)	n/a	n/a
Other Government	($1,762,800)	($36,400)	($2,209,707)	($2,461,260)	n/a	n/a
Total	**($32,009,700)**	**($3,461,100)**	**($74,593,958)**	**($98,512,860)**	**Nuclear Power Plant: ($446,912)** **Non-Power Reactor: ($14,000)**	**Nuclear Power Plant: ($49,728)** **Non-Power Reactor: $0**

*Results in 2008 dollars.
**Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is shown in Appendix A).

4.1.1 Protection of Onsite Personnel

The new measures for protection of onsite personnel would 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 offsite response organizations 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 proposed rule would 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. The primary benefit of this initiative, therefore, would be potentially saving lives and reducing exposures during an event, including a hostile action event, both in terms of the emergency responders and the local population.

- Total Cost to Industry. The proposed regulatory initiative would result in a total one-time cost to all power reactor licensees of approximately $2.6 million over the next 30 years.

- Average Cost per Site. The average nuclear power plant site, which may include multiple units, would incur a one-time cost of approximately $40,000.

- Costs to NRC. The regulatory initiative would 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because, in the event of a hostile action event, 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.

	Total Savings and Costs				**Average per Site**	
Entity	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
Subtotal	*($2,631,800)*	*$0*	*($2,631,800)*	*($2,631,800)*	*($40,200)*	*$0*

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

4.1.2 Emergency Action Levels for Hostile Action Events

This proposed regulatory initiative would codify 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 proposed regulatory initiative would increase assurance that licensees are adequately prepared to conduct appropriate assessment and emergency classification during a hostile action-related event, thereby resulting in emergency personnel onsite and offsite receiving proper notification to rapidly respond with the appropriate resources. The benefit of these new proposed measures would be 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 proposed regulatory initiative would result in a total one-time cost to all power reactor licensees of approximately $488,000.

- Average Cost per Site. The average nuclear power plant site, which may include multiple units, would 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would allow emergency responders more time to coordinate a response effort in the event of a hostile action-related emergency event. The additional time potentially would enable emergency responders to save more lives.

	Total Savings and Costs				**Average per Site**	
Entity	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
Subtotal	*($487,500)*	*$0*	*($487,500)*	*($487,500)*	*($7,500)*	*$0*

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

4.1.3 Hostile Action Event Drills and Exercises

The hostile action event 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 events in licensee drill and exercise programs will better prepare the ERO to respond to such events. This regulatory change would 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 would 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 proposed regulatory initiative would result in a total one-time cost to 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 estimated at approximately $6.6 million (using a 7-percent discount rate) and $9.8 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, would incur a one-time cost of approximately $13,000 followed by annual costs of approximately $7,000.

- Costs to NRC. The regulatory initiative would 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 estimated at $838,000 (using a 7-percent discount rate) and $1.3 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would improve the execution of EP plans and better protect public health and safety during an emergency.

	Total Savings and Costs				**Average per Site**	
Entity	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	$0	$0	$0	n/a	n/a
Subtotal	*($884,000)*	*($532,000)*	*($7,415,723)*	*($11,092,258)*	*($12,800)*	*($7,200)*

Appendix A.3 presents additional detail on the cost analysis for the regulatory initiative addressing hostile action event drills and exercises.
Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is shown in Appendix A).

4.1.4 Evacuation Time Estimate Updating

The purpose of evacuation time estimates (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 proposed changes to the regulations and guidance, which originated from NRC staff review, would 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 would improve the information used for determining the best protective action strategy for each site. The primary benefit of this change would 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 would lead to enhanced protection of public health and safety.

- Total Cost to Industry. The proposed regulatory initiative would result in a total one-time cost to all power reactor licensees of approximately $6.9 million, followed by total annual costs on the order of $1.4 million. The total present value of these costs is estimated at approximately $24.6 million (using a 7-percent discount rate) and $34.5 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, would incur a one-time cost of approximately $107,000 followed by annual costs of approximately $22,000.

- Costs to NRC. The regulatory initiative would result in a one-time cost to NRC of approximately $508,000, followed by annual costs of approximately $36,000. The total present value of these NRC costs is estimated at $955,000 (using a 7-percent discount rate) and $1.2 million (using a 3-percent discount rate).

- Costs to Other Government Agencies. The rule would 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 estimated at $811,000 (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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would result in updated EP plans, more effective emergency responses, and better protection to the local population in case of an emergency event.

	Total Savings and Costs				**Average per Site**	
Entity	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	($6,942,000)	($1,435,200)	($24,562,918)	($34,481,270)	($106,800)	($22,080)
NRC	($508,400)	($36,400)	($955,307)	($1,206,860)	n/a	n/a
Other Government	($364,000)	($36,400)	($810,907)	($1,062,460)	n/a	n/a
Subtotal	*($7,814,400)*	*($1,508,000)*	*($26,329,132)*	*($36,750,590)*	*($106,800)*	*($22,080)*

Appendix A.4 presents additional detail on the cost analysis for the regulatory initiative addressing ETE updating.
Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is 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 DHS Comprehensive Reviews. Currently, licensees are not explicitly required to coordinate with OROs to ensure that ORO personnel are available to carry out planned actions, such as traffic control and route alerting, during hostile action directed at a nuclear power plant. The DHS Comprehensive Review program identified that at many sites OROs had not planned for the competing resource demands that would occur during hostile action. The proposed

rule would require licensees to coordinate with OROs to ensure that offsite personnel are available to carry out planned functions, such as traffic control, route alerting, etc., as required when an emergency event occurs. The primary benefit would be to increase assurance that adequate resources are available to respond to a hostile action event at a nuclear power plant. This change enhances protection of public health and safety.

- Total Cost to Industry. The regulatory initiative would result in a total one-time cost to all power reactor licensees on the order of $988,000.

- Average Cost per Site. The average nuclear power plant site, which may include multiple units, would incur a one-time cost of approximately $15,000.

- Costs to NRC. The proposed regulatory initiative would result in a one-time cost to NRC of approximately $30,000.

- Costs to Other Government Agencies. Additionally, the regulatory initiative would result in a one-time cost to other government agencies of approximately $784,000.

- 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would increase the effectiveness of important aspects of the EP plan, thereby potentially saving lives in the event of an emergency.

	Total Savings and Costs				**Average per Site**	
Entity	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	($988,000)	$0	($988,000)	($988,000)	($15,200)	$0
NRC	($29,600)	$0	($29,600)	($29,600)	n/a	n/a
Other Government	($783,600)	$0	($783,600)	($783,600)	n/a	n/a
Subtotal	*($1,801,200)*	*$0*	*($1,801,200)*	*($1,801,200)*	*($15,200)*	*$0*

Appendix A.5 presents additional detail on the cost analysis for the regulatory initiative addressing licensee coordination with OROs.
Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is shown in Appendix A).

4.1.6 On-Shift Multiple Responsibilities

This regulatory initiative would codify generically applicable requirements similar to those imposed by the 2002 ICM Order requirements limiting onshift staff multiple responsibilities for individuals performing emergency plan functions. The proposed regulatory initiative would 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 would be to increase assurance of effective and timely emergency plan

implementation and timely protective action recommendations to OROs, should that be necessary. This would enhance protection of public health and safety in the event of an emergency.

- Total Cost to Industry. The proposed rule would result in a total one-time cost to all power reactor licensees of approximately $2.8 million.

- Average Cost per Site. The average nuclear power plant site, which may include multiple units, would incur a one-time cost of approximately $43,000.

- Costs to NRC. The regulatory initiative would 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would reduce the possibility that emergency plans would fail as a result of foreseeable conflicts caused by multiple responsibilities. Therefore, the public would be better protected because onsite staff would be able to better fulfill all aspects of the emergency plan, and protective action recommendations to the states would be more timely and accurate.

	Total Savings and Costs				**Average per Site**	
Entity	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
Industry	($2,782,000)	$0	($2,782,000)	($2,782,000)	($42,800)	$0
NRC	($65,600)	$0	($65,600)	($65,600)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($2,847,600)*	*$0*	*($2,847,600)*	*($2,847,600)*	*($42,800)*	*$0*

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

4.1.7 Emergency Response Organization Augmentation and Alternative Facilities

This regulatory initiative would codify generically applicable requirements for the use of an alternative emergency response facility similar to those imposed by the Order and addressed in NRC Bulletin 2005-02, which would protect ERO personnel from hostile action and increase assurance of timely ERO augmentation so responders could travel quickly to the site. In the event of a hostile-action event, it is possible that the onsite emergency preparedness 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 would be greater assurance that the emergency response effort would be effective in the event that a hostile action compromises primary emergency response facilities.

- Total Cost to Industry. The regulatory initiative would result in a total one-time cost to 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 estimated at $2.2 million (using a 7-percent discount rate) and $2.7 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, would incur a one-time cost of approximately $22,000 followed by annual costs of approximately $1,000.

- Costs to NRC. The proposed regulatory initiative would result in a one-time cost to NRC of approximately $28,000.

- 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would increase assurance that EP plans would be executed effectively in the event of hostile actions, thereby better protecting public health and safety.

	Total Savings and Costs				**Average per Site**	
Entity	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)	($2,215,049)	($2,664,250)	($21,800)	($1,000)
NRC	($28,000)	$0	($28,000)	($28,000)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($1,445,000)*	*($65,000)*	*($2,243,049)*	*($2,692,250)*	*($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 would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is shown in Appendix A).

4.1.8 Reduction in Effectiveness

Current regulations require licensees to "maintain in effect" their emergency plans. The objective of this proposed regulatory initiative, which originated in NRC staff review and would apply 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 proposed rule would 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, would 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 peremptorily submitting all EP plan changes for NRC review, resulting in fewer costs of submittal and NRC staff charges.

- Total Cost to Industry. The proposed regulatory initiative would result in a total one-time cost to all power reactor licensees of approximately $1.2 million, followed by total annual costs of about $154,000. In addition, the proposed regulatory initiative would result in a one-time cost to non-power reactors of approximately $448,000. Non-power reactors would not incur annual costs. The total present value of these costs is estimated at $3.5 million (using a 7-percent discount rate) and $4.6 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, would incur a one-time cost of approximately $18,000 followed by annual costs of approximately $2,000. The average non-power reactor would incur a one-time cost of approximately $14,000 and no annual costs.

- Costs to NRC. The regulatory initiative would result in a one-time cost to NRC of approximately $52,000, followed by annual costs of approximately $92,000. The total present value of these NRC costs is estimated at $1.2 million (using a 7-percent discount rate) and $1.8 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would increase assurance that current levels of safety are not reduced and the licensee's emergency plan, as modified, would 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).

	Total Savings and Costs				Average per Site	
Entity	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)	($3,074,990)	($4,139,941)	($18,200)	($2,371)
NRC	($52,000)	($92,000)	($1,181,546)	($1,817,338)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Non-Power Reactors						
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	*($1,683,000)*	*($246,100)*	*($4,704,536)*	*($6,405,279)*	*($32,200)*	*($2,371)*

Appendix A.8 presents additional detail on the cost analysis for the regulatory initiative addressing reduction in effectiveness. Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is shown in Appendix A).

4.1.9 Emergency Classification Timeliness

Current emergency preparedness regulations do not establish timeliness criteria for the emergency classification process. This regulatory initiative, which originated from NRC staff review, would require licensees to have the capability to classify and declare an emergency within 15 minutes of the availability of information that an EAL has been or may be exceeded. While this action already is largely conducted on a voluntary basis by the industry, the NRC staff believes that codification of the rule would result in increased assurance that the emergency plan will be effectively implemented. Thus, the objective of the proposed regulatory initiative is to ensure that licensee emergency classifications are performed in a timely manner so as to support timely implementation of emergency response actions. The primary benefit would 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 would result in a total one-time cost to all power reactor licensees of approximately $286,000.

- Average Cost per Site. The average nuclear power plant site, which may include multiple units, would incur a one-time cost of approximately $4,000.

- Costs to NRC. The proposed regulatory initiative would 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would increase assurance in the ability of licensees to conduct timely emergency classifications in the event of an emergency, which, in turn, would allow emergency personnel to respond as quickly as possible to protect the public.

	Total Savings and Costs				**Average per Site**	
Entity	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
Subtotal	*($301,600)*	*$0*	*($301,600)*	*($301,600)*	*($4,400)*	*$0*

Appendix A.9 presents additional detail on the cost analysis for the regulatory initiative addressing the timeliness of emergency classifications.
Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is shown in Appendix A).

4.1.10 Emergency Operations Facility – Performance-Based Approach

This proposed provision revises the EP regulations to make the requirements for emergency operations facilities (EOFs) more performance-based. This regulatory initiative, which originated from NRC staff review, would allow 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 would provide specific functional requirements for the consolidated EOFs, thereby ensuring that the necessary capabilities are in place for the protection of public health and safety. The primary benefit of this provision is the reduction in costs achieved by licensees that choose to consolidate their EOFs.

- Total Savings to Industry. The analysis assumes there are no incremental costs to licensees for this regulatory initiative because the rule does not require consolidation of EOFs. Instead, a licensee would voluntarily choose to pursue consolidation only if the incremental savings exceed the incremental costs. These savings have not been quantified in the analysis.

- Costs to NRC. The regulatory initiative would result in a one-time cost to NRC of approximately $54,000.

- Decision Rationale. The NRC believes that the provision's savings to licensees would exceed the costs to the NRC and, therefore, that the provision is cost-justified.

	Total Savings and Costs				Average per Site	
Entity	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
Subtotal	*($54,000)*	*$0*	*($54,000)*	*($54,000)*	*$0*	*$0*

Appendix A.10 presents additional detail on the cost analysis for the regulatory initiative addressing the EOF performance-based approach.
Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is shown in Appendix A).

4.1.11 Backup Means for Alert and Notification Systems (ANS)

This regulatory initiative, which originated from NRC staff review, would require licensees to select and implement a backup method of alerting and notifying the public in the event that the primary ANS is unavailable. A backup means of alerting and notifying the public increases 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 would be to provide increased assurance that the public will be alerted and notified of any emergency 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 proposed regulatory initiative would result in a total one-time cost to 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 estimated at $25.1 million (using a 7-percent discount rate) and $32.8 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, would incur a one-time cost of approximately $177,000 followed by annual costs of approximately $17,000.

- Costs to NRC. The regulatory initiative would result in a one-time cost to NRC of approximately $16,000.

- Costs to Other Government Agencies. The regulatory initiative would result in a one-time cost to other government agencies of approximately $615,000.

- 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 would provide health and safety-related benefits, as discussed above. The NRC believes that the regulatory initiative is cost-justified because it would increase assurance that the local population would 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 proposed rule.

	Total Savings and Costs				**Average per Site**	
Entity	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)	($25,147,018)	($32,817,985)	($177,212)	($17,077)
NRC	($15,600)	$0	($15,600)	($15,600)	n/a	n/a
Other Government	($615,200)	$0	($615,200)	($615,200)	n/a	n/a
Subtotal	*($12,149,600)*	*($1,110,000)*	*($25,777,818)*	*($33,448,785)*	*($177,212)*	*($17,077)*

Appendix A.11 presents additional detail on the cost analysis for the regulatory initiative addressing the backup means for ANS. Not all 65 sites would incur certain costs resulting from the provision. As a result, the cost for the average site (which is shown above) would be less than the cost per affected site (which is 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 proposed 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 proposed 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 proposed rule would result in a total one-time cost to all power reactor sites of approximately $61.5 million, followed by total annual costs on the order of $3.2 million. The total present value of these costs is estimated at $101.1 million (using a 7-percent discount rate) and $123.5 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, would incur a one-time cost of approximately $939,000 followed by annual costs of approximately $50,000.

- Average Cost per Site for Non-Power Reactors. The average non-power reactor would incur a one-time cost of approximately $14,000. The proposed rule would 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 proposed 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 proposed rule.)

- Costs to NRC. The rule would result in a one-time cost to NRC of approximately $2.1 million, followed by annual costs of approximately $236,000. The total present value of these costs is estimated at $5.0 million (using a 7-percent discount rate) and $6.6 million (using a 3-percent discount rate). (These costs include NRC costs to comply with each regulatory initiative plus the one-time administrative costs of approximately $237,000 to finalize the rulemaking.)

- Costs to Other Government Agencies. The proposed rule would result in a one-time cost to other government agencies of approximately $6.2 million, followed by annual costs of approximately $36,000. The total present value of these costs is estimated at $6.7 million (using a 7-percent discount rate) and $6.9 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 would provide substantial health and safety-related benefits. The NRC believes that the rule is cost-justified because the proposed regulatory initiatives for increased and consistent emergency preparedness measures would increase the effectiveness of emergency planning and response efforts, thereby saving lives of emergency personnel (in a hostile action-related event) and the public in the event of an emergency (hostile action-related or non-hostile action-related). 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

	Total Savings and Costs				Average per Site	
Section	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
Subtotal	*($4,809,800)*	*$0*	*($4,809,800)*	*($4,809,800)*	*($73,400)*	*$0*
Emergency Action Levels for Hostile Action Events						
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
Subtotal	*($6,665,500)*	*$0*	*($6,665,500)*	*($6,665,500)*	*($98,900)*	*$0*
Hostile Action Event Drills and Exercises						
Industry	($9,594,000)	($468,000)	($15,339,951)	($18,574,197)	($147,600)	($7,200)
NRC	($791,000)	($107,200)	($2,107,167)	($2,848,002)	n/a	n/a
Other Government	($588,000)	$0	($588,000)	($588,000)	n/a	n/a
Subtotal	*($10,973,000)*	*($575,200)*	*($18,035,118)*	*($22,010,199)*	*($147,600)*	*($7,200)*
Evacuation Time Estimate Updating						
Industry	($6,942,000)	($1,435,200)	($24,562,918)	($34,481,270)	($106,800)	($22,080)
NRC	($508,400)	($36,400)	($955,307)	($1,206,860)	n/a	n/a
Other Government	($364,000)	($36,400)	($810,907)	($1,062,460)	n/a	n/a
Subtotal	*($7,814,400)*	*($1,508,000)*	*($26,329,132)*	*($36,750,590)*	*($106,800)*	*($22,080)*
Licensee Coordination with Offsite Response Organizations						
Industry	($5,850,000)	$0	($5,850,000)	($5,850,000)	($90,000)	$0
NRC	($67,400)	$0	($67,400)	($67,400)	n/a	n/a
Other Government	($4,527,600)	$0	($4,527,600)	($4,527,600)	n/a	n/a
Subtotal	*($10,445,000)*	*$0*	*($10,445,000)*	*($10,445,000)*	*($90,000)*	*$0*
On-Shift Multiple Responsibilities						
Industry	($10,309,000)	$0	($10,309,000)	($10,309,000)	($158,600)	$0
NRC	($103,400)	$0	($103,400)	($103,400)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($10,412,400)*	*$0*	*($10,412,400)*	*($10,412,400)*	*($158,600)*	*$0*

	Total Savings and Costs				Average per Site	
Section	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)	($3,723,049)	($4,172,250)	($45,000)	($1,000)
NRC	($75,800)	$0	($75,800)	($75,800)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($3,000,800)*	*($65,000)*	*($3,798,849)*	*($4,248,050)*	*($45,000)*	*($1,000)*
Reduction in Effectiveness – Nuclear Power Reactor Licensees						
Industry	($1,183,000)	($154,100)	($3,074,990)	($4,139,941)	($18,200)	($2,371)
NRC	($52,000)	($92,000)	($1,181,546)	($1,817,338)	n/a	n/a
Other Government	$0	$0	$0	$0	n/a	n/a
Subtotal	*($1,235,000)*	*($246,100)*	*($4,256,536)*	*($5,957,279)*	*($18,200)*	*($2,371)*
Reduction in Effectiveness – Non-Power Reactors						
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	*($448,000)*	*$0*	*($448,000)*	*($448,000)*	*($14,000)*	*$0*
Emergency Classification 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
Subtotal	*($1,504,100)*	*$0*	*($1,504,100)*	*($1,504,100)*	*($22,900)*	*$0*
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
Subtotal	*($54,000)*	*$0*	*($54,000)*	*($54,000)*	*$0*	*$0*
Backup Means for Alert and Notification Systems (ANS)						
Industry	($11,518,800)	($1,110,000)	($25,147,018)	($32,817,985)	($177,212)	($17,077)
NRC	($15,600)	$0	($15,600)	($15,600)	n/a	n/a
Other Government	($615,200)	$0	($615,200)	($615,200)	n/a	n/a
Subtotal	*($12,149,600)*	*($1,110,000)*	*($25,777,818)*	*($33,448,785)*	*($177,212)*	*($17,077)*

	Total Savings and Costs				**Average per Site**	
Section	One-Time Saving (Cost)	Annual Saving (Cost)	NPV (7 percent)	NPV (3 percent)	One-Time Saving (Cost)	Annual Saving (Cost)
TOTAL						
Industry	($61,457,800)	($3,232,300)	($101,142,926)	($123,480,642)	Nuclear Power Plant: ($938,612) Non-Power Reactor: ($14,000)	Nuclear Power Plant: ($49,728) Non-Power Reactor: $0
NRC	($1,816,000)	($235,600)	($4,708,620)	($6,336,800)	n/a	n/a
Other Government	($6,237,800)	($36,400)	($6,684,707)	($6,936,260)	n/a	n/a
Total	***($69,511,600)***	***($3,504,300)***	***($112,536,253)***	***($136,753,701)***	**Nuclear Power Plant: ($938,612)** **Non-Power Reactor: ($14,000)**	**Nuclear Power Plant: ($49,728)** **Non-Power Reactor: $0**

Results in 2008 dollars.

4.3 Backfit Analysis

This section presents the NRC's evaluation of changes in the proposed 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 proposed 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.

- 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 Committee to Review Generic Requirements (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 the one proposed initiative allowing a performance-based approach for the emergency operations facility (which results in no cost to industry), the entire proposed rule qualifies as a backfit.

The NRC then evaluated the aggregated set of requirements constituting backfits in accordance with 10 CFR 50.109 to determine if the costs of implementing the rule would 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 proposed rule that qualify as backfits result in an estimated net cost of approximately $69.2 million to industry over the next 30 years (present value), assuming a 7-percent discount rate, or approximately $91.5 million assuming a 3-percent discount rate.

For the average nuclear power plant site, these backfits would mean an initial one-time cost of approximately $447,000, followed by annual costs of about $50,000 per year. The average non-power reactor would incur a one-time cost of $14,000 due to these backfits, and no annual cost. For industry as a whole, NRC estimates that the backfits would result in approximately $29.5 million in one-time costs, and about $3.2 million in annual costs.

With regard to emergency preparedness benefits afforded by the proposed 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 would be justified in light of the emergency preparedness 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 proposed backfit is designed to achieve;

The rulemaking aims to enhance the current emergency preparedness regulations pertaining to nuclear power reactors and non-power reactors. The goals of the proposed rule would be as follows:

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

- To enhance nuclear plant emergency preparedness by codifying the enhancements implemented by industry on a voluntary basis subsequent to the issuance of NRC Bulletin 2005-02. These actions would enhance the ability of nuclear plant EROs to respond to hostile action and implement an adequate protective response.

- To enhance nuclear plant emergency preparedness by codifying improvements to requirements in the areas of:
    - timeliness of declaration and the content of emergency action level schemes;
    - survivability, facilities and resources for emergency response organizations;
    - alerting and notification of the public, evacuation planning and adequate resources to implement evacuations;
    - training through drills and exercises that reflect the current threat environment, and;
    - clarity of regulatory processes for emergency plan changes.

(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 proposed rule would ensure that all licensees consistently implement new and existing emergency preparedness measures. Detailed analysis of the activities and procedural changes required by the proposed 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 proposed rule would 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 would affect power reactor licensees.

- Emergency Action Levels for Hostile Action Events

The new measures would require 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. This provision would affect power reactor licensees.

- Hostile Action Event Drills and Exercises

The proposed rule language would 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 emergency response organizations to expect a sequential escalation of emergency classifications culminating in a large radiological release. Licensees would need to submit these scenarios for NRC approval. This provision would affect power reactor licensees.

- Evacuation Time Estimate Updating and Exercises

The proposed rule would 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 proposed rule would establish a requirement for licensees to update ETEs on a stated frequency (i.e., every 10 years) and when annual reviews show that the population increases or decreases by 10 percent from the population that formed the basis for the currently approved ETE. This provision would affect power reactor licensees.

- Licensee Coordination with Offsite Response Organizations (OROs)

The proposed rule would require licensees to coordinate with OROs to increase assurance that adequate resources will be available and pre-planned actions will be carried out when needed. Licensees would need to review and revise plans, procedures, and training regarding notification, activation, and coordination between site personnel and OROs. This provision would affect power reactor licensees.

- On-Shift Multiple Responsibilities

This change would require licensees to review and revise plans, procedures, and training regarding assignment of multiple responsibilities, and to re-assign responsibilities if necessary. This provision would affect power reactor licensees.

- Emergency Response Organization Augmentation and Alternative Facilities

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

- Reduction in Effectiveness

The new measures would require licensees to review and revise procedures and training to address the new process for emergency plan changes (i.e., through 10 CFR 50.90 submittals). This provision would affect power reactor licensees and non-power reactors.

• Emergency Classification Timeliness

Licensees are already complying with the proposed rule language via a voluntary initiative that accomplishes the intent of the proposed rule. Licensees, however, would need to review and confirm or (if necessary) revise existing site procedures and training to reflect the revised rule. This provision would affect power reactor licensees.

- Backup Means for Alert and Notification Systems

The proposed rule would require licensees to select and implement a backup method of alerting and notification to be used in the event that the primary ANS is unavailable. This provision would affect power reactor licensees.

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

The rulemaking would 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 increases the likelihood of accident mitigation if the initiating event proceeds beyond the need for initial operator actions. An augmented EP program enhances 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 would not directly affect the likelihood of core damage or spent fuel damage. The rulemaking would provide added assurance that nuclear industry workers are not subjected to unnecessary radiological exposures as the result of emergency situations, including hostile action events.

(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 proposed rule sets forth the NRC's estimate of the initial costs for implementing the major elements of the proposed rule, and the ongoing costs to the licensees. The estimated one-time industry net cost associated with the backfits would be approximately $29.5 million (or approximately $447,000 for the average nuclear power plant program and $14,000 for the average non-power reactor program), and the annually recurring cost would be approximately $3.2 million (or approximately $50,000 for the average nuclear power plant program). Combining these initial and annual costs, this analysis estimates that the backfits associated with the proposed rule would cost industry approximately $69.2 million (present value, assuming a 7-percent discount rate) to $91.5 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 proposed and existing regulatory requirements;

The proposed rule would 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 events when onsite facilities (technical support center and/or near-site EOF are not available (e.g., due to emergency conditions).

- Licensees must select and implement a backup method of alerting and notification to be used in the event that the primary ANS is unavailable.

These design changes do 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 proposed backfit and the availability of such resources;

The majority of the one-time costs incurred by NRC come from reviewing and revising guidance documents to comply with the proposed rule. NRC faces additional costs to participate in EP exercise drills, review the emergency plans, coordinate with FEMA, develop procedures for ETE reviews, review initial updates of ETEs, and issue a new regulatory guide clarifying the requirement that licensees must "maintain in effect" their emergency plans. These activities would result in one-time costs of approximately $786,000.

The NRC faces costs of annual operations to review biennial EP exercise submittals, review ongoing updates of ETEs, and participate in the hearing process when a licensee makes changes to its emergency plan that may

decrease its' effectiveness. These activities would result in annual costs of approximately $192,000.

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

For the nuclear power reactor licensees, the emergency preparedness requirements in the proposed rule would not directly relate to the facility type, design or age. Although the benefits and costs attributable to the proposed rule would 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.

However, the proposed rule also affects non-power reactors, which are different facilities relative to nuclear power reactor sites. The Reduction in Effectiveness regulatory initiative is the only rulemaking topic that affects both non-power reactors and nuclear power reactor licensees. Consequently, the benefits and costs attributable to the proposed rule would differ for these two types of facilities.

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

The proposed backfit, when implemented later at the final rule stage, would be final.

In light of the substantial benefits of the proposed rule as summarized in Sections 4.1.1-4.1.11, the NRC finds that the backfits contained in the proposed rule, when considered in the aggregate, would constitute a substantial increase in emergency preparedness.

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 would apply generically to all reactors, and would 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 would 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 proposed rule.

[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).

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 proposed 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.

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.	Proposed 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 proposed 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 proposed rule as a whole would result in a net cost estimated as approximately $74.8 million (total present value over a 30-year period), assuming a 7-percent discount rate, or approximately $98.7 million assuming a 3-percent discount rate. All of this cost would accrue to industry, except for approximately $3.4 million (7 percent) or $4.8 million (3 percent) and approximately $2.2 million (7 percent) or $2.5 million (3 percent) that would that would accrue to the NRC and other government agencies, respectively. The rule would result in one-time industry costs of approximately $29.5 million. This is equivalent to approximately $447,000 for the average power reactor site, and $14,000 for the average non-power reactor. The proposed rule language would generate annual industry costs of about $3.2 million ($50,000 per site). Offsetting this net cost, the NRC believes that the rule would result in substantial non-quantified benefits related to emergency preparedness, 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 proposed rule on licensee facilities, the agency has concluded that the proposed rule provisions would be justified.

5.2 Backfit Analysis

The NRC conducted a backfit analysis of the proposed rule relative to the backfit requirements in 10 CFR 50.109. The proposed rule would constitute a backfit because it would 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; revising procedures and training to address the new process for emergency plan changes; reviewing and revising existing site procedures and training to include new timeliness requirements for emergency classifications; and selecting and implementing a backup method of alerting and notification to be used in the event that the primary ANS is unavailable. This falls under the definition of a backfit because such efforts would be new and would be the result of a change in NRC's position.

In light of the substantial benefits of the proposed rule as summarized in Sections 4.1.1-4.1.11, the NRC finds that the backfits contained in the proposed rule, when considered in the aggregate, would constitute a substantial increase in emergency preparedness and would be 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 increases 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 proposed EP rule, substantially enhances 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 proposed action would be implemented, the required NRC actions to ensure implementation, and the impact on NRC resources.

6.1 Schedule

The NRC proposes to make the final rule 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 proposed rule changes: (1) the requirements under proposed 10 CFR 50.54(q), which would become effective 30 days after publication of the final rule in the Federal Register; (2) the requirements under proposed Part 50, Appendix E, Section IV.F.2., which each applicable licensee would be required to implement no later than its first biennial exercise conducted more than one year after the effective date of the final rule; and (3) the requirements under proposed Part 50, Appendix E, Section IV.D.3., which each applicable licensee would 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 would experience most of the impact of the revisions to the requirements. Nevertheless, the NRC expects the rulemaking would have a noticeable impact on agency resources, both initially and annually thereafter. The most significant impacts result from NRC's need to complete the rulemaking, and to review and revise guidance documents relating to the following issues:

- Protection of Onsite Personnel
- Emergency Action Levels for Hostile Action Events
- Hostile Action Event Drills
- Evacuation Time Estimate Updating and Exercises
- Licensee Coordination with Offsite Response Organizations
- On-Shift Multiple Responsibilities
- Emergency Response Organization Augmentation and Alternative Facilities
- Reduction in Effectiveness
- Emergency Classification Timeliness
- Emergency Operations Facilities – Performance-Based Approach
- Backup Means for Alert and Notification Systems

The NRC estimates that the remaining cost to finalize the rulemaking is approximately $237,000. In addition to reviewing and revising guidance documents, the NRC faces additional 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 is approximately $840,000. Also, the NRC faces an impact from issuing a new regulatory guide clarifying the requirement that a licensee must "maintain in effect" their emergency plan. All of the activities discussed above would result in one-time costs of approximately $1.1 million.

Additionally, the NRC expects that the rulemaking would result in increased annual expenditures of agency resources. The NRC faces annual costs to review biennial EP exercise submittals, review ongoing updates of ETEs, and participate in the hearing process when licensees make changes to their emergency plan that may decrease effectiveness. These activities would result in annual costs of approximately $192,000.

Appendix A:

Regulatory Analysis Assumptions and Inputs, 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 actions. The proposed rule would codify 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) would replace existing training materials.
(2) Revised procedures (including new onsite protective measures) would be integrated into the current drill and exercise program at an insignificant cost to licensees.

	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**		**Savings (Cost) Per Site**	**Units**		**Savings (Cost) Per Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Develop new protective measures	Executive	$200.00/hr	65	0 hrs/site	$	-	8 hrs/site	$	(1,600)
	Manager	$150.00/hr	65	0 hrs/site	$	-	20 hrs/site	$	(3,000)
	EP staff	$100.00/hr	65	0 hrs/site	$	-	80 hrs/site	$	(8,000)
	Clerical	$50.00/hr	65	0 hrs/site	$	-	8 hrs/site	$	(400)
	Licensing	$100.00/hr	65	0 hrs/site	$	-	8 hrs/site	$	(800)
Review and revise emergency plan	Executive	$200.00/hr	65	0 hrs/site	$	-	8 hrs/site	$	(1,600)
	Manager	$150.00/hr	65	0 hrs/site	$	-	20 hrs/site	$	(3,000)
	EP staff	$100.00/hr	65	0 hrs/site	$	-	80 hrs/site	$	(8,000)
	Clerical	$50.00/hr	65	0 hrs/site	$	-	8 hrs/site	$	(400)
	Licensing	$100.00/hr	65	0 hrs/site	$	-	8 hrs/site	$	(800)
Review and revise existing procedures	Executive	$200.00/hr	65	4 hrs/site	$	(800)	4 hrs/site	$	(800)
	Manager	$150.00/hr	65	20 hrs/site	$	(3,000)	20 hrs/site	$	(3,000)
	EP staff	$100.00/hr	65	80 hrs/site	$	(8,000)	40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	20 hrs/site	$	(1,000)	20 hrs/site	$	(1,000)
	Licensing	$100.00/hr	65	8 hrs/site	$	(800)	8 hrs/site	$	(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)	4 hrs/site	$	(600)
	EP staff	$100.00/hr	65	20 hrs/site	$	(2,000)	20 hrs/site	$	(2,000)
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	8 hrs/site	$	(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)	0 hrs/site	$	-
	Manager	$150.00/hr	65	24 hrs/site	$	(3,600)	0 hrs/site	$	-
	EP staff	$100.00/hr	65	80 hrs/site	$	(8,000)	0 hrs/site	$	-
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	16 hrs/site	$	(1,600)	0 hrs/site	$	-
Total Industry Implementation Cost				320 hrs/site	$	(33,200)	372 hrs/site	$	(40,200)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (industry 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 Events

NRC regulations currently require an emergency classification and action level scheme for hostile action events. Historically, event declarations have been based on actual threat information. The proposed rule would codify 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 event declarations based on a credible future threats.

Assumptions:

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

	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**		**Savings (Cost) Per Site**	**Units**		**Savings (Cost) Per Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Review existing EALs	Executive	$200.00/hr	65	0 hrs/site	$	-	0 hrs/site	$	-
	Manager	$150.00/hr	65	0 hrs/site	$	-	4 hrs/site	$	(600)
	EP Staff	$100.00/hr	65	0 hrs/site	$	-	24 hrs/site	$	(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)
Review and revise EAL training	Executive	$200.00/hr	65	0 hrs/site	$	-	0 hrs/site	$	-
	Manager	$150.00/hr	65	8 hrs/site	$	(1,200)	2 hrs/site	$	(300)
	EP staff	$100.00/hr	65	80 hrs/site	$	(8,000)	8 hrs/site	$	(800)
	Clerical	$50.00/hr	65	8 hrs/site	$	(400)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	0 hrs/site	$	-	0 hrs/site	$	-
Review and revise emergency plan	Executive	$200.00/hr	65	2 hrs/site	$	(400)	0 hrs/site	$	-
	Manager	$150.00/hr	65	24 hrs/site	$	(3,600)	2 hrs/site	$	(300)
	EP staff	$100.00/hr	65	80 hrs/site	$	(8,000)	8 hrs/site	$	(800)
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	16 hrs/site	$	(1,600)	4 hrs/site	$	(400)
Review and revise procedures	Executive	$200.00/hr	65	4 hrs/site	$	(800)	0 hrs/site	$	-
	Manager	$150.00/hr	65	40 hrs/site	$	(6,000)	2 hrs/site	$	(300)
	EP staff	$100.00/hr	65	200 hrs/site	$	(20,000)	8 hrs/site	$	(800)
	Clerical	$50.00/hr	65	40 hrs/site	$	(2,000)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	16 hrs/site	$	(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)	0 hrs/site	$	-
	EP staff	$100.00/hr	65	104 hrs/site	$	(10,400)	0 hrs/site	$	-
	Clerical	$50.00/hr	65	4 hrs/site	$	(200)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	0 hrs/site	$	-	0 hrs/site	$	-
Total Industry Implementation Cost				818 hrs/site	$	(91,400)	70 hrs/site	$	(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: Hostile Action Event Drills and Exercises

The proposed rule language would adopt elements of NRC Bulletin 2005-02 and require licensees to revise drill and exercise scenarios. Specifically, the drill and exercise scenarios would need to 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 would need to submit these scenarios for NRC approval. In addition, licensees would need to revise existing schemes to track implementation of the various scenario objectives.

Assumptions:

(1) All sites would develop 6-year drill and exercise plans and conduct initial exercises by the end of CY09 in response to NRC Bulletin 2005-02.
(2) NRC would review emergency plans and scenarios as they are used by licensees (annual cost, assuming 32.5 are submitted per year).

	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**		**Savings (Cost) Per Site**	**Units**		**Savings (Cost) Per Affected Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Develop and review 6-year plan	Executive	$200.00/hr	65	8 hrs/site	$	(1,600)	0 hrs/site	$	-
	Manager	$150.00/hr	65	40 hrs/site	$	(6,000)	8 hrs/site	$	(1,200)
	EP staff	$100.00/hr	65	80 hrs/site	$	(8,000)	40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	8 hrs/site	$	(400)
	Licensing	$100.00/hr	65	16 hrs/site	$	(1,600)	8 hrs/site	$	(800)
Review and update emergency plan and exercise objective tracking scheme	Executive	$200.00/hr	65	4 hrs/site	$	(800)	0 hrs/site	$	-
	Manager	$150.00/hr	65	80 hrs/site	$	(12,000)	8 hrs/site	$	(1,200)
	EP staff	$100.00/hr	65	160 hrs/site	$	(16,000)	40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	8 hrs/site	$	(400)
	Licensing	$100.00/hr	65	40 hrs/site	$	(4,000)	8 hrs/site	$	(800)
Conduct initial 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)	0 hrs/site	$	-
	Manager	$150.00/hr	65	240 hrs/site	$	(36,000)	0 hrs/site	$	-
	EP staff	$100.00/hr	65	400 hrs/site	$	(40,000)	0 hrs/site	$	-
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	0 hrs/site	$	-	0 hrs/site	$	-
Total Industry Implementation Cost				1,148 hrs/site		($134,800)	128 hrs/site		($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)
	EP staff	$100.00/hr	65	0 hrs/site	$	-	40 hrs/site	$	(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)
	EP staff	$100.00/hr	32.5	0 hrs/site	$	-	16 hrs/site	$	(1,600)
	Clerical	$50.00/hr	32.5	0 hrs/site	$	-	8 hrs/site	$	(400)
	Licensing	$100.00/hr	32.5	0 hrs/site	$	-	8 hrs/site	$	(800)
Total Industry Operations Cost				0 hrs/site	$	-	88 hrs/site		($9,200)

Hostile Action Event Drills and Exercises (continued)

		Cost Inputs		Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**		**Savings (Cost) Per Site**	**Units**		**Savings (Cost) Per Site**
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (Bulletin preparation)	Executive	$100.00/hr		0 hrs	$	-	0 hrs	$	-
	Manager	$100.00/hr		0 hrs	$	-	120 hrs	$	(12,000)
	Staff	$100.00/hr		300 hrs	$	(30,000)	280 hrs	$	(28,000)
	Clerical	$100.00/hr		0 hrs	$	-	60 hrs	$	(6,000)
	Attorney	$100.00/hr		0 hrs	$	-	60 hrs	$	(6,000)
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. 0	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 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 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 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	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	$	-
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	$	-
Total FEMA Implementation Cost				5,880 hrs	$	(588,000)			
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				**14,138 hrs**			**1,376 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 (which is 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 proposed rule would clarify the need to review and update the evacuation time estimates (ETEs) following the initial licensing of a nuclear power plant. Specifically, the proposed rule would establish 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 population increases or decreases by 10% from the population that formed the basis for the currently approved ETE.

Assumptions:

(1) 50 percent of sites would require an initial update to ETEs.

(2) Although sites reassess population annually, ETE updates would be needed once every 10 years due to new Census data.

	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**	**Savings (Cost) Per Site**	**Units**	**Savings (Cost) Per Affected 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)
	EP staff	$100.00/hr	65	n/a		32 hrs/site	$	(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)
	Manager	$150.00/hr	65	n/a		8 hrs/site	$	(1,200)
	EP staff	$100.00/hr	65	n/a		40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	n/a		0 hrs/site	$	-
	Licensing	$100.00/hr	65	n/a		8 hrs/site	$	(800)
Significant initial update to existing ETEs		$ 200,000	32.5	n/a		1 estimate/site	$	(200,000)
Total Industry Implementation Cost						100 hrs/site	$	(211,200)
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)
	EP staff	$100.00/hr	65	n/a		8 hrs/site	$	(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)
	Manager	$150.00/hr	6.5	n/a		8 hrs/site	$	(1,200)
	EP staff	$100.00/hr	6.5	n/a		40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	6.5	n/a		0 hrs/site	$	-
	Licensing	$100.00/hr	6.5	n/a		8 hrs/site	$	(800)
Update ETEs		$ 200,000	65	n/a		1 time/10 years	$	(20,000)
Total Industry Operations Cost						72 hrs/site	$	(28,200)
NRC IMPLEMENTATION (ONE-TIME)								
Review and revise guidance (NUREG guidance document)	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		80 hrs	$	(8,000)
	Clerical	$100.00/hr		n/a		8 hrs	$	(800)
	Attorney	$100.00/hr		n/a		8 hrs	$	(800)
Conduct ETE study (NRC contractor)		$ 120,000		n/a		1	$	(120,000)
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						300 hrs	$	(150,000)
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	Unit Cost	Sites Affected	Incremental Effort Due to Units	Savings (Cost) Per Site	Additional Incremental Effort Due to Units	Savings (Cost) Per 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						**640 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 (which is 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 ensure that personnel will be available to carry out pre-planned actions, such as traffic control and route alerting, during a hostile action event directed at the plant. The proposed rule would implement elements of Commission Order EA-02-26 explicitly requiring licensees to coordinate with OROs to increase assurance that adequate resources would be available and pre-planned actions would be carried out when needed. Licensees would need to develop plans, procedures, and training regarding notification, activation, and coordination between site personnel and OROs.

Assumptions:

(1) New training and drilling for coordination with OROs would be integrated within the current training program coursework and delivered at the same time as other EP training without extending the duration of training courses.

	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**		**Savings (Cost) Per Site**	**Units**		**Savings (Cost) Per Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Review and update ORO coordination protocol and interact with ORO	Executive	$200.00/hr	65	40 hrs/site	$	(8,000)	0 hrs/site	$	-
	Manager	$150.00/hr	65	80 hrs/site	$	(12,000)	8 hrs/site	$	(1,200)
	EP staff	$100.00/hr	65	160 hrs/site	$	(16,000)	40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	0 hrs/site	$	-	0 hrs/site	$	-
Review and revise existing procedures and plans	Executive	$200.00/hr	65	8 hrs/site	$	(1,600)	4 hrs/site	$	(800)
	Manager	$150.00/hr	65	40 hrs/site	$	(6,000)	8 hrs/site	$	(1,200)
	EP staff	$100.00/hr	65	160 hrs/site	$	(16,000)	40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	8 hrs/site	$	(400)
	Licensing	$100.00/hr	65	40 hrs/site	$	(4,000)	16 hrs/site	$	(1,600)
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)	0 hrs/site	$	-
	EP staff	$100.00/hr	65	80 hrs/site	$	(8,000)	20 hrs/site	$	(2,000)
	Clerical	$50.00/hr	65	8 hrs/site	$	(400)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	0 hrs/site	$	-	0 hrs/site	$	-
Total Industry Implementation Cost				656 hrs/site	$	(74,800)	144 hrs/site	$	(15,200)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (NUREG 0654 supplement, Interim Staff Guidance, Temporary Instruction 2515/148 Rev 2)	Executive	$100.00/hr		8 hrs	$	(800)	8 hrs	$	(800)
	Manager	$100.00/hr		30 hrs	$	(3,000)	20 hrs	$	(2,000)
	Staff	$100.00/hr		290 hrs	$	(29,000)	240 hrs	$	(24,000)
	Clerical	$100.00/hr		40 hrs	$	(4,000)	8 hrs	$	(800)
	Attorney	$100.00/hr		10 hrs	$	(1,000)	20 hrs	$	(2,000)
Total NRC Implementation Cost				378 hrs	$	(37,800)	296 hrs/site	$	(29,600)
NRC OPERATIONS (ANNUAL)									
None.									
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)									
State and Local Government coordination	Executive	$100.00/hr	65	40 hrs/site	$	(4,000)	0 hrs/site	$	-
	Manager	$100.00/hr	65	80 hrs/site	$	(8,000)	0 hrs/site	$	-
	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)	0 hrs/site	$	-
	Attorney	$100.00/hr	65	16 hrs/site	$	(1,600)	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)
FEMA to develop and revise guidance and supplement to NUREG 0654	Executive	$100.00/hr		0 hrs	$	-	8 hrs	$	(800)
	Manager	$100.00/hr		0 hrs	$	-	20 hrs	$	(2,000)
	Staff	$100.00/hr		0 hrs	$	-	240 hrs	$	(24,000)
	Clerical	$100.00/hr		0 hrs	$	-	8 hrs	$	(800)
	Attorney	$100.00/hr		0 hrs	$	-	20 hrs	$	(2,000)
Total State and Local Government Implementation Cost				576 hrs/site	$	(57,600)	412 hrs	$	(41,200)
OTHER GOVERNMENT OPERATIONS (ANNUAL)									
None.									
TOTAL				**1,610 hrs**			**852 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 Multiple Responsibilities - Nuclear Power Reactor Licensees

The current regulations do not clearly state that on-shift nuclear power reactor personnel assigned to emergency plan implementation must not have multiple emergency responsibilities that would prevent them from performing their primary plan tasks. The proposed rule would codify 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, and would establish criteria for shift staffing responsibilities to increase assurance that responders are not overburdened. This change would require nuclear power reactor licensees to conduct a job task analysis and review plans, procedures, and training regarding assignment of multiple responsibilities, and to re-assign responsibilities if necessary.

Assumptions:

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

	Cost Inputs			Incremental Effort Due to Order & Bulletin			Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**		**Savings (Cost) Per Site**	**Units**		**Savings (Cost) Per Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)									
Conduct job task analysis - Nuclear power reactor licensees	Executive	$200.00/hr	65	0 hrs/site	$	-	4 hrs/site	$	(800)
	Manager	$150.00/hr	65	0 hrs/site	$	-	16 hrs/site	$	(2,400)
	EP Staff	$100.00/hr	65	0 hrs/site	$	-	160 hrs/site	$	(16,000)
	Clerical	$50.00/hr	65	0 hrs/site	$	-	40 hrs/site	$	(2,000)
	Licensing	$100.00/hr	65	0 hrs/site	$	-	16 hrs/site	$	(1,600)
Review and revise emergency plan - Nuclear power reactor licensees	Executive	$200.00/hr	65	8 hrs/site	$	(1,600)	0 hrs/site	$	-
	Manager	$150.00/hr	65	40 hrs/site	$	(6,000)	8 hrs/site	$	(1,200)
	EP Staff	$100.00/hr	65	160 hrs/site	$	(16,000)	40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	40 hrs/site	$	(4,000)	8 hrs/site	$	(800)
Review and revise procedures - Nuclear power reactor licensees	Executive	$200.00/hr	65	8 hrs/site	$	(1,600)	0 hrs/site	$	-
	Manager	$150.00/hr	65	40 hrs/site	$	(6,000)	8 hrs/site	$	(1,200)
	EP Staff	$100.00/hr	65	320 hrs/site	$	(32,000)	80 hrs/site	$	(8,000)
	Clerical	$50.00/hr	65	32 hrs/site	$	(1,600)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	40 hrs/site	$	(4,000)	8 hrs/site	$	(800)
Review and revise 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)	0 hrs/site	$	-
	EP Staff	$100.00/hr	65	120 hrs/site	$	(12,000)	40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	16 hrs/site	$	(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)	0 hrs/site	$	-
	EP Staff	$100.00/hr	65	120 hrs/site	$	(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	$	-
Develop industry white paper	Executive	$200.00/hr	65	8 hrs/site	$	(1,600)	0 hrs/site	$	-
	Manager	$150.00/hr	65	24 hrs/site	$	(3,600)	0 hrs/site	$	-
	EP Staff	$100.00/hr	65	80 hrs/site	$	(8,000)	0 hrs/site	$	-
	Clerical	$50.00/hr	65	16 hrs/site	$	(800)	0 hrs/site	$	-
	Licensing	$100.00/hr	65	16 hrs/site	$	(1,600)	0 hrs/site	$	-
Total Industry Implementation Cost				1,116 hrs/site	$	(115,800)	428 hrs/site	$	(42,800)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (Temporary Instructions, NEI White Paper, Interim Staff Guidance)	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				**1,494 hrs**			**1,084 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 events. The proposed rule would codify generically applicable requirements similar to those elements of Commission Order 02-26 and industry initiatives subsequent to NRC Bulletin 2005-02 directing licensees to provide alternative facilities for use during hostile action events when onsite facilities (technical support center and/or near-site emergency operations facility) are not available (e.g., due to emergency conditions). This change would require licensees to review and revise their plans, procedures, and training regarding ERO augmentation during a hostile action event. In addition, some sites may need to lease and equip a new facility to serve as the alternative facility.

Assumptions:

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

	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Proposed Rule	
Requirement		**Unit Cost**	**Sites Affected**	**Units**	**Savings (Cost) Per Site**	**Units**	**Savings (Cost) Per Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)							
Review and revise emergency plan	Executive	$200.00/hr	65	0 hrs/site	$ -	10 hrs/site	$ (2,000)
	Manager	$150.00/hr	65	0 hrs/site	$ -	20 hrs/site	$ (3,000)
	EP staff	$100.00/hr	65	0 hrs/site	$ -	40 hrs/site	$ (4,000)
	Clerical	$50.00/hr	65	0 hrs/site	$ -	24 hrs/site	$ (1,200)
	Licensing	$100.00/hr	65	0 hrs/site	$ -	40 hrs/site	$ (4,000)
Review and revise procedures	Executive	$200.00/hr	65	8 hrs/site	$ (1,600)	0 hrs/site	$ -
	Manager	$150.00/hr	65	24 hrs/site	$ (3,600)	8 hrs/site	$ (1,200)
	EP staff	$100.00/hr	65	80 hrs/site	$ (8,000)	16 hrs/site	$ (1,600)
	Clerical	$50.00/hr	65	40 hrs/site	$ (2,000)	0 hrs/site	$ -
	Licensing	$250.00/hr	65	8 hrs/site	$ (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)	8 hrs/site	$ (1,200)
	EP staff	$100.00/hr	65	40 hrs/site	$ (4,000)	16 hrs/site	$ (1,600)
	Clerical	$50.00/hr	65	16 hrs/site	$ (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		0	($2,000)
Total Industry Implementation Cost				225 hrs/site		182 hrs/site	$ (21,800)
INDUSTRY OPERATIONS (ANNUAL)							
Maintain procedures and equipment for alternative facilities		$1,000/site	65	1 per site		0	$ (1,000)
Total Industry Operations Cost							$ (1,000)
NRC IMPLEMENTATION (ONE-TIME)							
Review and revise guidance (Temporary Instructions, bulletin preparation, new regulatory guide)	Executive	$100.00/hr		8 hrs	(800)	20 hrs	$ (2,000)
	Manager	$100.00/hr		30 hrs	(3,000)	40 hrs	$ (4,000)
	Staff	$100.00/hr		390 hrs	(39,000)	160 hrs	$ (16,000)
	Clerical	$100.00/hr		40 hrs	(4,000)	40 hrs	$ (4,000)
	Attorney	$100.00/hr		10 hrs	(1,000)	20 hrs	$ (2,000)
Total NRC Implementation Cost				478 hrs	(47,800)	280 hrs	$ (28,000)
NRC OPERATIONS (ANNUAL)							
None.							
OTHER GOVERNMENT IMPLEMENTATION (ONE-TIME)							
None.							
OTHER GOVERNMENT OPERATIONS (ANNUAL)							
None.							
TOTAL				**703 hrs**		**462 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: Reduction in Effectiveness - Nuclear Power Reactor Licensees

Current regulations require nuclear power reactor licensees to "maintain in effect" their emergency plan. The proposed rule language would clarify 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 proposed rule, nuclear power reactor licensees would need to revise procedures and training to address the new process for emergency plan changes (i.e., through 10 CFR 50.90 submittals). In addition, for emergency plan changes that do not result in a reduction in effectiveness, nuclear power reactor licensees would need to submit to NRC 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 would be new and separate from other training, but would be delivered at the same time as 10 CFR 50.90 training.
(2) NRC would receive 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 would be comparable to the cost of preparing current emergency plan change requests.
(3) One of the 12 submittals would result in a hearing. Hearings would impose incremental costs on licensees and NRC.
(4) NRC annual cost associated with participating in hearing process includes time of ASLB judges and staff.

	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**	**Savings (Cost) Per Site**	**Units**	**Savings (Cost) Per Affected 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)
	EP Staff	$100.00/hr	65	n/a		60 hrs/site	$	(6,000)
	Clerical	$50.00/hr	65	n/a		40 hrs/site	$	(2,000)
	Licensing	$100.00/hr	65	n/a		16 hrs/site	$	(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)
	EP Staff	$100.00/hr	65	n/a		40 hrs/site	$	(4,000)
	Clerical	$50.00/hr	65	n/a		20 hrs/site	$	(1,000)
	Licensing	$100.00/hr	65	n/a		0 hrs/site	$	-
Total Industry Implementation Cost						200 hrs/site	$	(18,200)
INDUSTRY OPERATIONS (ANNUAL)								
Participate in hearing process	Executive	$200.00/hr	1	n/a		48 hrs/site	$	(9,600)
	Manager	$150.00/hr	1	n/a		160 hrs/site	$	(24,000)
	EP Staff	$100.00/hr	1	n/a		160 hrs/site	$	(16,000)
	Clerical	$50.00/hr	1	n/a		40 hrs/site	$	(2,000)
	Licensing	$100.00/hr	1	n/a		160 hrs/site	$	(16,000)
	Attorney	$250.00/hr	1	n/a		320 hrs/site	$	(80,000)
Submit 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)
	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)
NRC IMPLEMENTATION (ONE-TIME)								
Issue new Regulatory Guide	Executive	$100.00/hr		n/a		0 hrs	$	-
	Manager	$100.00/hr		n/a		160 hrs	$	(16,000)
	Staff	$100.00/hr		n/a		240 hrs	$	(24,000)
	Clerical	$100.00/hr		n/a		80 hrs	$	(8,000)
	Attorney	$100.00/hr		n/a		40 hrs	$	(4,000)
Total NRC Implementation Cost						520 hrs	$	(52,000)
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						**2,530 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 (which is shown above).

A.8.b: Reduction in Effectiveness - Non-Power Reactors

Current regulations require non-power reactors to "maintain in effect" their emergency plan. The proposed rule language would clarify 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 proposed rule, non-power reactors would need to revise procedures and training to address the new process for emergency plan changes (i.e., through 10 CFR 50.90 submittals). In addition, for emergency plan changes that do not result in a reduction in effectiveness, non-power reactors would need to submit to the NRC the analysis prepared to demonstrate the change does not reduce the effectiveness of the plan.

Assumptions:

(1) Training is only for EP staff. Training would be new and separate from other training, but would be delivered at the same time as other EP training.
(2) NRC would receive less than one 10 CFR 50.90 submittal (i.e., emergency plan change that reduces the effectiveness of the plan) per year.

	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Proposed Rule	
Requirement		**Unit Cost**	**Sites Affected**	**Units**	**Savings (Cost) Per Site**	**Units**	**Savings (Cost) Per Affected Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)							
Review and revise existing procedures - Research and test 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)
	Clerical	$50.00/hr	32	n/a		40 hrs/site	$ (2,000)
	Licensing	$100.00/hr	32	n/a		0 hrs/site	$ -
Review and revise training - Research and test 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)
	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)
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 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 (which is shown above).

A.9: Emergency Classification Timeliness

The current emergency preparedness regulations do not establish timeliness criteria for the emergency classification process. The proposed rule would require licensees to have the capability to classify and declare an emergency within 15 minutes of the availability of information that an EAL has been or may be exceeded. Licensees are already complying with the proposed rule language via a voluntary initiative that accomplishes the intent of the proposed rule. Licensees, however, would need to 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 would be 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 would not incur operating costs because the proposed rule only requires the capability to classify and declare an emergency within 15 minutes.

	Cost Inputs			Incremental Effort Due to Voluntary Initiative (PI)			Additional Incremental Effort Due to Proposed Rule		
Requirement		**Unit Cost**	**Sites Affected**	**Units**		**Savings (Cost) Per Site**	**Units**		**Savings (Cost) Per 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)	4 hrs/site	$	(600)
	EP Staff	$100.00/hr	65	80 hrs/site	$	(8,000)	16 hrs/site	$	(1,600)
	Clerical	$50.00/hr	65	20 hrs/site	$	(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)	4 hrs/site	$	(600)
	EP Staff	$100.00/hr	65	40 hrs/site	$	(4,000)	16 hrs/site	$	(1,600)
	Clerical	$50.00/hr	65	20 hrs/site	$	(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)	40 hrs/site	$	(4,400)
INDUSTRY OPERATIONS (ANNUAL)									
None.									
NRC IMPLEMENTATION (ONE-TIME)									
Review and revise guidance (e.g., withdraw EPPOS-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 the capabilities and functional requirements for a consolidated EOF (such as capabilities to handle simultaneous events at two or more sites). The proposed rule would establish a performance standard for licensees that plan to consolidate multiple EOFs into one facility. The analysis assumes there are no incremental costs to licensees for this proposed rule change because the rule does not require consolidation of EOFs. Rather, a licensee would 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 would incur costs to revise guidance.

	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Proposed Rule	
Requirement		**Unit Cost**	**Sites Affected**	**Units**	**Savings (Cost) Per Site**	**Units**	**Savings (Cost) Per Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)							
None.							
INDUSTRY OPERATIONS (ANNUAL)							
None.							
NRC IMPLEMENTATION (ONE-TIME)							
Review and revise guidance (NUREG 0654 supplement, NUREG 0696, NUREG 0737 supplement 1, Interim Staff Guidance)	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 proposed rule would require licensees to select and implement a backup method of alerting and notification to be used 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 would not be fully-compliant with the proposed rule. They would 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 proposed rule. These sites, however, would need to review and verify their procedures to ensure there are adequate resources during hostile actions.
(3) Twelve sites do not have any backup means of alerting. Six of the sites would need to implement backup power to sirens, while the other 6 would 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 would incur incremental costs to acquire a backup EAS capability.

	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Proposed Rule	
Requirement		**Unit Cost**	**Sites Affected**	**Units**	**Savings (Cost) Per Site**	**Units**	**Savings (Cost) Per Affected Site**
INDUSTRY IMPLEMENTATION (ONE-TIME)							
Review and select means of backup ANS	Executive	$200.00/hr	45	n/a		40 hrs/site	$ (8,000)
	Manager	$150.00/hr	45	n/a		80 hrs/site	$ (12,000)
	EP Staff	$100.00/hr	45	n/a		480 hrs/site	$ (48,000)
	Clerical	$50.00/hr	45	n/a		8 hrs/site	$ (400)
	Licensing	$100.00/hr	45	n/a		40 hrs/site	$ (4,000)
Implement backup alerting system	Upgrade sirens	$10,000/siren	6	n/a		50 sirens/site	$ (500,000)
	Implement route alerting	$50,000/site	6	n/a		1 plan/site	$ (50,000)
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)
	EP Staff	$100.00/hr	53	n/a		40 hrs/site	$ (4,000)
	Clerical	$50.00/hr	53	n/a		0 hrs/site	$ -
	Licensing	$100.00/hr	53	n/a		8 hrs/site	$ (800)
Implement back-up to siren activation system		$50,000/site	21	n/a		1 system/site	$ (50,000)
Implement EAS backup notification system		$50,000/site	33	n/a		1 system/site	$ (50,000)
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)
	Manager	$150.00/hr	12	n/a		60 hrs/site	$ (9,000)
	EP Staff	$100.00/hr	12	n/a		360 hrs/site	$ (36,000)
	Clerical	$50.00/hr	12	n/a		0 hrs/site	$ -
	Licensing	$100.00/hr	12	n/a		30 hrs/site	$ (3,000)
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)
	Manager	$150.00/hr	21	n/a		8 hrs/site	$ (1,200)
	EP Staff	$100.00/hr	21	n/a		80 hrs/site	$ (8,000)
	Clerical	$50.00/hr	21	n/a		8 hrs/site	$ (400)
	Licensing	$100.00/hr	21	n/a		8 hrs/site	$ (800)
Revise FEMA REP-10 ANS design report	Executive	$200.00/hr	33	n/a		4 hrs/site	$ (800)
	Manager	$150.00/hr	33	n/a		24 hrs/site	$ (3,600)
	EP Staff	$100.00/hr	33	n/a		240 hrs/site	$ (24,000)
	Clerical	$50.00/hr	33	n/a		16 hrs/site	$ (800)
	Licensing	$100.00/hr	33	n/a		24 hrs/site	$ (2,400)
Total Industry Implementation Cost						1,604 hrs/site	$ (826,000)
INDUSTRY OPERATIONS (ANNUAL)							
Maintain back-up to siren system		$200/siren	27	n/a		50 sirens/site	$ (10,000)
Maintain route alerting system		$5,000/site	38	n/a		1 system/site	$ (5,000)
Maintain back-up to EAS		$10,000/site	65	n/a		1 system/site	$ (10,000)
Total Industry Operations Cost							$ (25,000)
NRC IMPLEMENTATION (ONE-TIME)							
Review and revise guidance (NUREG-0654, 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)

	Cost Inputs			Incremental Effort Due to Order & Bulletin		Additional Incremental Effort Due to Proposed Rule	
Requirement		**Unit Cost**	**Sites Affected**	**Units**	**Savings (Cost) Per Site**	**Units**	**Savings (Cost) Per Affected 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)
Total FEMA Implementation Cost						520 hrs	$ (52,000)
OTHER GOVERNMENT OPERATIONS (ANNUAL)							
None.							
TOTAL						**2,280 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 (which is shown above).

DRAFT SUPPORTING STATEMENT
FOR 10 CFR PART 50
EMERGENCY PREPAREDNESS
PROPOSED RULE

Description of the Information Collection

The U.S. Nuclear Regulatory Commission (NRC) regulations in 10 CFR 50.47, §50.54, and 10 CFR Part 50 Appendix E prescribe requirements for emergency preparedness (EP) plans and coordination in protecting nuclear power reactors, non-power reactors, and the surrounding community against consequences resulting from accidents and sabotage. The proposed rule contains reporting and recordkeeping requirements, including those for third parties, which are necessary to help ensure that an adequate level of emergency preparedness is attained by nuclear power reactor licensees, non-power reactors, and the surrounding community. This revision addresses changes in information collections contained in the proposed rule, "Emergency Preparedness Rulemaking." Specifically, the draft proposed rule results in changes to information collection requirements in §50.47, §50.54, and 10 CFR Part 50 Appendix E.

Following the terrorist attacks of September 11, 2001, the NRC staff evaluated the EP planning basis given the resulting threat environment and concluded that it remained 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. Advances in communication technologies and lessons learned through EP program implementation have revealed the benefit in providing clarity and enhancements to EP regulations and guidance.

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. The proposed rulemaking: (1) codifies emergency preparedness requirements imposed by Commission order after the terrorist attacks of September 11, 2001, as modified based upon experience and insights gained by the Commission during implementation, (2) codifies emergency preparedness 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 operating nuclear power reactors that would be affected by this rulemaking are located at 65 sites, with each facility consisting of one or more reactor unit(s). In general, emergency preparedness is addressed in a site-specific manner because it is dependent on the physical layout of the entire site. As a result, this supporting statement estimates the burden associated with reporting and recordkeeping based on 65 sites. In addition, operating non-power reactors would be affected by one of the regulatory initiatives included in this rulemaking. There are 32 operating non-power reactor sites. Therefore, this supporting statement also estimates the burden associated with reporting and recordkeeping for these additional 32 sites.

A. JUSTIFICATION

1. Need for and Practical Utility of the Information

In general, the reports and records fall into one of two categories and are necessary for the reasons stated below:

a) Information describing the content and planned operation of the licensee's facility in the event of an emergent and hazardous situation. This information is essential to enable the NRC to make a determination as to the adequacy of the licensee's program to meet regulatory requirements and protect the health and safety of the surrounding public, emergency workers, and the environment.

b) Information describing the third party interactions and relations in fulfillment of NRC's obligation to the health and safety of the public, emergency workers, and the environment. The information sharing and cooperation is essential to prevent and quickly act in the event of an emergent and hazardous situation.

Specific requirements for reports and records in the proposed amendments to Part 50 are identified below.

Section 50.47(b)(10) requires nuclear power reactor licensees to review and update their existing evacuation time estimates (ETEs) on a periodic basis. As a result, licensees must revise their existing procedures to account for this new requirement (this one-time recordkeeping burden is listed in Table 1). The new rule language also requires licensees to periodically update their ETEs (NRC assumes every 10 years). The burden associated with periodically revising and maintaining ETEs is listed as an annualized recordkeeping burden in Table 2. In addition, licensees must submit these updated ETEs to NRC for review and approval. This annual reporting burden is listed in Table 4. NRC also assumes that each licensee will provide stakeholder groups, including state and local government agencies, with the updated ETE for their review and approval (six stakeholder groups per site x 65 sites = 390 third parties; see Table 5).

Section 50.54(q)(4) defines the process by which a nuclear power reactor licensee or a non-power reactor licensee would request prior approval of a change to the emergency plan that the licensee has determined constitutes a reduction in effectiveness of the plan. The new rule language states that licensees pursuing such changes would be required to apply for an amendment to the license as provided in Section 50.90. Nuclear power reactors and non-power reactors must revise existing procedures and training documents to account for this new process (listed as a one-time recordkeeping burden in Table 1). In addition, the NRC estimates that 12 nuclear power reactor sites per year will submit to NRC, license amendments for emergency plan changes that result in a reduction in effectiveness. The annualized reporting burden for these license amendment submittals is listed in Table 4.

Section 50.54(q)(5) requires nuclear power reactor licensees and non-power reactors to retain a record of all changes to the emergency plans made without prior NRC approval for a period of three years from the date of the change. Table 2 contains the annual recordkeeping burden associated with this section of the proposed rule. The section

also requires nuclear power reactors and non-power reactors to submit a report of each emergency plan change, including its evaluation, within 30 days of the change. Table 4 lists the annualized reporting burden associated with this section of the proposed rule. The NRC estimates that only nuclear power reactor licensees will make changes to their emergency plans, and that each site will submit one analysis of emergency plan changes per year to NRC.

Section 50.54(q)(6) requires nuclear power reactor licensees and non-power reactors to 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. Table 2 lists the annual recordkeeping burden associated with this proposed rule requirement.

Appendix E IV Introduction requires nuclear power reactor licensees to periodically revise their ETEs to reflect demographic changes that occur within the emergency planning zone (EPZ). The recordkeeping burden associated with this proposed rule requirement are described and shown under Section 50.47(b)(10) in Tables 1 and 2.

Appendix E IV A.7. requires nuclear power reactor licensees to confirm that offsite response organization (ORO) resources, such as local law enforcement, firefighting, and medical services, have not been assigned any duties in offsite emergency plans that would limit their availability to respond to an emergency at the plant site. The proposed rule language requires licensees to revise existing ORO coordination protocol, procedures, and training documents (listed as a one-time recordkeeping burden in Table 1). This analysis also assumes that each licensee will need to interface with federal, state, and local government agencies regarding the availability of resources. As a result, NRC assumes that these third parties (one federal, one state and one local agency per site x 65 sites = 195 third parties) will need to report to the licensee on the availability of resources (see Table 5).

Appendix E IV A.9. requires nuclear power reactor licensees to conduct a detailed analysis demonstrating 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. To comply with this new requirement, licensees must revise their procedures, emergency plan, and training documents. Table 1 contains the burden associated with these one-time recordkeeping activities.

Appendix E IV C.2. requires licensees to establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes of receiving indications that an emergency action level has been, or may be, exceeded. The proposed rule language requires licensees to revise existing procedures and training documents (listed as a one-time recordkeeping burden in Table 1).

Appendix E IV D.3. requires licensees to have backup alert and notification system (ANS) methods for both the alert and notification functions. The proposed rule language requires licensees to revise existing administrative controls, maintenance procedures, training, and testing programs (listed as a one-time recordkeeping burden in Table 1). This analysis also assumes that each licensee will need to interface with federal, state, and local government agencies regarding the backup ANS methods. As a result, NRC

assumes that these third parties (one federal, one state and one local agency per site x 65 sites = 195 third parties) will need to document licensee changes to alerting and notification systems (see Table 5).

Appendix E IV E.8.d. requires licensees or applicants to identify alternative facilities to function as staging areas for augmentation of emergency response organization (ERO) staff during hostile action-based events. To implement this new requirement, licensees must revise their procedures, emergency plan, and training documents to comply with the proposed rule language. Table 1 contains the burden associated with these one-time recordkeeping activities.

Appendix E IV F.2.a. requires licensees to submit, for NRC review and approval, exercise scenarios for full participation exercises. NRC assumes that licensees will revise all of their exercise scenarios upfront to comply with the proposed rule language. Table 1 contains the burden associated with this one-time recordkeeping activity. In addition, NRC assumes that licensees will submit their revised exercise scenarios upfront to NRC for review and approval. Table 3 contains the burden associated with this one-time reporting activity.

Appendix E IV F.2.b. requires licensees to submit, for NRC review and approval, scenarios for their onsite biennial exercises. In addition, the licensee must 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 one-time recordkeeping and reporting burdens associated with this proposed rule requirement are described and shown under Appendix E IV F.2.a. In addition, NRC assumes that there is an annual recordkeeping burden associated with licensees documenting and tracking their compliance with the proposed drill and exercise requirements (as listed in Table 2).

Appendix E IV I. requires licensees to provide an expanded range of protective measures for onsite personnel that would be appropriate for protection against hostile action-based events. Licensees must revise their existing protective measures, procedures, emergency plan, and training documents to comply with the proposed rule language. Table 1 contains the burden associated with these one-time recordkeeping activities.

2. Agency Use of the Information

The information included in the applications, reports, and records is reviewed by the NRC staff to assess the adequacy of the applicant's physical plant, equipment, organization, training, experience, procedures, and plans to protect nuclear power reactors, non-power reactors, and the surrounding community against radiological consequences resulting from accidents or sabotage.

3. Reduction of Burden Through Information Technology

There are no legal obstacles to reducing the burden associated with this information collection. The NRC encourages respondents to use information technology when it

would be beneficial to them. NRC issued a regulation on October 10, 2003 (68 FR 58791), consistent with the Government Paperwork Elimination Act, which allows its licensees, vendors, applicants, and members of the public the option to make submissions electronically via CD-ROM, e-mail, special Web-based interface, or other means. It is estimated that 2 percent of the potential responses are filed electronically.

4. Effort to Identify Duplication and Use Similar Information

There is no duplication of requirements. NRC has in place an ongoing program to examine all information collections with the goal of eliminating all duplication and/or unnecessary information collections.

5. Effort to Reduce Small Business Burden

The NRC has determined that the affected entities are not small entities or businesses as those terms are used in the Regulatory Flexibility Act.

6. Consequences to Federal Program or Policy Activities if the Collection Is Not Conducted or Is Conducted Less Frequently

If the information were not collected, or collected less frequently, the NRC could be unaware for extended periods of time whether the revised emergency plans are adequate to protect the health and safety of the public, and the environment. Without a timely review of information, changes to personnel, procedures, equipment, or facilities, or failing to maintain an effective emergency plan could adversely affect emergency preparedness and response, without NRC imposing required corrective measures.

7. Circumstances which Justify Variations from OMB Guidelines

10 CFR 50.54(q) requires that the licensee retain the emergency plan, and each change that reduces the effectiveness of the plan, as a record until the Commission terminates the license, which is initially issued for 40 years.

8. Consultations Outside the NRC

During the development of the proposed rule language, the NRC staff conducted a public meeting and provided the public with the opportunity to comment (published in the Federal Register on March 12, 2008, 73 FR 13157).

The NRC staff held a second public meeting on July 8, 2008 to discuss public comments received to date on the draft preliminary rule language.

In addition, the NRC will publish this information collection requirement in the Federal Register to provide the public with the opportunity to comment. The NRC will respond to the public comments received.

9. Payment or Gift to Respondents

Not applicable.

10. Confidentiality of Information

Confidential and proprietary information is protected in accordance with NRC regulations at 10 CFR 9.17(a) and 10 CFR 2.390(b).

11. Justification for Sensitive Questions

Questions of a sensitive nature and other matters that are commonly considered private, such as personal telephone numbers, are needed in the event of a nuclear emergency. This information is protected from public disclosure under the Privacy Act of 1974, as amended, and in accordance with 10 CFR 2.390.

12. Estimate of Industry Burden and Cost

The burden associated with the information collections is given in Table 1 for one-time recordkeeping burden, Table 2 for annual recordkeeping burden, Table 3 for one-time reporting burden, Table 4 for annual reporting burden, and Table 5 for third-party burden. Based on NRC staff's best estimate, the incremental industry burden to generate, maintain, retain, disclose, and provide information related to the radiological emergency planning activities covered by this proposed rule is estimated to total 177,242 hours with an annualized cost estimate to the industry of $42,183,596 (177,242 hours x $238 per hour).

13. Estimate of Other Additional Costs

The quantity of records to be maintained is roughly proportional to the recordkeeping burden and therefore can be used to calculate approximate records storage costs. Based on the number of pages maintained for a typical clearance, the records storage cost has been determined to be equal to .0004 x the recordkeeping burden cost. Therefore, the records storage cost for the emergency planning records in Tables 1 and 2 is estimated to be $7,861 (.0004 x 82,576 hours x $238).

14. Estimated Annualized Cost to the Federal Government

Table 6 describes the estimated annual cost to the NRC for administration of the reporting and recordkeeping requirements. The cost is fully recovered through fee assessments to NRC licensees pursuant to 10 CFR Parts 170 and/or 171. The total estimated cost to the government is estimated as $558,348 (2,346 hours x $238 per hour).

15. Reasons for Changes in Burden or Cost

The estimated incremental recordkeeping and reporting burden of the proposed rule is 177,242 hours (82,576 hours recordkeeping from Tables 1 and 2, plus 2,236 hours reporting from Tables 3 and 4, plus 92,430 hours third-party from Table 5). This

estimate includes the one-time and annual requirements of the proposed rule. Of this, 72,769 hours are for one-time reporting and recordkeeping requirements (Tables 1 and 3). Therefore, the proposed burden increase will be reduced by approximately 41 percent once the one-time requirements have been completed. The proposed rule changes numerous information collection requirements in §50.47, §50.54, and 10 CFR Part 50 Appendix E.

The factors that account for the increased burden include the following: The proposed rule requires licensees to (1) update ETEs on a periodic basis; (2) submit exercise scenarios to NRC for review and approval; (3) submit changes in emergency plans for NRC review and approval in accordance with 10 CFR 50.90; (4) coordinate with state, local, and federal agencies regarding emergency response resources; and (5) develop procedures addressing protective measures for onsite personnel. The proposed rule contains these new provisions that include reporting and recordkeeping burdens that were not part of previous estimates.

16. Publication for Statistical Use

This information will not be published for statistical use.

17. Reason for Not Displaying the Expiration Date

The requirement is contained in a regulation. Amending the *Code of Federal Regulations* to display information that, in an annual publication, could become obsolete, would be unduly burdensome and too difficult to keep current.

18. Exceptions to the Certification Statement

There are no exceptions.

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

Statistical methods are not used in this collection of information.

Table 1
10 CFR Part 50 Estimated One-Time Recordkeeping Industry Burden

Section	No. of Recordkeepers [a]	No. of Records per Recordkeeper [b]	Annualized One-Time Hours per Recordkeeper [b x # of hours]	Total One-Time Burden [a x c]
50.47 (b)(10)	65	1	33	2,145
50.54 (q)(4)	97	1	62	6,014
Appendix E IV Intro	Burden shown in 50.47(b)(10)			
Appendix E IV A.7.	65	1	48	3,120
Appendix E IV A.9.	65	1	143	9,295
Appendix E IV C.2.	65	1	13	845
Appendix E IV D.3.	65	1	533	34,645
Appendix E IV E.8.d.	65	1	61	3,965
Appendix E IV F.2.a.	65	1	43	2,795
Appendix E IV F.2.b.	Burden shown in Appendix E IV F.2.a.			
Appendix E IV I.	65	1	124	8,060
Total	Varies	Varies	Varies	70,884

Table 2
10 CFR Part 50 Estimated Annual Recordkeeping Industry Burden

Section	No. of Recordkeepers [a]	No. of Records per Recordkeeper [b]	Annual Hours per Recordkeeper [c] [b] x [# of hours]	Total Annual Burden [a] x [c]
50.47 (b)(10)	65	1	108	7,020
50.54(q)(5)	97	1	8	776
50.54 (q)(6)	97	1	8	776
Appendix E IV Intro	Burden shown in 50.47(b)(10)			
Appendix E IV F.2.b.	65	1	48	3,120
Total	Varies	Varies	Varies	11,692

Table 3
10 CFR Part 50 Estimated One-Time Reporting Industry Burden

Section	No. of Respondents	Responses per Respondent	Number of Responses	Burden Hours per Response	Total Burden Hours
Appendix E IV F.2.a.	65	1	1	29	1,885
Appendix E IV F.2.b.	Burden shown in Appendix E IV F.2.a.				
Total	Varies	Varies	1	Varies	1,885

Table 4
10 CFR Part 50 Estimated Annual Reporting Industry Burden

Section	No. of Respondents	Responses per Respondent	Number of Responses	Burden Hours per Response	Total Annual Burden Hours
50.47 (b)(10)	65	1	1	1	65
50.54 (q)(4)	12	1	1	13	156
50.54(q)(5)	65	1	1	2	130
Total	Varies	Varies	3.0	16	351

Table 5
10 CFR Part 50 Estimated Annual Third-Party Burden

Section	Number of Responses	Burden Hours per Response	Total Annual Burden Hours
50.47 (b)(10)	390	75.0	29,250
Appendix E IV A.7.	195	137.0	26,715
Appendix E IV D.3.	195	187.0	36,465
Total	780	Varies	92,430

Number of responses: 987 (65 annualized one-time + 142 annual responses + 780 third-party)

Number of recordkeepers: 0 to 97 depending on the requirement

Recordkeeping Burden: 82,576 hours (70,884 hours annualized one-time + 11,692 hours annual recordkeeping burden)

Reporting Burden: 2,236 hours (1,885 hours annualized one-time + 351 hours annual reporting burden)

Third-Party Burden: 92,430 hours

Total Burden: 177,242 hours (82,576 hours recordkeeping + 2,236 hours reporting + 92,430 hours third-party)

Table 6
Annualized NRC Burden

NRC Action	No. Actions/Year	Burden Hours/Action	Total Hours
Review initial ETE updates	21.7	19	412
Review ongoing ETE updates	6.5	56	364
Review biennial exercise submittals	32.5	20	650
Participate in hearing process to evaluate reductions in the effectiveness of emergency plans	1	920	920
Total	Varies	Varies	2,346

UNITED STATES NUCLEAR REGULATORY COMMISSION

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

PROPOSED RULE 10 CFR 50.47. 50.54 AND APPENDIX E

The Nuclear Regulatory Commission (NRC or Commission) is proposing to amend 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 and 10 CFR Part 50, Appendix E. The proposed amendments would codify generically applicable requirements similar to those previously imposed by Commission orders, update the EP regulations to include actions previously and voluntarily initiated by nuclear power plant licensees, and amend other licensee emergency plan requirements based on a comprehensive review of the NRC's EP regulations and guidance. The proposed requirements would enhance the ability of licensee's in preparing to take and taking certain emergency preparedness 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.

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, including EP response to such events, differ from accident events due to the planned action to maximize damage and loss of life. 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 EP issues as described in SECY-05-0010. As a result, the 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: hostile action 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 EP issues and six non-security 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.

DISCUSSION OF PROPOSED CHANGES:

The proposed amendments to the EP requirements would result in changes to the following existing sections and appendices in Part 50:

- 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”

The proposed amendments would require holders of licenses under 10 CFR Part 50 that are currently subject to EP requirements, applicants for operating licenses under 10 CFR Part 50, or applicants for combined licenses under 10 CFR Part 52, to ensure that their EP programs meet the amended EP requirements. The proposed amendments would similarly apply to applicants for construction permits under Part 50 in their discussion of preliminary plans for coping with emergencies (§50.34(a)(10)) and to applicants for early site permits under Part 52 that choose to propose either major features of an, or a complete and integrated, emergency plan (10 CFR 52.17(b)(2)). The proposed amendments are summarized as follows. The first six are security-related issues associated with Order EA-02-026 or BL-05-02 while the remaining five are non-security-related issues resulting from the comprehensive review of EP regulations and guidance:

1. On-Shift Multiple Responsibilities – The proposed requirements would explicitly limit on-shift emergency response organization (ERO) response duties to ensure that these emergency responders do not become overburdened during an emergency event. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.A.

2. Emergency Action Levels (EALs) for Hostile Action Events – The proposed requirements would amend regulations to require licensees to have EALs for hostile action events. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.B.

3. Emergency Response Organization Augmentation and Alternate Facilities – The proposed requirements would amend regulations to require licensees to identify alternative facilities to support ERO augmentation during hostile action events. This would codify the ICM requirements and the enhancement examples described in BL-05-02. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.E.

4. Licensee Coordination with Offsite Response Organizations (ORO) During Hostile Action Events – The proposed requirements would amend regulations to require licensees to ensure ORO personnel assigned emergency plan implementation duties would be available to do so during hostile action events. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.A.7.

5. Protection for Onsite Personnel – The proposed requirements would amend regulations to require specific emergency plan provisions to protect onsite emergency responders, and other onsite personnel, in emergencies resulting from hostile action events at nuclear power plants. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E by creating a new Section I.

6. Challenging Drills and Exercises – The proposed requirements would amend regulations to require licensees to include hostile action event scenarios in drills and exercises and submit the scenarios for NRC review and approval. These proposed requirements would be incorporated into 10 CFR Part 50 Appendix E, Section IV.F.

7. Backup Means for Alert and Notification Systems – The proposed requirements would amend regulations to require licensees to have backup measures that would be implemented when the primary means of alerting and notification are unavailable. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.D.3.

8. Emergency Classification Timeliness – The proposed requirements would amend regulations to ensure that licensees are able to complete emergency classifications in a timely manner in the event of a radiological emergency. These proposed requirements would be incorporated into 10 CFR Part 50, Appendix E, Section IV.C.

9. Emergency Operations Facility – Performance Based Approach – The proposed requirements would amend regulations to provide performance-based criteria for consolidated EOFs. The NRC is also proposing revisions to regulations to remove the references to an EOF as a "near-site" facility and to incorporate specific EOF distance criteria into the regulations. These proposed requirements would be incorporated into 10 CFR 50.47(b)(3), 10 CFR 50.47(d)(1), 10 CFR 50.54(gg)(1)(i); and 10 CFR Part 50, Appendix E, Sections IV.E.8, IV.E.9.c, and IV.E.9.d.

10. Evacuation Time Estimate (ETE) Updating – The proposed requirements would amend regulations to require licensees to review ETEs periodically. These proposed requirements would be incorporated into 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.

11. Amended Emergency Plan Change Process – The proposed requirements would ensure that (1) the effectiveness of the emergency plans would be maintained, (2) changes to the approved emergency plan would be properly evaluated, and (3) any change that reduces the effectiveness of the plan would be reviewed by the NRC prior to

implementation. These proposed requirements would be incorporated into 10 CFR 50.54(q) and 10 CFR Part 50, Appendix E, Section IV.B.

12. Removal of Completed One-Time Requirements – The NRC staff is proposing to amend regulations to eliminate 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 completed one-time requirements would be removed from 10 CFR 50.54(r), 10 CFR 50.54(s)(1), 10 CR 50.54(s)(2)(i), and 10 CFR 50.54(u).

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would amend 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 Proposed Action:

Following the terrorist events of September 11, 2001, the NRC staff reviewed the emergency preparedness (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 public health, safety and the environment continue to be adequately protected. 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 proposed requirements, the environment would continue to be adequately protected because the process, personnel, and equipment involved would remain essentially the same as those used under the existing EP requirements.

The proposed rule action would result in modification of certain licensee procedures, drills, and exercises for EP; emergency action levels would include consideration of potential hostile actions; and licensees would be required to have a planned backup to their Alert and Notification System (ANS). The rule action would also change the requirement that emergency response facilities be located near the licensee's reactor and that licensees should have alternative facilities designated for use during hostile action events 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 would result from the rule action would better ensure that licensees could implement their EP programs in any circumstance.

The NRC staff has completed its evaluation of the proposed rule action and concludes that the proposed action would not have a significant radiological environmental impact for the following reasons:

(1) The proposed set of EP requirements would not increase the probability or consequences of an accident because the process, personnel, and equipment involved in implementing the licensee's emergency plan would be essentially the same as those used under the existing EP requirements and would 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 would result from the rule action would better ensure that licensees could implement their EP programs in any circumstance.

(2) The proposed set of EP requirements would not alter the types or quantities of radiological effluents, because the rule action would result in licensees implementing their EP program using essentially the same processes, personnel, and equipment as those used under their existing EP programs and would not change the current radiological effluent production and flow paths. The changes to facilities, procedures, drills, and exercises that would result from the rule action would better ensure that licensees could implement their EP programs in any circumstance.

(3) The proposed set of EP requirements would not increase occupational or public radiation exposure because it would continue to provide the existing level of adequate protection of public health, safety, and the environment as the existing EP program. The changes to facilities, procedures, drills, and exercises that would result from the rule action would better ensure that licensees could implement their EP programs in any circumstance.

The NRC also concludes that the rule action would not have a significant nonradiological impact for the following reasons:

(1) The proposed set of EP requirements does not have the potential to impact any historic sites because the process, personnel, and equipment involved would be essentially the same as those used under the existing EP requirements and would 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 proposed rule action would not have the potential to impact any historic sites.

(2) The proposed set of EP requirements would not significantly alter the types or quantities of nonradiological plant effluents because the process, personnel, and equipment involved would be essentially the same as those used under the existing EP requirements and would 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 would result from the rule action would better ensure that licensees could implement their EP programs in any circumstance. Thus, the NRC determined that the proposed rule action would not change the non-radiological effluent production and flow paths.

Accordingly, the NRC concludes that the rule action would not have any significant radiological or nonradiological environmental impacts.

Environmental Impacts of Alternatives to the Rule Action

As an alternate to the proposed action, the NRC staff considered the no-action alternative. Maintaining the status quo (not revising 10 CFR 50.47, 10 CFR 50.54, and 10 CFR Part 50, Appendix E) would result in no change in the environmental impacts of the current EP programs.

Agencies and Persons Consulted

The NRC will send a copy of the proposed rule and the draft environmental assessment to every State Liaison Officer and request their comments on the environmental assessment.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed 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 proposed action.

For further details with respect to the proposed action, see the [proposed/final] rule

dated ____. 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@nrc.gov.

UNITED STATES NUCLEAR REGULATORY COMMISSION

PROPOSED RULE REGARDING

ENHANCEMENTS TO EMERGENCY PREPAREDNESS REGULATIONS

Summary and Analysis of Public Comments on Draft Rule Language

The Nuclear Regulatory Commission (NRC or Commission) is proposing to amend certain emergency preparedness (EP) requirements in its regulations that govern domestic licensing of production and utilization facilities. The proposed amendments would codify certain generically applicable requirements similar to those previously imposed by Commission orders, update the EP regulations to include requirements previously and voluntarily initiated by nuclear power plant licensees, and amend other licensee emergency plan requirements based on a comprehensive review of the NRC's EP regulations and guidance. The proposed requirements would enhance the ability of licensee's in preparing to take and taking certain emergency preparedness 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.

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 proposed rule. 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 Commission received 3 comment letters. One comment letter was submitted by the State of Pennsylvania Bureau of Radiation Protection (SPA1, ML081690778), one was submitted by the Nuclear Energy Institute (NEI) (NEI1, ML081690809), and one was submitted by the Union of Concerned Scientists on behalf of several non-governmental organizations (UCS1, ML081840067). The NRC also received comments on issues that are outside the scope of this proposed rule and on regulatory provisions that are not proposed to be revised in this proposed rule. The NRC determined that these comments did not support changing the scope of the proposed rule.

In this document, the NRC presents a summary of the public comments received and the NRC's responses to the comments. The NRC summarizes the comments for conciseness and clarity. At the end of each comment, the NRC references the specific public comments. Specific comments are referred to in the form [XXX]-[YY.Z], where:

[XXX] represents the commenter abbreviation provided above (i.e., SPA1, NEI1, and UCS1), and
[YY.Z] represents the NRC-assigned sequential comment number. Note: Where specific comments were grouped together by the commenter but needed to be addressed separately, the NRC added a lower case alpha character to the comment number for uniqueness.

Addition of Communications Requirements

Comment: One commenter suggested modifying the rule language of § 50.47(b)(8) to add a communications requirement and define which emergency facilities should be provided and maintained. The commenter suggested that this change should also be made to § 50.47(d)(4) along with the deletion of the word "onsite." (SPA1 – 1)

NRC response: The NRC disagrees with the commenter. The commenter proposed additions to § 50.47 that would be too detailed for that provision of the regulations. Section 50.47(b) establishes the EP planning standards that nuclear power reactor licensees must meet, and § 50.47(d) provides the standards that nuclear power reactor licensees must meet for a license authorizing fuel loading and/or low power testing and training. However, Appendix E to Part 50 contains detailed licensee emergency plan implementation requirements. The NRC believes that the changes proposed by the commenter are unnecessary because the existing requirements in Section IV.E of Appendix E adequately address the commenter's concerns.

Comment: One commenter suggested modifying the rule language of Appendix E.IV.A to require licensees to include in their emergency plan a description of the onsite response capabilities to comply and interface with organizations using the Incident Command System (ICS). The commenter also suggested modifying the rule language of Appendix E.IV.C to add a requirement for applicants or licensees to establish and maintain the capability to assess, assist in activation, develop and maintain procedural requirements and equipment maintenance of Incident Command Post(s) and staging area(s) licensee owned equipment and communication devices. The commenter also suggested modifying the rule language of Appendix E.IV.E, to add requirements for communications with the incident command post and staging area, as well as adding requirements to develop procedures and communication protocols for these facilities. The commenter also suggested adding requirements for emergency response organization (ERO) training on ICS. (SPA1 – 2, SPA1 – 3, SPA1 – 4)

NRC response: The NRC agrees with the commenter that licensees must effectively interact with offsite response organizations. The NRC believes that its current regulations require this interface to be effective. However, in section IV of the proposed rule Federal Register notice, the NRC specifically requests public comments regarding the inclusion of National Incident Management System/Incident Command System in licensee EP programs.

Emergency Operations Facility – Performance Based Approach

Comment: One commenter agreed with the NRC's proposed approach that the proposed language for § 50.47(b)(3) would specifically address only consolidation of EOFs, and would not change requirements for plants that do not elect to consolidate their EOFs. (NEI1 – 11.1a)

NRC response: The comment does not require a response.

Emergency Action Levels (EALs) for Hostile Action Events

Comment: Regarding the proposed rule change to require licensee EALs to include hostile action events, one commenter agreed that the NRC should codify the actions implemented by licensees in response to orders and bulletins issued after September 11, 2001. (NEI1 – 9.1a)

NRC response: The comment does not require a response.

Comment: One commenter stated that it is not clear from the draft preliminary rule language if the "hostile action events" include the hostile persons engaging in offsite activities that impair radiological monitoring. The commenter suggested that the rule should be clear on whether radiological assessments need to consider and discern offsite dirty bomb-type releases of radiation from releases occurring as a result of hostile actions to the plant itself. (UCS1 – 5)

NRC response: The NRC disagrees with the commenter. The NRC proposes to codify hostile action emergency action levels (EALs) to ensure that all licensees and future applicants implement the anticipatory EALs required by the Interim Compensatory Measures orders and suggested as enhancements in Bulletin 2005-02. EALs are used as criteria for determining the need for notification and participation of State and local agencies by appropriate event classification. Declaring hostile action events in a more anticipatory manner would provide more lead time for both onsite and offsite response and result in more effective protection of public health and safety. Radiological assessment is a separate issue. Licensees have specific EALs for assessment of radiological releases of fission products from the reactor plant. Licensees are not required to provide assessment of radiological conditions resulting from a "dirty bomb." Offsite response organizations (OROs) have people that are trained to monitor radiation hazards such as dirty bomb residue and should not depend on the licensee to provide resources for such an event. However, in the highly unlikely event of a dirty bomb explosion at a nuclear reactor plant site, OROs could request radiological assessment support from the licensee.

Amended Emergency Plan Change Process

Comment: One commenter suggested that proposed emergency plan changes should not be compared to the original NRC-approved emergency plan, but rather to only the current plan when determining which changes require prior NRC approval. (NEI1 – 10.1a)

NRC response: The NRC disagrees with the commenter. The NRC believes that change analyses would need to consider the original NRC-approved plan, as well as all subsequent changes to the plan. The current plan may have been modified by a series of incremental changes, only some of which may have been reviewed by the NRC. Although all these changes may have individually not resulted in a reduction in effectiveness, the combined effect of these changes can only be adequately evaluated by comparison against the original NRC approved plan (i.e., the original licensing basis).

Comment: One commenter suggested that the example changes in the draft § 50.54(q) rule be removed. (NEI1 – 10.1b and NEI1 - 10.1d).

NRC response: Since the issuance of the working draft rule language, the NRC reconsidered its decision to provide examples in the rulemaking, deciding instead to provide a greater number of examples in a draft regulatory guide. Relocating the examples to a draft guide allows for more detailed explanation than would be appropriate in the proposed rule. As such, the NRC agrees with the commenter and has removed the examples from the proposed rule.

Comment: One commenter asserted that NRC staff apparently interprets any reduction of commitment as a potentially significant reduction in the effectiveness of the emergency plan. The commenter argued that licensees should be allowed to implement alternate methods for meeting the regulations, without prior NRC approval, provided that the alternate method allows only minimal reduction in existing regulatory margin. The commenter stated that the concept of allowing the licensee to minimally reduce regulatory margin while still meeting regulations is similar to the approach allowed by the § 50.59 rule, and that a similar approach should be taken in the proposed rule. (NEI1 – 10.1c)

NRC response: The NRC agrees in part and disagrees in part with the commenter. The commenter's assertion regarding a reduction in commitment is not supported by the draft (and proposed) rule language, which clearly does not set a reduction in commitment as a threshold for requiring prior NRC approval.

As reflected in the proposed rule, the NRC agrees that alternative approaches to the regulations should be evaluated under § 50.54(q) and only those changes which constitute reductions in effectiveness would require prior NRC approval. The treatment of alternative approaches in the draft rule language was removed from the proposed rule.

In developing the proposed rule, the NRC considered other change processes including § 50.59. Although the NRC incorporated some elements of the § 50.59 process, other elements were deemed incompatible with the emergency planning regulatory framework. Where many evaluations performed under § 50.59 benefit from quantifiable criteria and numeric analyses, the emergency planning standards are largely subjective in nature and not amenable to objective concepts such as reduction in margin.

Evacuation Time Estimate (ETE) Updating

Comment: One commenter questioned the technical basis for the 10% threshold for evaluating changes to ETEs, and how licensees would determine when the threshold is met. Commenters also remarked that the requirement was unclear regarding the types of changes to review and whether the 10% criterion applied to population increase or to a 10% increase in the ETE itself. (NEI1 – 7.1a, UCS1 - 3.2a)

NRC response: The NRC agrees with the commenters that clarification of the draft rule language is necessary. This portion of the rule language has been revised, and the proposed rule would require licensees to update their ETEs when the population of either the EPZ or most populous Emergency Response Planning Area increases or decreases by more than 10% from the population that formed the basis for the licensee's currently approved ETE. The population change may be determined using U.S. Census Bureau statistics or State/local statistics for estimating population changes. The basis for establishing a requirement to update ETEs when the population has increased or decreased by at least 10% is derived from the U.S. Department of Transportation "Highway Capacity Manual" (HCM), which contains analysis techniques for determining the capacity of a roadway, i.e., Level of Service (LOS). The analysis shows that traffic volume is a direct indicator of the population involved in an evacuation given the roadway system in the area of concern. When applying HCM Exhibit 23-3, "Speed Flow Curves and LOS for Basic Freeway Segments," to roadways that are near capacity, such as in an evacuation, the LOS indicates a decrease of one level (i.e., from Level D to Level E) with a 10% increase in

passenger car vehicles. This decrease in roadway service results in slower moving traffic and longer ETEs. The decrease in LOS is not apparent for a vehicle, or population, increase of less than 10%.

Comment: One commenter asserted that NRC does not have the staff expertise to review ETE analyses, which was evident when contractors reviewed ETEs submitted with combined license applications. The commenter suggested that building quality objectives into the requirements for development of ETEs would be a more cost-effective approach. The commenter noted that this proposed regulatory criterion is not an enhancement to EP regulations and guidance following the terrorist events of September 11, 2001 and is not appropriate for rulemaking. (NEI1 – 7.1b)

NRC response: The lack of current staff expertise to review ETEs is not a relevant issue for comment, however, for clarity, it may be noted that Sandia National Laboratories is developing guidance for the conduct of ETE updates. This guidance will also contain a review checklist to enable NRC staff to conduct the reviews and determine the overall ETE adequacy.

The proposed change in regulations regarding ETEs does not flow directly from the threat of hostile action, but rather from the protective action recommendation (PAR) Study (NUREG/CR-6953). The appropriate protective action strategy is dependent on evacuation time for some scenarios, and accurate ETE data is necessary to develop site-specific PAR strategies.

Comment: One commenter argued that it would be difficult to determine a 10% cumulative impact of changes on ETEs without actually revising the ETE study itself. The commenter stated that it plans to develop industry guidance that would define the quality objectives that each ETE must meet. (NEI1 – 7.1c)

NRC response: The NRC agrees in part with the commenter. The NRC has determined that population changes adequately envelope infrastructure changes and has revised the proposed regulation to require the ETE review and update to depend on a 10% change in the population from the population that formed the basis for the licensee's currently approved ETE. The NRC expects to publish for review and comment, in conjunction with the proposed rule, proposed guidance regarding the review and updates of ETEs. Comments on the proposed guidance will be considered by the NRC in the development of the final guidance document.

Comment: Regarding the draft preliminary rule language to require licensees to evaluate demographic changes based on the U.S. Census, one commenter asked if the NRC will accept demographic changes based on U.S. Census updates every 10 years, or if more frequent monitoring will be necessary. (UCS1 - 3.2b)

NRC response: The NRC is proposing to amend the regulations by adding language to 10 CFR Part 50, Appendix E, Paragraph IV, to require nuclear power reactor licensees and applicants to revise their ETEs when the decennial census data is available. However, the rule would also require that ETEs be revised when a 10% or greater change in population occurs in the period between censuses.

Comment: One commenter asked if ETEs should be based on worst-case evacuation circumstances (e.g., in the midst of a severe snow storm for northern reactors) or situations in which traffic conditions could increase the normal ETE (e.g., a multiple-vehicle traffic accident on a major transportation artery). (UCS1 - 3.2c and 3.2d)

NRC response: The NRC disagrees that worst case evacuation circumstances should be used for decision making purposes. In addition to other purposes, the ETE is used for predetermining the most effective strategy for public protective actions in response to various unlikely accident scenarios. The licensee staff is required to be able to make such decisions rapidly, although the more likely case is that there will be time for staff augmentation, discussion, and deliberate decision-making. Average evacuation times are used to support this purpose. If abnormally long evacuation times (such as the circumstances proposed by the commenter) were used, the public might be sheltered in a situation when evacuation is possible and more protective. Even when unusual circumstances may impact evacuation times, local authorities are better informed than nuclear power plant staff regarding roadway disruptions and may direct sheltering as a protective measure in such cases even though the licensee may recommend evacuation. The NRC believes that this arrangement is more protective of public health and safety than the use of worst case timing as a planning basis.

Comment: One commenter stated that guidance documents on ETEs issued more than three years after 9/11 are completely silent on security-initiated events and offsite actions that those responsible for security-initiated events might also initiate. The commenter also stated that the NRC cannot revise its EP rules to address security-initiated events if it relies in whole or in part on regulatory guidance documents, such as NUREG/CR-6863, that assume no security-initiated events occur. (UCS1 – 3.1)

NRC response: The NRC disagrees with the commenter The NRC has contracted with Sandia National Laboratories to develop an updated ETE guidance document that will significantly enhance the guidance for licensee development and NRC review of ETEs. The ETE for an onsite event resulting from hostile action is no different than the ETE for an onsite event resulting from another cause. Offsite hostile action events could affect ETEs, if evacuation is necessary, but local authorities are better informed than nuclear power plant staff regarding roadway or other offsite disruptions.

<u>On-Shift Multiple Responsibilities</u>

Comment: One commenter suggested that the NRC define the term “collateral duties,” as used in the draft proposed rule provision requiring licensees to determine that personnel assigned to emergency plan implementation functions have not been assigned collateral duties. The commenter asked what off-normal event(s) should the industry plan for and if the analysis should be limited to the risk-significant planning standards. (NEI1 – 2.1a)

NRC response: The NRC thought that the suggestion to define the term “collateral duties” had merit, but decided to replace the term with “multiple responsibilities” for clarity and to eliminate the need to define a new term. A licensee would be required to plan for the spectrum of accidents defined in its licensing basis, i.e., design basis accidents (DBAs), as well as the design basis threat (DBT). The analysis should identify all tasks which must be completed for

each DBA and the DBT, and the responders responsible for the performance of those tasks. The analysis should not be limited to risk-significant planning standards.

Comment: One commenter argued that collateral duties are acceptable as long as all required emergency response duties can be effectively performed in a timely manner during an accident sequence. The commenter noted that industry has developed a white paper supporting a suggested collateral duty assessment approach. (NEI1 – 2.1b)

NRC response: The NRC agrees with the commenter because additional duties assigned to on-shift staff who perform emergency response tasks would be acceptable provided that those staff would not be required to perform any additional duties simultaneously with the emergency response tasks. The NRC agrees to consider stakeholder-developed guidance.

Licensee Coordination with Offsite Response Organizations (ORO) During Hostile Action Events

Comment: One commenter stated that offsite emergency response agencies have mutual aid agreements in place to support natural or technological events for which the response need exceeds local resources. The commenter also stated that offsite agencies demonstrate the National Incident Management System (NIMS) during hostile-action-based exercises and NIMS would be utilized to activate additional resources when the response need exceeds local resources. The commenter observed that this rulemaking issue was identified as an enhancement to offsite preparedness during the comprehensive review process and since the final disposition of issues identified through the comprehensive review is still ongoing, the commenter suggested that it is premature to include these comprehensive review issues as a part of rulemaking. (NEI1 – 5.1b)

NRC response: The NRC disagrees with the commenter. The NRC believes that licensees should be required to appropriately plan for offsite support resources during hostile action scenarios. Mutual aid agreements do not necessarily provide adequate resources in a timely enough manner to enable offsite emergency plans to be implemented as written. These resources may be provided by organizations that are far removed from the plant site and unable to provide them in a manner to meet emergency plan timeliness considerations. This proposed requirement would substantially increase the protection of public health and safety and should not be delayed until the comprehensive review process is complete. However, if the issue has been addressed by licensees through the comprehensive review process, there would be minimal burden on the licensee to meet the proposed requirement.

Comment: One commenter noted the draft rule language required evaluation of offsite collateral duties and asked the NRC to describe the role of the Federal Emergency Management Agency (FEMA) in making this determination. (NEI1 – 5.1a)

NRC response: The NRC would expect that FEMA would review any necessary offsite plan changes and then evaluate offsite responses during hostile action exercises to ensure OROs have the necessary resources to implement their plans.

Comment: One commenter agreed with the proposed requirements in Appendix E.IV.A to ensure that offsite and onsite persons responding to a security-initiated event are dedicated to

that response task. The commenter suggested that these requirements must be expanded to explicitly address a third group of persons – off-duty security force personnel who are likely to be called in to work or report to duty for previously scheduled shift coverage. The commenter stated that such personnel may also be employed by local law enforcement or the National Guard and may be called to duty in such capacities, making them unavailable for work as security force personnel. (UCS1 - 4)

NRC response: The NRC disagrees with the commenter. The NRC requires that licensees maintain an adequate emergency response capability including augmentation of the on-shift emergency response organization (ERO). ERO members who could be called in to respond to a plant emergency must be "on call" and available 24 hours a day with no competing responsibilities. A licensee that does not maintain an adequate response capability is not in compliance with current regulations. The NRC is not aware of any such situation, but would take action upon discovering such a situation. The NRC does not believe there is a need for rulemaking on this issue.

Emergency Classification Timeliness

Comment: One commenter argued that the proposed changes to Appendix E.IV.C related to emergency classification timeliness do not meet the intent of SECY-06-0200. The commenter questioned the NRC staff's justification for these particular changes. The commenter suggested that this proposed regulatory criterion should be deleted from the rulemaking. (NEI1 – 6.1a)

NRC response: The NRC disagrees with the commenter. In Item No. 5 on Page 6 of SECY-06-0200, the NRC staff proposed to revise the EP regulations to add requirements that would clarify the time for making event classifications. The NRC notes that the regulatory enhancements identified in SECY-06-0200 were not limited to those associated with the terrorist events of September 11, 2001. The Federal Register notice for the proposed rule provides the NRC's justification for its proposal to amend Appendix E.IV.C to address emergency classification timeliness.

Comment: One commenter stated that there is no compelling basis for imposing the rule's requirements on timeliness of classification. The NRC identified only one late and one missed event classification. The commenter also stated that a timeliness goal is addressed in NEI 99_02, "Regulatory Assessment Performance Indicator Guideline," and that the NRC should continue to rely on the jointly developed performance indicators (PI), and related criteria in NEI 99-02. The commenter asserted that the industry average PI value of greater than 95% indicates that licensee personnel have a sufficient sense of urgency regarding emergency classification. The commenter also stated that the capability to classify an event is clearly addressed in the reactor oversight process (ROP) EP significance determination process. (NEI1 – 6.1b and NEI1 - 6.1c)

NRC response: The NRC disagrees with the commenter. The EP significance determination process in the NRC Inspection Manual, Manual Chapter 0609, Appendix B, does address a classification timeliness goal for the purposes of determining the significance of an apparent violation regarding timeliness. However, there is no timeliness criterion in regulation that could be cited as a violation for which to determine significance.

Although classification timeliness is a criterion for one of the three components that are averaged together to form the PI referenced by the commenter, and that the average performance appears high, the NRC remains concerned that situations continue to develop during actual events that do not reflect this level of performance on the part of all licensees.

The two cited examples are but a sample of inadequate performance identified by the NRC over several years. Although the NRC has issued generic communications and regulatory guidance on classification timeliness, untimely classifications continue to occur. Untimely classifications can delay necessary onsite and offsite response activities and potentially affect the health and safety of the public.

Although the NRC acknowledges the high performance of the majority of licensees, there remains the need to address the performance of the remainder. Placing a timeliness criterion in regulation would provide minimum requirements for all licensees and a basis for appropriate inspection and enforcement activities. Essentially, what the industry commenter is arguing is that a failure to achieve a high degree of timeliness during an actual event is not of sufficient safety/regulatory interest to justify the need for a regulatory "footprint," (i.e., a clear regulatory requirement). The NRC disagrees with the industry on that point. Timeliness of emergency classification in a real situation could result in enhanced protection to the public, and more effective emergency response from offsite response organizations. Accordingly, the NRC declines to adopt the commenter's proposal.

Backup Means for Alert and Notification Systems

Comment: Regarding the proposed changes that the backup notification system need not meet the 15-minute goal for the primary notification system, one commenter asked if the ETEs have an assumption that public notification, with a backup alert and notification system (ANS), begins around 15 minutes or at some later time. The commenter also questioned what constitutes "time zero" for the ETEs. (UCS1 – 6)

NRC response: Notification of the public is the length of time between when the evacuation was ordered and when evacuees received this information. Normally ETEs are calculated using the time for notification based on the primary ANS. Offsite authorities would need to be cognizant of the difference in notification time when using the backup means compared to the primary ANS and the impact this time difference would have on the overall ETEs.

The NRC expects to publish for review and comment, in conjunction with the proposed rule, proposed guidance describing what constitutes "time zero" for ETEs. Comments on the proposed guidance will be considered by the NRC in the development of the final guidance document.

Comment: One commenter suggested that the proposed requirement to require a backup ANS means may be premature. The commenter stated that national guidance in keeping with the presidential directive has yet to be finalized, the House Committee on Appropriations directed FEMA to update its guidance on outdoor warning and mass notification systems, and FEMA-REP-10 has not been revised to address new criteria. (NEI1 – 3.1a)

NRC response: The NRC disagrees with the commenter. The NRC does not believe the proposed rule is premature. Adding a requirement for a backup means for alert and notification systems supports the goal of the 2006 Presidential Directive regarding such systems. Executive Order 13407, "Public Alert and Warning System," dated June 26, 2006, stated that "[I]t is the policy of the United States to have an effective, reliable, integrated, flexible, and comprehensive system to alert and warn the American people…" and directed the Secretary of Homeland Security to "establish or adopt, as appropriate, common alerting and warning protocols, standards, terminology, and operating procedures for the public alert and warning system to ensure interoperability and the secured delivery of coordinated messages…." The proposed rule would enhance overall ANS reliability and capabilities. In addition to the proposed rule language, the NRC is working closely with FEMA in coordinating changes to onsite and offsite guidance to ensure that the guidance does not conflict with the national strategy for alert and warning systems.

Furthermore, in HR 107-740 (incorporated by reference into Public Law 108-7 regarding fiscal year 2003 appropriations), the House Committee on Appropriations directed FEMA to update its guidance on outdoor warning and mass notification systems that are used for weather-related and other types of emergencies, including nuclear power plant events, with a request that the new guidance require all warning systems to be operable in the absence of an alternating current (AC) power supply. Although requiring warning system operability if there is a loss of AC power would address one of the more common failure modes for these systems, guidance addressing only backup warning system power would not deal with ANS failures resulting from problems other than loss of power or any part of the notification process.

Comment: One commenter argued that the NRC staff's position fails to consider the features of many current ANS installations and suggested that any new rule must allow for consideration of site-specific ANS design features and existing capabilities before imposing additional requirements. The commenter observed that this rulemaking issue was identified as an enhancement to offsite preparedness during the comprehensive review process and since the final disposition of issues identified through the comprehensive review is still ongoing, the commenter suggested it is premature to include this comprehensive review issue as a part of rulemaking. (NEI1 – 3.1b)

NRC response: The NRC disagrees with the commenter. The NRC is proposing a requirement for a backup means that would apply generically to different types of alerting and notification systems, and address both the alerting and notification capabilities. Under the proposed requirement, licensees (or applicants) and offsite agencies would be allowed the flexibility to choose the backup means most suited for each particular location, taking into account site-specific ANS design features and existing capabilities. The NRC is working closely with FEMA in coordinating changes to onsite and offsite guidance to ensure that the guidance allows this flexibility and use of state-of-the-art technology. Draft versions of guidance changes will also be made available for public review and comment prior to adoption of the final rule.

The NRC does not foresee the need to await final disposition of issues identified as part of the comprehensive review program. Provisions for an ANS backup means would support the overall intent of this Department of Homeland Security program to resolve gaps in protective and response capabilities for the nuclear sector.

Emergency Response Organization Augmentation and Alternate Facilities

Comment: One commenter questioned if the proposal to require licensees to have the capability for event classification and offsite notifications at the alternative facility goes beyond what was required in NRC Bulletin 2005-02. (NEI1 – 4.1a)

NRC response: The NRC agrees in part with the commenter. In Bulletin 2005-02, several key capabilities of the alternate facility were identified to support its function as a staging and response preparation area, such as the capability for engineering and damage control teams to begin planning mitigative actions. The EP draft preliminary rule language did go beyond the enhancements specified in Bulletin 2005-02 in that it required the capability for event classification at the alternative facility. However, the capability for event classification would not be needed for the alternate facility to perform its function. In response to stakeholder comments, the event classification requirement is not included in the proposed rule published for public comment. The draft rule language also required the alternative facility to have the capability for offsite notifications, which was in accordance with the Bulletin, and the proposed rule includes that requirement.

Comment: One commenter argued that adding the capability to make classifications and notifications at the alternate facility would require equipment to be installed and maintained and would duplicate the capabilities of the licensee's EOF. The commenter stated that there have been no lessons learned during the Phase III hostile action drills that suggest any need for additional requirements. The plant staff is capable of performing the classification and notification of the ORO functions until the near-site and onsite facilities are staffed. The commenter suggested that the requirement for classification and notification in the alternate facility should be removed from the proposed rule. (NEI1 – 4.1b)

NRC response: The NRC disagrees with the commenter. The capability to notify offsite organizations was an enhancement specified in Bulletin 2005-02. This capability would be necessary if the EOF is in close proximity to the plant and would be inaccessible during a hostile action event. In that case there would be no backup facility to perform this function if the Control Room somehow lost the capability. Therefore, the alternative facility would be needed to perform these notifications. If the EOF is a safe distance from the plant and is also the designated alternative facility, it would need to have ORO notification capability in the event that the Technical Support Center is inaccessible and the Control Room loses the capability to perform the notification function.

As stated previously, the alternative facility would not be required to have the capability for event classification.

Challenging Drills and Exercises – Hostile Action Events

Comment: Two commenters suggested modifying the rule language of Appendix E.IV.F.2 to allow licensees the option that not all exercises result in General Emergency level. (SPA1 – 5, NEI1 – 1.2)

NRC response: The NRC agrees with the commenters. Eliminating the proposed requirement for all exercises to result in a General Emergency would be consistent with the goals of varying

exercise challenges, reducing predictability, and increasing realism in exercise scenarios. Therefore, the requirement has been removed in the proposed rule published for public comment.

Comment: One commenter stated that promulgating hostile action-based exercise requirements at this time is premature in light of continuing industry Phase III drills, and FEMA and NRC working group alignment commitments. (NEI1 – 1.1)

NRC response: The NRC disagrees with the commenter. The industry has been conducting a pilot program for non-evaluated hostile action exercises for two years and the rule would not be promulgated until the planned conclusion of the industry's pilot program. Lessons learned from the pilot drill program have influenced the development of the proposed rule and will play a role in the development of the final rule.

Comment: One commenter stated that requiring a radioactive release during every exercise, as the draft preliminary rule would require, contributes to preconditioning. The commenter recommended that requirements for radioactive release should be consistent between the NRC rule and FEMA's exercise evaluation manual. The commenter suggested allowing the option in one exercise of an exercise cycle to not include a radioactive release if the proper mitigating measures are performed. (NEI1 – 1.3)

NRC response: The NRC agrees with the commenter and the proposed rule language published for public comment reflects this comment.

Comment: One commenter stated that requiring dose levels to exceed EPA-400 Protective Action Guides (PAGs) beyond five miles is not supported by recent studies such as the state-of-the-art reactor consequence analysis. The commenter recommended varying radioactive release magnitude from one exercise to another, but require the radioactive release to be consistent with plant-specific source terms and probabilistic risk-informed (i.e., most likely) accident progression. The commenter stated that a requirement to exceed PAGs at 5 miles creates credibility issues with the scenario and creates dose rates onsite and in-plant that severely limit or prohibit movement of ERO personnel/teams. (NEI1 – 1.4a)

NRC response: The NRC does not completely understand the comment. The proposed rule would not require such dose levels, and the State-of-the-Art Reactor Consequence Analysis has not yet been published. The proposed rule is intended to reduce the negative training elements of exercises, but the NRC recognizes that it may not be able to eliminate negative training.

Comment: One commenter stated that if the purpose of the extent of play is to require evacuation out to 10 miles, then it should be acceptable to drive this with a controller inject. A message to State decision-makers, after receipt of the utility PAR, to implement a different PAR for exercise demonstration purposes could be used. (NEI1 – 1.4c)

NRC response: The NRC understands the commenter to mean that if the exercise evaluators require that an evacuation out to 10 miles be demonstrated, it should be acceptable for exercise controllers to provide a message to the appropriate decision-makers that will drive the demonstration rather than develop an unrealistic scenario to drive the response. The NRC agrees with the commenter. The use of such controller injects can be used to drive the required

exercise demonstration without the need for unrealistic scenario elements. The use of such messages to drive demonstration of offsite protective actions, such as evacuation out to 10 miles, would be allowed in exercises under the proposed rule.

Comment: One commenter stated that requiring a radioactive release for every other hostile action-based exercise contributes to preconditioning. The commenter recommended not requiring a radioactive release for every other hostile action-based exercise. (NEI1 – 1.5)

NRC response: The NRC agrees with the commenter that requiring a radioactive release for every other hostile action exercise would contribute to preconditioning. The proposed rule does not contain such a requirement. The NRC expects to publish for review and comment, in conjunction with the proposed rule, proposed guidance regarding hostile action exercises. Comments on the proposed guidance will be considered by the NRC in the development of the final guidance document.

Comment: One commenter asked if the definition of a "biennial exercise planning cycle" is six years and suggested that an eight-year cycle should be evaluated. (NEI1 – 1.6a)

NRC response: The proposed rule does not specify an exercise planning cycle. This issue is being considered in the development of guidance and comments will be accepted during the review period of the guidance document.

Comment: One commenter questioned the purpose of the proposed requirement that NRC would review exercise scenarios. The commenter stated that scenarios are developed based on consensus between the licensee and its OROs, and are agreed upon by FEMA. The commenter expressed concern that the NRC and FEMA may not be in agreement on scenario extent of play or related technical expectations, delaying the development of supporting exercise documentation. (NEI1 – 1.6b)

NRC response: The NRC disagrees with the commenter. The NRC and FEMA are working in concert to develop consistent guidance. Although a conflict could occur, it is expected that issues will be worked out in a manner to support the exercise schedule.

The NRC proposes to require licensees to submit, for NRC review and approval, exercises scenarios to enable the NRC to ensure licensee exercise scenarios implement the proposed requirements of Appendix E, Section IV.F.2.i and j, including hostile action events and a variety of challenges to reduce preconditioning of respondents.

Comment: One commenter suggested modifying the rule language of Onsite Protective Actions During Hostile Action Events to include requirements to describe specific actions to protect onsite personnel and those offsite personnel that respond onsite during hostile action events. (SPA1 – 6)

NRC response: The NRC disagrees with the commenter. The proposed rule language states in part: "a range of protective actions to protect onsite personnel during hostile action events…." This proposed requirement would include all personnel who are located at the plant site. Any offsite responders who respond onsite would do so at the direction of the Incident Commander in coordination with licensee management onsite. In addition, the proposed rule

would not direct any specific actions but would allow licensees flexibility to determine, on a site-specific basis, the protective measures most effective for onsite personnel protection. It also would allow licensees to take advantage of new technologies or other innovations that could further enhance the protection of workers.

Protection for Onsite Personnel

Comment: One commenter questioned if the proposed requirements for protection of onsite personnel go beyond what was required in Bulletin 2005-02. The commenter asked if it is the expectation that physical protection be provided to protect site personnel and if the EP draft preliminary rule addressed emergency workers or non-emergency workers. (NEI1 – 8.1a)

NRC response: The NRC agrees with the commenter that the draft preliminary rule language may have been misleading and has clarified the rule language for the proposed rule. The proposed changes codify the enhancements of Bulletin 2005-02 and do not exceed them. The NRC's expectation would be that emergency directors would employ new strategies to direct personnel away from potentially dangerous locations, not provide physical protection. The proposed requirement would apply to all onsite personnel.

Comment: One commenter agreed with codifying Bulletin 2005-02 requirements only as long as the supplementary information published with the proposed and/or final rule cites or repeats the examples of acceptable onsite protective measures contained in Bulletin 2005-02. The commenter suggested addressing onsite protective actions during hostile action events in § 50.47(b)(10) as opposed to Appendix E, Section I. (NEI1 – 8.1b)

NRC response: The NRC disagrees with the commenter. The NRC does not propose to update § 50.47(b)(10) to address onsite protective actions. The NRC believes Appendix E is more appropriate because regulatory detail is customarily found in Appendix E, rather than in the planning standards of § 50.47(b). The proposed guidance would provide amplifying information for the examples of acceptable onsite protective measures contained in Bulletin 2005-02. It would also direct licensees to consider developing an onsite protective measure decision-making tool to help the shift supervisor, which was also mentioned in the Bulletin. This tool would be intended to aid the rapid decision for site evacuation via a normal exit, site evacuation by opening gates, or if little time is available, locations for sheltering and buildings to be evacuated. The guidance would also reference the NEI White Paper, endorsed by RIS 2006-12, which provides two examples of this decision-making tool.

Guidance Documents

Comment: One commenter stated that it is unacceptable for the guidance documents to be issued (September 2010) so long after the final rule is published (March 2010). The commenter also stated that issuing the guidance after the rule is published deprives external stakeholders of their ability of providing meaningful, informed comments on the rule. (UCS1 – 1)

NRC response: The NRC agrees with the commenter. The NRC has adjusted milestones to ensure that guidance is developed in concert with the changes to the regulations. The NRC expects to publish for review and comment, in conjunction with the proposed rule, the proposed

guidance. Comments on the proposed guidance will be considered by the NRC in the development of the final guidance document.

Comment: One commenter stated that it plans to develop industry guidance that implements the proposed § 50.54(q) rule and will seek NRC endorsement of the guidance. (NEI1 – 10.1e)

NRC response: The NRC expects to make available, for review and comment, a draft regulatory guide that describes an approach acceptable to the NRC for complying with the proposed § 50.54(q) rule. The NRC agrees to consider stakeholder-developed guidance.

Comment: One commenter proposed developing a technical document that would guide licensees on using a performance-based approach and asking for NRC endorsement of the guidance. (NEI1 – 11.1b)

NRC response: In addition to specifying performance-based criteria for consolidated EOFs in the proposed changes to Appendix E, the NRC expects to publish, in conjunction with the proposed rule, proposed guidance for review and comment. Comments on the proposed guidance, as well as industry-developed guidance, will be considered by the NRC in the development of the final guidance document.

On-Shift Licensee Responsibilities for Emergency Response

Comment: One commenter stated that the requirement for adequate staffing to provide initial facility accident response is not clearly defined. The commenter also stated that if the NRC revises its regulations to address security-initiated events, the NRC must enforce those regulations fully by ensuring licensees actually have adequate staffing at all times. (NGO1 – 4)

NRC response: The commenter raises an issue that concerns a security-related issue, not an EP issue, and is beyond the scope of this proposed rule.

Coordination of Rulemaking Efforts

Comment: One commenter suggested that since NRC is currently working on multiple rulemaking efforts that affect EP regulations, these rulemaking efforts should be consolidated where appropriate in 10 CFR 50.54(hh) where EP requirements exist, and provide a reference back to the appropriate section of Appendix E. (NEI1 – 12)

NRC response: Section 50.54(hh) was not issued in a final rule in time for consideration in this proposed rule. During the development of the EP final rule, the NRC expects to review any new regulations that could affect the provisions of this proposed rule.

Concerns of Some Members of the Staff Regarding Proposed Emergency Preparedness Rulemaking

1) The primary concern of some members of the staff on the proposed emergency preparedness rulemaking relates to the planned change in regulatory process for licensee submittal of emergency plan (EP) and emergency action level (EAL) changes that require prior NRC approval pursuant to 10 CFR 50.54(q) and Section IV.B of Appendix E to 10 CFR Part 50.

2) Currently, EP and EAL changes that require prior NRC approval are submitted to the NRC in accordance with 10 CFR 50.4 (i.e., as a report). The NRC staff issues the approvals/denials via letter with an attached safety evaluation.

3) The proposed rulemaking would change the submittal process for EP changes and some EAL changes to use the license amendment process (i.e., pursuant to 10 CFR 50.90). The major difference is that the license amendment process provides opportunities for public comment and to request a hearing.

4) The Office of the General Counsel has advised the staff that the license amendment process (with its associated hearing rights) needs to be used for EP or EAL changes that would reduce the effectiveness of the approved emergency plan. A reduction in effectiveness is the criteria in 10 CFR 50.54(q) that a licensee uses to determine if prior NRC approval is needed.

5) Several staff members have tried to get clarification on the legal basis for the proposed change to use the license amendment process. However, it is the view of these staff members that this basis has not been provided. The current process (letter with safety evaluation) has been in place since promulgation of 10 CFR 50.54(q) in 1980.

6) The current rulemaking package provides very little discussion on the change in process and gives no reason why certain EAL changes would use the amendment process and others would not.

7) In the NRC staff's plan for the proposed rulemaking, as discussed in SECY-06-0200, the staff stated that one of the problems with the current requirements in 10 CFR 50.54(q) is that the lack of clarity "has led to varied implementation by licensees, several enforcement actions, and unnecessary and precautionary submittals for NRC review resulting in inefficient and ineffective use of licensee and staff resources." The proposed rulemaking does not add clarity to the regulatory process associated with 10 CFR 50.54(q). In fact, the current wording seems to add further confusion to this regulatory process.

8) Consistent with 10 CFR 1.43, NRR has principal responsibility for developing, promulgating, and implementing the regulations under 10 CFR Part 50, and developing policies, programs, and procedures for all aspects of licensing (including emergency preparedness). It is important that NRR and its stakeholders have a clear understanding of the basis for the proposed use of the license amendment process for EP and EAL changes. As such, the basis for the legal position should be documented consistent with the requirements in NRC Management Directive (MD) 3.53, Handbook Part I, "Recordkeeping Requirements." Specifically, MD 3.53 requires that in order to provide

adequate documentation of the organization, functions, policies, decisions, procedures, and essential transactions of the NRC, Federal Records shall be created and maintained that are sufficient to document the formulation and execution of basic policies and decisions and necessary actions taken, including all significant decisions and commitments reached orally (person to person, by telecommunications, or in conference).

9) Based on these concerns, staff members have developed a request for legal interpretation. The request is currently in the concurrence process.