



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

January 24, 2011

Mr. R.W. Borchardt  
Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject: DRAFT FINAL RULE, "ENHANCEMENTS TO EMERGENCY PREPAREDNESS,"  
AND RELATED REGULATORY GUIDANCE DOCUMENTS

Dear Mr. Borchardt,

During the 579<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards, January 13-15, 2011, we completed our review of the draft Final Rule, "Enhancements to Emergency Preparedness," and related regulatory guidance documents: Draft Regulatory Guide (RG) 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors;" NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies;" and Interim Staff Guidance (ISG) NSIR/DPR-ISG-01, "Interim Staff Guidance on Emergency Planning for Nuclear Power Plants." Our Plant Operations and Fire Protection subcommittee also reviewed this matter during its meeting on November 1, 2010. We also had the benefit of the documents referenced.

**CONCLUSION AND RECOMMENDATION**

1. The draft final Emergency Preparedness (EP) rule and the associated Regulatory Guide 1.219 should not be issued until the NRC staff resolves the issues associated with the location and sharing of an Emergency Operations Facility (EOF) by several nuclear power plants.
2. In future revisions of the rule and associated guidance documents, the NRC staff should consider: (a) expanding NUREG/CR-7002 to include evacuation time estimates during conditions of external environmental duress such as seismic events, extreme weather conditions, or terrorist activity external to the site, and (b) developing an approach to risk-inform emergency classifications and emergency action recommendations using site-specific probabilistic risk assessment (PRA) and insights from other severe accident studies.

## **BACKGROUND**

In the years following the March 28, 1979, Three Mile Island Unit 2 accident, licensees as well as federal, state, and local governments developed emergency response agreements and coordinated emergency plans and procedures to meet the Emergency Planning requirements. Since then, there has been an increasing need to update these regulations and guidance again to reflect the lessons learned from operating experience.

The September 11, 2001, attacks focused the Commission's attention on the vulnerabilities, defensibility, and strengths of nuclear power facilities and related infrastructures. The Commission acted promptly to improve plant security and emergency planning by issuing Orders in 2002 and Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events."

The NRC staff now proposes to amend certain EP requirements in 10 CFR Parts 50 and 52, and related guidance documents for nuclear power reactors in order to codify the EP related security improvements previously made through NRC Orders and Bulletin. The NRC staff identified 12 high priority EP issues, six of which are security-related. The Commission approved rulemaking as the most effective and efficient means to ensure that the high priority EP issues would be resolved with an opportunity for participation by all interested stakeholders.

The draft final rule on the enhancements to EP regulations was issued for public comment in the *Federal Register* on May 18, 2009 (74 FR 23254). In response to several requests, the NRC staff extended the deadline for the public comment period from August 3, 2009, to October 19, 2009. During the public comment period, the NRC and the Federal Emergency Management Agency (FEMA) jointly held 11 public meetings to discuss the draft rule and related guidance documents. The NRC received a total of 94 submittals with 687 individual comments.

Revision of the EP regulations has required modification to 10 CFR Parts 50 and 52, as well as development of Regulatory Guide 1.219, NUREG/CR-7002, and NSIR/DPR-ISG-01.

## **DISCUSSION**

The issues addressed in this rulemaking are listed below:

1. On-Shift Multiple Responsibilities
2. Emergency Action Levels for Hostile Action
3. Emergency Response Organization Augmentation and Alternative Facilities
4. Licensee Coordination with Offsite Response Organizations
5. Protection for Onsite Personnel
6. Challenging Drills and Exercises
7. Backup Means for Alert and Notification Systems
8. Emergency Declaration Timeliness
9. Emergency Operations Facility – Performance-Based Approach
10. Evacuation Time Estimate Updating
11. Amended Emergency Plan Change Process
12. Removal of Completed One-Time Requirements

We have reviewed this list of EP issues and the efforts the NRC staff has taken to address them. The ISG NSIR/DPR-ISG-01 addresses the EP rulemaking issues No. 1, and No. 3-9. NRC Bulletin 2005-02 and NEI 99-01, Revision 5, address the EP rulemaking issue No. 2. NUREG/CR-7002 addresses the EP rulemaking issue No. 10, and Regulatory Guide 1.219 addresses the EP rulemaking issue No. 11. EP rulemaking issue 12 is addressed by 10 CFR 50.54. We agree that this list represents issues that should be addressed in the current rulemaking. The NRC Staff has appropriately addressed these issues with the exception of the advisability of a more distant, remote multi-unit EOF.

The draft final rule places no limit on the maximum distance of the EOF from a unit, or the number of units served by a single EOF, and permits the EOF to be placed across a state line. The greater the distance between the EOF and the nuclear power plant which it serves, the less likely it will be that the EOF can be staffed in a timely manner by site personnel who are thoroughly familiar with the site, the plant, and its operating and accident characteristics.

A single EOF can serve a small number of nuclear units, provided the distances from the nuclear units are not great, the complexity of the EOF is reasonable, and emergency responders from each plant served by the EOF are well trained in its use. However, the greater the number of nuclear units the remote EOF facility serves, the greater the amount of technical information and equipment required to be available at the EOF; thus, adding to its operational complexity.

State and local agencies which may come to the EOF to direct state and local efforts and coordinate with licensee EOF personnel, may find it more difficult if the EOF is located in a state different from that of the nuclear facility involved.

A remote EOF at a great distance from the site could also have a negative effect on the public perception of the licensees' and regulatory agencies' apparent lack of concern for, and involvement with, the safety and welfare of the public who are located nearer to the plant.

The NRC staff should reconsider changes in the rule which would permit EOFs to be located at distances considerably farther than 10 miles from the plant site. The EP rule and RG 1.219 should not be issued until this issue is resolved.

Following the issuance of the rule and associated guidance documents, the NRC staff should consider the following issues.

An emergency response, such as evacuation, sheltering, iodine prophylaxis, and use of stored food and water, has risks and costs to the public associated with the decisions made by public officials. To minimize the overall risk to the public, the risks resulting from the accident must be balanced with the risks associated with the protective actions taken. The use of simplistic or conservative methods often does not consider the balance of both of these risks in a probabilistic manner in order to achieve the optimum result.

A risk-informed approach could be used as a basis for determining Emergency Action Levels and Protective Action Recommendations. One possible approach would be to incorporate insights from site specific PRAs and other severe accident studies including the State-of-the-Art Reactor Consequence Analyses (SOARCA) when it is fully developed and approved. These insights might also be used to determine the public protective actions, based on the public risk associated with the plant accident conditions.

NUREG/CR-7002 provides an up-to-date approach to determining evacuation times for a limited set of scenarios. To better determine the likely effectiveness of protective action recommendations, such as evacuation, NUREG/CR-7002 should be expanded to provide evacuation time estimates (ETE) for adverse conditions such as seismic events, severe adverse weather conditions, or widespread terrorist activity.

Both the NRC and FEMA staffs have prepared and completed the draft final rule and associated regulatory guidance documents in a clear, professional, understandable, and technically correct manner. We particularly appreciate the high degree of public involvement that the NRC and FEMA staffs have encouraged.

The implementation phase consists of many tasks which licensees as well as state and local governments must complete in a relatively short time. The implementation schedule will present a challenge to those involved.

Dr. Dana Powers did not participate in the Committee deliberations regarding this matter.

Sincerely,

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Said Abdel-Khalik  
Chairman

## REFERENCES

1. NRC Letter; Subject: Advisory Committee on Reactor Safeguards Review of Final Rule on Enhancements to Emergency Preparedness Regulations, (10 CFR PART 50 and 10 CFR PART 52) dated September 30, 2010 (ML102730119), transmitting the following documents:
  - Draft Final Rule, "Enhancements to Emergency Preparedness Regulations" (ML102800016)
  - Summary of Public Comments Received on Proposed Revisions to 10 CFR Parts 50 and 52, Enhancements to Emergency Preparedness Regulations (ML102800021)

2. NRC Letter; Subject: Advisory Committee on Reactor Safeguards Review of Guidance Documents Associated with the Final Rule on Enhancements to Emergency Preparedness Regulations, (10 CFR PART 50 and 10 CFR PART 52) dated September 30, 2010 (ML102740554), transmitting the following documents:
  - Interim Staff Guidance (ISG) NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants," dated September 30, 2010 (ML102790345)
  - NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies," dated May 2010 (ML102790350)
  
3. NRC Letter; Subject: Draft Final Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Response Plans for Nuclear Power Reactors," dated October 7, 2010 (ML102780480), transmitting the following document:
  - Draft Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," dated December 2010 (ML102790357)
  
4. NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005 (ML051740058)

5. NRC Letter; Subject: Advisory Committee on Reactor Safeguards Review of Guidance Documents Associated with the Final Rule on Enhancements to Emergency Preparedness Regulations, (10 CFR PART 50 and 10 CFR PART 52) dated September 30, 2010 (ML102740554), transmitting the following documents:
  - Interim Staff Guidance (ISG) NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants," dated September 30, 2010 (ML102790345)
  - NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies," dated May 2010 (ML102790350)
  
6. NRC Letter; Subject: Draft Final Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Response Plans for Nuclear Power Reactors," dated October 7, 2010 (ML102780480), transmitting the following document:
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7. NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005 (ML051740058)

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Letter to R. W. Borchardt, Executive Director for Operations from Said Abdel-Khalik, ACRS  
Chairman dated January 24, 2011

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