



# DRAFT REGULATORY GUIDE

Contact: R. Jervey  
(301) 251-7404

## DRAFT REGULATORY GUIDE DG-2004

(Proposed Revision 2 of Regulatory Guide 2.6, dated March 1983)

# EMERGENCY PLANNING FOR RESEARCH AND TEST REACTORS

## A. INTRODUCTION

This regulatory guide provides licensees and applicants with a method that the staff of the U.S. Nuclear Regulatory Commission (NRC) considers acceptable for use in complying with the Commission's regulations on the content of emergency plans for research and test reactors.

Title 10, of the *Code of Federal Regulations*, Section 50.34(b)(6)(v) (10 CFR 50.34(b)(6)(v)) (Ref. 1) requires that each application for a license to operate a facility include in a final safety analysis report, along with other information, the applicant's plans for coping with emergencies, including the items specified in Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities" to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." In addition, 10 CFR 50.54(q) requires licensees to follow and maintain in effect emergency plans that meet the requirements of Appendix E.

The NRC issues regulatory guides to describe methods that the staff considers acceptable for use in implementing specific parts of the agency's regulations, to explain techniques that the staff uses in evaluating specific problems or postulated accidents, and to provide guidance to applicants. Regulatory guides are not substitutes for regulations and compliance with them is not required.

This regulatory guide contains information collection requirements covered by 10 CFR Part 50 that the Office of Management and Budget (OMB) approved under OMB control number 3150-0011. The NRC may neither conduct nor sponsor, and a person is not required to respond to, an information collection request or requirement unless the requesting document displays a currently valid OMB control number.

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This regulatory guide is being issued in draft form to involve the public in the early stages of the development of a regulatory position in this area. It has not received final staff review or approval and does not represent an official NRC final staff position.

Public comments are being solicited on this draft guide (including any implementation schedule) and its associated regulatory analysis or value/impact statement. Comments should be accompanied by appropriate supporting data. Written comments may be submitted to the Rulemaking and Directives Branch, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; submitted through the NRC's interactive rulemaking Web page at <http://www.nrc.gov>; or faxed to (301) 492-3446. Copies of comments received may be examined at the NRC's Public Document Room, 11555 Rockville Pike, Rockville, MD. Comments will be most helpful if received by May 31, 2010.

Electronic copies of this draft regulatory guide are available through the NRC's interactive rulemaking Web page (see above); the NRC's public Web site under Draft Regulatory Guides in the Regulatory Guides document collection of the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/doc-collections/>; and the NRC's Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html>, under Accession No. ML092400206.

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## B. DISCUSSION

### Background

The American National Standards Institute (ANSI) and the American Nuclear Society (ANS) have issued ANSI/ANS 15.16-2008, "Emergency Planning for Research Reactors" (Ref. 2), which is generally consistent with current regulatory requirements. This standard was originally developed in 1982 (Ref. 3) to provide specific acceptance criteria for complying with the applicable requirements set forth in 10 CFR Part 50.54, "Conditions of Licenses," and in Appendix E to 10 CFR Part 50. These criteria provide a basis for research and test reactor licensees and applicants to develop acceptable emergency response plans and improve emergency preparedness at their facilities.

ANSI/ANS 15.16-2008 includes a few key changes and experience accumulated since the issuance of the earlier version (ANSI/ANS 15.16-1982). Primarily, the changes in the standard and the regulatory guide are that they are now consistent with the changed dose limits of 10 CFR Part 20, "Standards for Protection against Radiation" (Ref. 4), and with enhanced physical security practices for reactor facilities. Additionally, NRC Information Notice (IN) 92-79, "Non-Power Reactor Emergency Event Response," (Ref. 5), describes an event that required interface with the public and highlights the need for licensees to quickly apprise the NRC of the circumstances of an emergency classification.

The Commission's interest in emergency planning is focused primarily on situations that may cause or may threaten to cause radiological hazards that could affect public health and safety. Emergency plans should be directed toward mitigating the consequences of emergencies and should provide reasonable assurance that appropriate measures can and will be taken to protect public health and safety in the event of an emergency. Although developing a completely detailed plan encompassing every conceivable type of emergency situation is not practical, advanced planning and provisions for ensuring the availability of necessary equipment, supplies, and services can create a high order of preparedness and ensure an orderly and timely decision-making process at the time of an emergency. The plans should express the overall concept of operation that describes how the elements of advanced planning have been considered and the provisions that have been made to cope with emergency situations.

In the judgment of the NRC staff, the potential radiological hazards to the public associated with the operation of research and test reactors are considerably less than those involved with nuclear power plants. In addition, because there are many different kinds of research and test reactors, the potential for emergency situations arising and the consequences thereof vary from facility to facility. The NRC expects these differences and variations to be reflected realistically in the emergency plans and procedures developed for each research and test reactor facility.

As required in 10 CFR 50.54(q),...*the licensee may make changes to emergency plans without Commission approval only if these changes do not decrease the effectiveness of the plans and the plans as changed, continue to meet the requirements of Appendix E.* Specific information with regard to processing changes to emergency plans can be found in NRC Regulatory Information Summary (RIS) 2005-02, "Clarifying the Process for Making Emergency Plan Changes," (Ref. 6). The RIS includes information to determine whether a "decrease in effectiveness" resulted from the proposed emergency plan change.

## C. REGULATORY POSITION

The NRC staff considers the guidance in ANSI/ANS 15.16-2008 generally acceptable as a means for complying with the requirements in 10 CFR Part 50.54 and Appendix E to 10 CFR Part 50. The following clarification is added:

1. The licensee is responsible for planning and implementing all emergency measures within its site boundaries. In this context, the site boundaries should be clearly defined. Supporting organizations that would augment the licensee's emergency organization (e.g., the fire department, hospitals, and security organizations) should be specified. Planning and implementation of measures to cope with reactor-related emergencies beyond the site boundary should be commensurate with and based on the potential consequences of credible accidents or incidents. The emergency plan should describe this planning basis and the corresponding arrangements and agreements among the licensee and the local, State, or Federal agencies that are expected to respond.
2. The radiation dose levels of the emergency action levels established for the various emergency classes are slightly different from those specified for power reactors. However, in the judgment of the NRC staff, the radiation dose levels specified in Table I of the standard are adequate for the credible accidents associated with the operation of research and test reactors, and the specified action levels provide reasonable assurance that protective measures associated with the action levels specified in Table I can and will be taken, provided that the licensee also gives appropriate emphasis to developing emergency action levels that relate directly to facility parameters (e.g., pool water levels and area radiation monitors).
3. The licensee should promptly notify the NRC Headquarters operations center of events classified under Table 1 of the standard. The licensee should consider implementing a notification process that will notify the NRC no later than 1 hour after it declares one of the emergency classes.
4. Details that may change from time to time (e.g., names and telephone numbers, specific items of equipment and supplies, inventory lists, and step-by-step procedures or checklists that may be altered as a result of experience or test exercises) should not be incorporated into the plans, but these details should be listed in the emergency implementing procedures.
5. The licensee should list emergency procedures that implement the emergency plan by title in an annex to the emergency plan instead of incorporating them into the plan. The emergency implementing procedures should be maintained and made available at the facility for inspection and review at any time by an NRC representative.
6. The procedural system that the licensee uses for the review and approval of emergency implementing procedures should contain instructions governing the writing, revising, and updating of implementing procedures. The instructions should specify the methods that the licensee will use to ensure that procedures, revisions, and changes are reviewed for adequacy, approved for use, and distributed to user organizations and individuals responsible for implementing the procedures.

## **D. IMPLEMENTATION**

The purpose of this section is to provide information to applicants and licensees regarding the NRC's plans for using this draft regulatory guide. The NRC does not intend or approve any imposition or backfit in connection with its issuance.

The NRC has issued this draft guide to encourage public participation in its development. The NRC will consider all public comments received in development of the final guidance document. In some cases, applicants or licensees may propose an alternative or use a previously established acceptable alternative method for complying with specified portions of the NRC's regulations. Otherwise, the methods described in this guide will be used in evaluating compliance with the applicable regulations for license applications, license amendment applications, and amendment requests.

## **REGULATORY ANALYSIS**

### **Statement of the Problem**

The Commission's regulations require research and test reactor licensees to develop plans for coping with emergencies. Specific guidance is needed to provide acceptance criteria for complying with the applicable requirements set forth in 10 CFR 50.54 and Appendix E to 10 CFR Part 50. Regulatory Guide 2.6, "Emergency Planning for Research and Test Reactors," provides guidance for complying with the regulations. Furthermore, Regulatory Guide 2.6 endorsed ANSI/ANS 15.16-1982, the early version of ANSI/ANS 15.16-2008. The ANS Subcommittee ANS-15 has updated the guidance in ANSI/ANS 15.16-2008. The proposed action endorses the updated standard by revising Regulatory Guide 2.6.

### **Objective**

The objective of this regulatory action is to provide licensees and applicants updated guidance for developing and maintaining emergency plans that meet the appropriate regulations.

### **Alternative Approaches**

The NRC staff considered the following alternative approaches:

- Do not revise Regulatory Guide 2.6.
- Revise Regulatory Guide 2.6.

#### Alternative 1: Do Not Revise Regulatory Guide 2.6

Under this alternative, the NRC would not revise Regulatory Guide 2.6, and the current guidance would be retained despite improvements that are available to licensees. If the NRC does not take action, licensees that want to use the guidance provided in the ANSI/ANS 15.16-2008 standard for updating their emergency plans could do that. However, that would create a slight inconsistency in available guidance, which hinders understanding and communication. Additionally, the NRC would need to review each submittal individually; these reviews would likely involve requests from the NRC for additional information and would require licensees to respond to these requests. This alternative provides a baseline condition from which any other alternatives will be assessed.

## Alternative 2: Revise Regulatory Guide 2.6

Under this alternative, the NRC would revise Regulatory Guide 2.6, taking into consideration the availability of the national consensus standard. The licensee and the NRC staff would be using the same version of the standard for guidance, thus enhancing their ability to communicate with one another in a clear and efficient manner. Endorsing a revision to a consensus standard requires a minimum expenditure of staff resources.

The impact to the NRC would be the costs associated with preparing and issuing the regulatory guide. The impact to the public would be the voluntary costs associated with reviewing and providing comments to NRC during the public comment period. The value to NRC staff and its applicants would be the benefits associated with enhanced efficiency and effectiveness in using a common guidance document as the technical basis for license applications and other interactions between the NRC and its regulated entities.

## **Conclusion**

Based on this regulatory analysis, the NRC staff recommends revision of Regulatory Guide 2.6. The staff concludes that the proposed action will enhance efficiency by endorsing a revised standard that is well known to the user community and will provide for more efficient reviews by the NRC staff.

## REFERENCES<sup>1</sup>

1. 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," U.S. Nuclear Regulatory Commission, Washington, DC.
2. ANSI/ANS 15.16-2008, "Emergency Planning for Research Reactors," American Nuclear Society, La Grange Park, IL. <sup>2</sup> September 2008
3. ANSI/ANS 15.16-1982, "Emergency Planning for Research Reactors," American Nuclear Society, La Grange Park, IL. October 1982
4. 10 CFR Part 20, "Standards for Protection against Radiation," U.S. Nuclear Regulatory Commission, Washington, DC.
5. IN 92-79, "Non-Power Reactor Emergency Event Response," U.S. Nuclear Regulatory Commission, Washington, DC, December 1, 1992.
6. RIS 2005-02, "Clarifying the Process for Making Emergency Plan Changes," U.S. Nuclear Regulatory Commission, Washington, DC, dated February 14, 2005

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<sup>1</sup> Publicly available NRC published documents such as Regulations, Regulatory Guides, NUREGs, and Generic Letters listed herein are available electronically through the Electronic Reading room on the NRC's public Web site at: <http://www.nrc.gov/reading-rm/doc-collections/>. Copies are also available for inspection or copying for a fee from the NRC's Public Document Room (PDR) at 11555 Rockville Pike, Rockville, MD; the mailing address is USNRC PDR, Washington, DC 20555; telephone 301-415-4737 or (800) 397-4209; fax (301) 415-3548; and e-mail [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov).

<sup>2</sup> Copies of the non-NRC documents included in these references may be obtained directly from the publishing organization.