

# NRC INSPECTION MANUAL

RNRP

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## INSPECTION PROCEDURE 69011

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### CLASS I RESEARCH AND TEST REACTOR EMERGENCY PREPAREDNESS

PROGRAM APPLICABILITY: 2545

#### 69011-01 INSPECTION OBJECTIVES

01.01 To determine if the licensee's emergency preparedness program was maintained in a state of operational readiness, since the last inspection.

01.02 To determine if the licensee's emergency preparedness program and changes to the program met regulatory requirements and the licensee's commitments.

#### 69011-02 INSPECTION REQUIREMENTS

02.01 Changes to the Emergency Plan. Determine if revisions to the Emergency Plan, and implementing procedures were made in accordance with 10 CFR 50.54(q) and the licensee's administrative controls.

02.02 Implementing Procedures. Determine if the implementing procedures are consistent with the Emergency Plan requirements.

#### 02.03 Emergency Preparedness Program Implementation

- a. Facilities, Equipment, Instrumentation and Supplies. Determine if key emergency response facilities, equipment, instrumentation and supplies are readily available and maintained as required by the Emergency Plan.
- b. Emergency Response Personnel. Determine if the licensee's key emergency response personnel can adequately implement the Emergency Plan and implementing procedures.

02.04 Offsite Support. Determine if agreements for assistance from offsite organizations are understood and can provide the needed support in an emergency as specified by the Emergency Plan.

02.05 Emergency Alarms. Determine if the emergency alarms are operable and maintained as required by the technical specifications (TSO and Emergency Plan).

02.06 Emergency Preparedness Exercises and Drills. Determine if the licensee conducted exercises and drills as required by the Emergency Plan.

02.07 Training

- a. Emergency Actions. Determine if personnel are trained to respond to emergency events as required by the Emergency Plan, implementing procedures and administrative controls.
- b. Changes. Determine if personnel are aware of changes to the emergency preparedness program, understand them, and have been trained to implement them as required.

69011-03 INSPECTION GUIDANCE

General Guidance

This inspection procedure covers the emergency preparedness program for all facility emergencies that could have a radiological effect on the facility personnel or the public. Credible accidents, that may be considered if they could have significant radiological consequences, include failures of experiments that use explosive or highly radioactive materials, fuel failures or damage, and other events that could cause a major accidental release of radio-activity at the facility. Other potential emergencies, that may be included if they are credible and could have significant radiological consequences, are fires, floods, and other natural occurrences such as tornadoes, hurricanes, and earthquakes.

The Emergency Plan and the Emergency Plan implementing procedures provide the emergency preparedness requirements for the Research and Test reactor facility. NUREG-0849, "Standard Review Plan for the Review and Evaluation of Emergency Plans for Research and Test Reactors," and Regulatory Guide 2.6, "Emergency Planning for Research Reactors," March 1983, provides general guidance. The scope of a facility's emergency plans should be based on the hazard that could exist for facility incidents, such that the NRC has reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Further, Appendix E to 10 CFR Part 50 recognizes the unique nature of Research and Test reactor emergency plans and endorses the use of Regulatory Guide 2.6 for review of the emergency plans at Research and Test reactors.

A specific example of the unique nature of Research and Test reactors is that 10 CFR 50.47 is not applicable to Research and Test reactors. Another example is that almost all licensees of Research and Test reactors do not need to notify offsite agencies to take protective actions, because the credible offsite dose consequences of an accident are negligible. Therefore, the Appendix E requirement to inform offsite agencies within 15 minutes of an emergency declaration does not apply to most Research and Test reactors.

Another example of regulations that do not specifically apply to Research and Test reactors is the review of audit requirements from 10 CFR 50.54(t).

The inspections of Research and Test reactor emergency preparedness programs should be consistent with the safety implications of the specific reactor and site in accordance with the NRR-approved emergency plan. All requirements for Research and Test reactor licensee emergency preparedness are in the licensee's emergency plan. If there are questions on the extent or meaning of the emergency plan requirements, they should be discussed with appropriate management and the assigned Office of Nuclear Reactor Regulation (NRR) project manager.

When possible, the inspector should use direct observation of activities to satisfy the requirements of this inspection procedure. The sample sizes and resource estimates suggested in the inspection procedure is provided for broad planning purposes and to define the typical depth of the inspection. It is not intended to be a rigid requirement on the inspector. Actual inspection at any facility may require more or less effort depending on past inspection history, conditions at the facility, and safety significance.

In addition to the guidance in Regulatory Guide 2.6, general guidance may be found in the Division 2 Regulatory Guides, and the "Other Regulatory Guides of Possible Interest to Division 2 Recipients" listed in the Division 2 Regulatory Guides Table of Contents. General guidance may also be found in the ANSI/ANS Section 15 Standards listed in Appendix B to Inspection Procedure 69001, "Class II Research and Test Reactors." The reference to this guidance is to aid the inspector in technical evaluation of licensee programs and is not to be used as requirements unless the licensee has committed in writing to the NRC to use the specific guidance document.

### Specific Guidance

03.01 Changes to the Emergency Plan. The review of 50 percent of the changes since the last inspection should provide an acceptable sample for this inspection procedure. Changes to the Emergency Plan's organization and management control systems should be given particular attention.

The inspector should review the Emergency Plan and implementing procedures before conducting the onsite inspection. The inspector should examine only changes to the Emergency Plan and implementing procedures to assure that the changes were made in accordance with 10 CFR 50.54(q). Specifically, changes to the Emergency Plan should not decrease the effectiveness of the plan, unless the changes have received prior NRC approval. Further, the licensee should submit changes, that were made without NRC approval, within 30 days to the NRC. The inspector should resolve any concerns on compliance with 10 CFR 50.54(q) with appropriate management and the NRR project manager.

The licensee's management should be able to discuss or retrieve the evaluation of the effect that changes have on program effectiveness. The inspector should pay particular attention to changes to the emergency organization or management control systems. These may include changes in organizational structures, responsibilities, authorities and staffing of key emergency response personnel, interfaces and coordination between onsite

and offsite organizations, and shift staffing. All changes should include the review of respective portions of the Emergency Plan and implementing procedures. Changes should receive safety review committee review as required and the committee minutes should be reviewed. Changes may affect the administration and management of the licensee's routine and overall emergency preparedness program. Such changes may include, but are not limited to, the following:

- a. The assignment and qualifications of individuals new to the emergency organization. The training and qualification records of individuals assigned responsibilities in the emergency organization since the last inspection should be reviewed. This review should assure that all individuals completed the required emergency preparedness training before starting the new assignment and are qualified to perform assigned emergency preparedness responsibilities and duties.
- b. Changes in personnel availability and functions that may affect the emergency organization. For example, an individual may move farther from the facility, or an individual may be assigned collateral duties such as teaching or research.
- c. Changes in agreements with offsite support organizations.

03.02 Implementing Procedures. The review of the changes to the implementing procedures since the last inspection should provide an acceptable sample for this inspection requirement. Both the intent and practical details of the implementing procedures should be covered.

The implementing procedures should be current and reflect all changes to the Emergency Plan. Requirements for this may be found in 10 CFR 50.54(q), the TS and the licensee's administrative procedures. The procedures should be reviewed, approved, and current as required by the emergency plan and licensee administrative procedures. These may include, but are not limited to, the following:

- a. Use of appropriate implementing procedures for classification and notification.
- b. Identification of protective actions that would be initiated onsite (and recommended offsite, if applicable).
- c. Distribution of copies of changes to the Emergency Plan and implementing procedures to appropriate personnel and organizations. This may be verified by a spot check of distribution lists. If the distribution list is not available, the inspector should interview a small sample of personnel at the facility to determine that copies were received in a timely manner. The licensee should make permanent or cancel any temporary change in accordance with the licensee's administrative control requirements that govern such changes.

03.03 Emergency Preparedness Program Implementation. The observation of an emergency preparedness exercise or the verification of licensee actual response to events and conditions at the facility would provide an acceptable sample for this inspection requirement. If an emergency preparedness exercise cannot be observed or there have been no events that related to emergency preparedness implementation, the inspector

should discuss potential emergency response scenarios with involved personnel and observe emergency preparedness facility conditions. The discussions should be consistent with the Emergency Plan and credible events and conditions for the facility. Licensee personnel should be able to demonstrate that they can classify an emergency event and respond in accordance with the emergency plan. Observations should be conducted with minimal interference with scheduled operations. The discussions should be conducted to the point to determine if the licensee could respond to an event, establish stable facility conditions, and start the recovery process.

- a. Facilities, Equipment, Instrumentation and Supplies. Facilities, supplies, equipment, and instrumentation should be functional and in locations as specified in the Emergency Plan or implementing procedures. The licensee should have sufficient supplies, equipment, and instrumentation readily available to meet Emergency Plan requirements.
  1. As required by the Emergency Plan, current copies of the Emergency Plan and implementing procedures should be readily available in the emergency response facilities (e.g., the Emergency Operations Center and control room) for use by key emergency response personnel, such as, operators, senior operators, facility director, and health physics personnel. Review and approval signatures on actual concurrence sheets should be consistent with the licensee's procedural requirements.
  2. The licensee should have provisions for potential power failures as required by the Emergency Plan and the implementing procedures.
  3. The emergency communication equipment, radiological survey equipment, and emergency kits should be in a state of operational readiness as required by the Emergency Plan and implementing procedures.
- b. Emergency Response Personnel. Individuals assigned key roles for emergency response should understand their emergency assignments, responsibilities, and authorities. Particular attention should be given to the emergency director or coordinator, shift supervisor(s), and individuals involved in the classification and notification process. The licensee should have a method for contacting those personnel necessary to deal with and mitigate the emergency. The licensee should be requested to contact several key emergency responders. Call lists should be current and up-to-date. Responsible licensee personnel should be cognizant of the individuals to be contacted if offsite support is needed.

03.04 Offsite Support. The inspector should review the offsite support agreements identified in the Emergency Plan.

Offsite support agreements should be current in accordance with the Emergency Plan. Unless the Emergency Plan specifies renewal requirements for the agreement letter, there are no requirements. As background the period of every two years has been found acceptable for updating agreement letters at some Research and Test reactor facilities. This inspection is to verify through observations that the agreement letters are understood and the implementation ensured. Licensee interface with offsite personnel (e.g., police,

ambulance, and fire fighting personnel) may include annual tours of the facility or meetings at the offsite facility (e.g., hospital) to make sure offsite support personnel are familiar with the facility and what actions may be expected of them.

Selected individuals from both the licensee's and the offsite organizations should understand the communications and actions that are expected. If the licensee's emergency plan calls for support from onsite (on-campus) groups, the understanding of expected communications and actions by these groups should be determined. This may be accomplished by discussions or telephone calls with key members of the involved organizations, by discussions with personnel at the facility (such as with a patrolman on his rounds who may be the individual who first responds to an emergency), or through discussions with those responsible for emergency preparedness program implementation identified in Section 02.03, above.

If there are problems which indicate that the agreement letters were not understood or may not be adequately implemented, the inspector should inform appropriate management and the NRR project manager.

03.05 Emergency Alarms. The verification of one emergency alarm functional test should provide an acceptable sample for this inspection requirement. These checks can be verified by a review of respective licensee records. Some alarms may have been tested during observation of emergency preparedness exercises or drills and this observation would suffice for this inspection requirement. The types of emergency alarms and methods for testing should be discussed with the licensee. The licensee's emergency alarms should have been tested at a frequency specified in the TS, the Emergency Plan, and the licensee's procedures.

03.06 Emergency Preparedness Exercises and Drills. If practical, one emergency preparedness exercise or drill should be observed. If it is not possible to observe an emergency preparedness exercise or drill, the licensee's records should be examined to determine that all required exercises and drills were conducted. Exercise and drill requirements and frequencies are specified in the site-specific emergency plan. Key emergency responders should have participated in the exercises and drills as required.

### 03.07 Training

- a. Emergency Actions. The observation of an emergency preparedness exercise would provide an acceptable sample for this inspection requirement. If an emergency preparedness exercise cannot be observed, the inspector should verify by discussion and record review that two individuals at the facility understand the actions they are to take in emergency situations. This should include the classification of the event as well as protective actions to initiate.

Personnel in the immediate area of the incident should be able to recognize emergency indications (emergency sirens, evacuation alarms, and radiation alarms) and know which immediate protective actions to take to minimize the hazard to themselves and escorted individuals in the area. No one should have unescorted access without this minimum knowledge.

Individuals working in the vicinity or areas adjacent to the emergency (e.g., offices, classrooms and laboratories) should know which actions to take to minimize personnel exposures and the spread of contamination. In addition, these individuals should be able to recognize the evacuation alarm and should know where to go.

- b. Changes. Responsible personnel should (1) be aware of changes to the Emergency Plan, (2) be aware of associated changes to the implementing procedures and equipment, (3) understand the changes, and (4) have received adequate training to implement them.

#### 69011-04 RESOURCE ESTIMATE

04.01 For planning purposes, the direct inspection effort to complete this inspection procedure is estimated to be 12 hours.

#### 69011-05 REFERENCES

Regulatory Guide 2.6, "Emergency Planning for Research Reactors," March 1983.

NUREG-0849, "Standard Review Plan for the Review and Evaluation of Emergency Plans for Research and Test Reactors," May 1982.

ANSI/ANS 15.16-1982, "Emergency Planning for Research Reactors," 1982.

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