

PUBLIC NRR ACTION PLAN

CLOSURE OF BULLETIN 2011-01, "MITIGATING STRATEGIES"

TAC NO. Description	Last Update: June 28, 2011
ME6506, Bulletin 2011-01 Project Mgt	Lead Division: DPR
MPA X111, ME6398-ME6501	Supporting Divisions: DE, DSS, DRA, DIRS, DCI, DORL
	Supporting Offices: Regional Offices, NRO

Description: In light of the events at Fukushima – Daiichi Nuclear Power Station following the March 11, 2011, earthquake and tsunami, the U.S. Nuclear Regulatory Commission (NRC) issued Bulletin 2011-01, "Mitigating Strategies," in order to comprehensively verify licensee compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(hh)(2) and to obtain information associated with licensee mitigating strategies.

Background: Following the terrorist events of September 11, 2001, the readiness of NRC-regulated facilities to manage challenges to core cooling, containment and spent fuel pool (SFP) cooling following large explosions or fires was enhanced through a series of orders and imposition of license conditions. These requirements were formalized in the rulemaking of March 27, 2009, resulting in 10 CFR 50.54(hh)(2).

The NRC conducted a comprehensive inspection of the implementation of the mitigating strategies developed by licensees in 2008. Subsequently the NRC incorporated this inspectable area into the baseline reactor oversight process on a sample basis as part of the triennial fire protection inspection.

Events at the Fukushima Daiichi Nuclear Power Station following the March 11, 2011, earthquake and tsunami highlight the potential importance of B.5.b mitigating strategies in responding to beyond design basis events.

The existing guidance on the implementation of the strategies, which was adopted by all licensees to meet the regulatory requirements for mitigating strategies, does not describe in detail the practices necessary for maintenance and testing of the equipment, training requirements, and validation of feasibility of the strategies. Based upon the information submitted by licensees in response to Bulletin 2011-01, the NRC will determine if additional efforts are needed to ensure compliance with existing regulatory requirements and/or whether enhancement to the existing regulations and guidance are necessary.

Regulatory Outcome: The responses to Bulletin 2011-01 were requested in two sets. The 30-day response, which is due June 10, 2011, consists of licensee answers to the following questions:

1. Is the equipment necessary to execute the mitigating strategies, as described in your submittals to the NRC, available and capable of performing its intended function?
2. Are the guidance and strategies implemented capable of being executed considering the current configuration of your facility and current staffing and skill levels of the staff?

The desired outcome for this set of questions is a confirmation of compliance with the requirements to develop and implement/maintain guidance and strategies intended to maintain

or restore core cooling, containment, and SFP cooling. Information on any gaps identified will be shared with the appropriate Regional Offices for follow up inspection and documentation (e.g. enforcement action where appropriate).

The 60-day response, due July 10, 2011, consists of licensee answers to the following questions:

1. Describe in detail the maintenance of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it is functional when needed.

Examples of the types of information to include when providing your response to Question (1) are:

- a. Measures implemented to maintain the equipment, including periodicity.
- b. Basis for establishing each maintenance item (e.g., manufacturer's recommendation, code or standard applicable to the craft). This should include consideration of storage environment impact on the maintenance necessary.

These examples are not meant to limit your response if you use other methods to address the issues described above.

2. Describe in detail the testing of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it will function when needed.

Examples of the types of information to include when providing your response to Question (2) are:

- a. A description of any testing accomplished to ensure the strategies were initially feasible.
- b. A description of any periodic testing instituted for the equipment, along with the basis for establishing that test requirement.
- c. A description of the corrective action process used when the equipment fails to adequately perform its test.

These examples are not meant to limit your response if you use other methods to address the issues described above.

3. Describe in detail the controls for assuring that the equipment is available when needed.

Examples of the types of information to include when providing your response to Question (3) are:

- a. A description of any inventory requirements established for the equipment.
- b. A listing of deficiencies noted in inventories for the equipment and corrective actions taken to prevent loss.

These examples are not meant to limit your response if you use other methods to address the issues described above.

4. Describe in detail how configuration and guidance management is assured so that strategies remain feasible.

Examples of the types of information to include when providing your response to Question (4) are:

- a. Measures taken to evaluate any plant configuration changes for their effect on feasibility of the mitigating strategies.
- b. Measures taken to validate that the procedures or guidelines developed to support the strategies can be executed. These measures could include drills, exercises, or walk through of the procedures by personnel that would be expected to accomplish the strategies.
- c. Measures taken to ensure procedures remain up-to-date and consistent with the current configuration of the plant.
- d. A description of the training program implemented in support of the mitigating strategies and the manner in which you evaluate its effectiveness.

These examples are not meant to limit your response if you use other methods to address the issues described above.

5. Describe in detail how you assure availability of off-site support.

Examples of the types of information to include when providing your response to Question (5) are:

- a. A listing of off-site organizations you rely on for emergency response.
- b. Measures taken to ensure the continuity of memoranda of agreement or understanding or other applicable contractual arrangements. This should include a listing of periods of lapsed contractual arrangements.
- c. A listing of any training or site familiarization provided to off-site responders. This should include any measures taken to ensure continued familiarity of personnel of the off-site responders in light of turnover and the passage of time.

These examples are not meant to limit your response if you use other methods to address the issues described above.

The first three questions address a potential need for further guidance on the maintenance, testing, and control of equipment procured to execute the guidance and strategies required by 10 CFR 50.54(hh)(2). The endorsed guideline of Nuclear Energy Institute (NEI) 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline," only specifies that licensees will use "standard industry practices for procuring and maintaining commercial equipment." NRR intends to use the information received in response to these questions to determine if there is

sufficient definition and understanding of “standard industry practices” or if further guidance is necessary. Additionally, NRR will evaluate any reported changes to the maintenance, testing, and control of equipment with respect to noted deficiencies in those areas to determine if any further regulatory action is necessary.

The fourth question addresses the potential for plant configuration changes that render some strategy alternatives impossible, as well as occasional inspection findings of procedures developed for the strategies improperly identifying penetrations and equipment necessary to operate. In addition, this question addresses the training programs supporting the strategies. NEI 06-12 only specifies that the licensees’ training programs be consistent with Severe Accident Management Guideline type actions, for which there is no set regulatory standard. NRR will evaluate the information to determine if further guidance is necessary.

The fifth question addresses 1) the potential for lapsed contractual arrangements with off-site organizations and 2) any potential need for training of off-site responders. NRR will evaluate the information to determine if further guidance is necessary.

Should further regulatory guidance be necessary on these subjects, this guidance will be incorporated in a unified set of guidance combining the content of the Phase 1 Guidance Document of February 25, 2005 (designated safeguards information (SGI)) and the endorsement of NEI 06-12 into either a Regulatory Guide or an update to the Standard Review Plan. NRO has promulgated such a unified set of guidance as Interim Staff Guidance DC/COL-ISG-016, “Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d), Loss of Large Areas of the Plant due to Explosions or Fires from a Beyond-Design Basis Event,” Agencywide Documents Access and Management System (ADAMS) Accession No. ML100431200. NRR/DPR will work with NRO to ensure technical consistency with an eye to developing a single guidance document applicable to both currently operating and new reactors.

Milestones, Update Frequency, and Scheduled Dates for Completion:

Milestone	Scheduled	Actual	Comments
Issue Bulletin	5/11/2011	5/11/2011(C)	
30-day responses due	6/10/2011	6/10/2011(C)	
Evaluate 30-day responses	7/1/2011	6/22/2011(C)	
Notify Regions of potential non-compliances	7/8/2011	N/A	No non-compliances identified
60-day responses due	7/10/2011		
Issue RAI #1 on 30-day responses, if needed	7/15/2011		20 days for responses
Responses to RAI #1 due	8/4/2011		
Complete review of RAI #1 responses	8/19/2011		
Evaluate 60-day response adequacy	8/26/2011		
Issue RAI #2, if needed	9/9/2011		
Issue closure letters to licensees not issued RAI #2	9/23/2011		
Responses to RAI #2 due	10/9/2011		
Review RAI #2 responses and issue remaining closeout letters	11/18/2011		
Issue Bulletin Closure Memo	12/2/2011		
Follow-On Activities			
Evaluate responses for generic or plant specific regulatory action needs	12/2/2011		
Formulate recommendations on generic or plant specific regulatory needs	7/7/2012		

Current Status: N/A

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References:

1. Bulletin 2011-01, "Mitigating Strategies."
2. Order Modifying Licenses (Effective Immediately), Samuel J. Collins (NRC), EA-02-026, February 25, 2002.
3. Letter from James E. Dyer (NRC) to Holders of Licenses for Operating Power Reactors, "NRC Staff Guidance for Use in Achieving Satisfactory Compliance with February 25, 2005 Order Section B.5.b," February 25, 2005 (designated Safeguards Information).
4. Letter from Anthony R. Pietrangelo (NEI) to James E. Dyer (NRC), "NEI 06-12, Revision 2, B.5.b Phase 2 & 3 Submittal Guideline," December 14, 2006.
5. Letter from James E. Dyer (NRC) to Anthony R. Pietrangelo (NEI), December 22, 2006.

6. NRC TI 2515/171, "Verification of Site Specific Implementation of B.5.B Phase 2 & 3 Mitigating Strategies," February 6, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML073120469).
7. NRC TI 2515/171, Revision 1, "Verification of Site Specific Implementation of B.5.B Phase 2 & 3 Mitigating Strategies," July 25, 2008 (ADAMS Accession No. ML081340110).
8. NRC TI 2515/168, "Closeout Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures - Section B.5.b Plant Mitigating Strategies to Address Loss of Large Areas of the Plant due to Explosion or Fire," May 2006, (designated Safeguards Information)
9. Interim Staff Guidance, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d) Loss of Large Areas of the Plant due to Explosions or Fires from a Beyond-Design Basis Event," DC/COL-ISG-016, July 27, 2010 (ADAMS Accession No. ML100431200).