

Mitigation of Beyond-Design-Basis Events Rulemaking (aka Consolidated Rulemaking)
Industry-Developed Proposed Rule Language
August 26, 2014

50.xxx Beyond-Design-Basis Response Capabilities

(a) Applicability.

- (1) Each holder of an operating license for a nuclear power reactor unit under this part and each holder of a combined license under Part 52 of this chapter after the Commission has made the finding under § 52.103(g) shall comply with the requirements of this section.
- (2) Each holder of a combined license (COL) under part 52 of this chapter before the Commission has made the finding under § 52.103(g) shall comply with the requirements of this section, except as described in § 50.XXX(g). [Exclusion is necessary, because COL holders after the § 52.103(g) finding will need to show compliance with the drills and exercises section of § 50.XXX(g) before fuel load.]
- (3) The requirements of this section do not apply to an entity described in paragraph (a)(1) or (a)(2) that has submitted to the NRC the certifications described in section § 50.82(a) or § 52.110(a) of this chapter.

(b) Each licensee shall develop, implement, and maintain integrated beyond-design-basis response capabilities for:

- (1) Circumstances associated with loss of large areas of the plant due to explosions or fire - Strategies and guidelines to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities for a single onsite unit, to include strategies in the following areas:
 - (i) Firefighting;
 - (ii) Operations to mitigate fuel damage; and
 - (iii) Actions to minimize radiological release.
- (2) An extended loss of all AC power - Strategies and guidelines to maintain or restore core cooling, containment and spent fuel pool cooling capabilities for all onsite units resulting from a beyond design basis external event.
- (3) A severe accident - Strategies and guidelines for managing the consequences of accidents or events that result in damage to fuel in the reactor vessel, or stored in the spent fuel pool, at all onsite units. These strategies and guidelines shall include actions to:
 - (i) Arrest the progression of fuel damage;
 - (ii) Maintain the capability of the containment as long as possible; and
 - (iii) Minimize radiological releases release.

(c) The beyond-design-basis response capabilities listed in paragraph (b) shall include:

- (1) Defined roles, authorities and responsibilities necessary for directing implementation.
- (2) Integration of strategies and guidelines with the emergency operating procedures.
- (3) Sufficient personnel to perform implementation.

Mitigation of Beyond-Design-Basis Events Rulemaking (aka Consolidated Rulemaking)
Industry-Developed Proposed Rule Language
August 26, 2014

- (4) At least one onsite and one offsite communications system capable of remaining functional during an event involving an extended loss of alternating current power and local communications infrastructure.

- (d) Unless otherwise required by NRC regulations, a systems approach to training, as defined in 10 CFR 55.4, shall be used to provide training and qualifications on the strategies and guidelines listed in paragraph (b) to licensed operators and other emergency response positions that may select or direct implementation.

- (e) Drills or exercises that collectively demonstrate the capability for the integrated implementation of the strategies and guidelines listed in paragraph (b) shall be conducted. The time between consecutive demonstrations shall not exceed eight calendar years.

- (f) Change control.

- (1) A licensee may make changes to the strategies and guidelines provided that the proposed change is evaluated to verify that the provisions of this section would continue to be met if the change were implemented.

[Statement of Consideration: Clarify that the licensee would be expected to maintain compliance with the NRC endorsed guidance, including NRC-approved exceptions.]

- (2) A licensee may make a change to the strategies and guidance to use an alternative or exception approved by an NRC safety evaluation, provided that the bases of the NRC approval are applicable to the licensee's facility.

[Statement of Consideration: The licensee would still be required to apply any other regulations that govern change control to judge the acceptability of proposed facility changes. Of particular note, changes to power reactor facilities (e.g., intended to implement mitigation strategies features) would need to be evaluated for any impacts to safety-related structures, systems, and components under § 50.59 to ensure that no adverse impacts occurred with regard to those safety-related SSCs and associated functions. However, if the change screens out of 50.59 because it is BDB, then the change also screens out of fire protection and security change processes.]

- (3) If the change is determined to be an alternative, a written request shall be submitted for NRC review at least 180 days before implementation.

- (4) Documentation of all changes shall be maintained until the requirements of this section no longer apply.

Mitigation of Beyond-Design-Basis Events Rulemaking (aka Consolidated Rulemaking)
 Industry-Developed Proposed Rule Language
 August 26, 2014

(g) Implementation.

Industry proposed milestones (concepts for discussion/not verbatim):

[Note – implementation milestone contingencies may be needed if program scopes and/or methods of compliance are changed by the rule. No notifications/submittals required beyond those already in place to address existing orders and commitments.]

	Milestone	Date	Comment
1.	Conduct a FLEX Drill	TBD	Use NEI 13-06 as guidance.
2.	Conduct EDMG Drill	TBD	Use NEI 13-06 as guidance.
3.	Establish BDB Event Training (for those elements not already implemented earlier with FLEX)	TBD	Use NEI 13-06 as guidance.
4.	Update SAMGs to the current revision of OG guidance (does not include periodic OG updates)	TBD	Use materials provided by BWROG/PWROG
5.	Implement Procedure Integration (for those elements not already implemented earlier with FLEX)	TBD	Use NEI 14-01 as guidance. Remaining elements would be related to SAMGs.
6.	Implement enhanced Command and Control elements (for those elements not already implemented earlier with FLEX)	TBD	Use NEI 14-01 as guidance. Remaining elements would be related to SAMGs.
7.	Conduct SAMG Drill	TBD	Use NEI 13-06 as guidance.
8.	Complete Portable Equipment Drills	TBD	Use NEI 13-06 as guidance.

**Potential Edits to 10 CFR Part 50, Appendix
E, Section IV:**

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, including from all reactor core and spent fuel pool sources, 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. By June 20, 2012, for nuclear power reactor licensees, these action levels must include hostile action that may adversely affect the nuclear power plant. The 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.

E. Emergency Facilities and Equipment

Adequate provisions shall be made and described for emergency facilities and equipment, including:

1. Equipment at the site for personnel monitoring;
2. Equipment for determining the magnitude of and for continuously assessing the impact of the release of radioactive materials, including from all reactor core and spent fuel pool sources, to the environment;

F. Training

2.j. "The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must . . . Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, ~~implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2)~~, and integration of offsite resources with onsite response. The licensee . . . required by Section IV.F.2.a."

Mitigation of Beyond-Design-Basis Events Rulemaking (aka Consolidated Rulemaking)
Industry-Developed Proposed Rule Language
August 26, 2014

VI. Emergency Response Data System

3. Maintaining Emergency Response Data System:

- a. Any hardware and software changes that affect the transmitted data points identified in the ERDS Data Point Library⁹ (site specific data base residing on the ERDS computer) must be submitted to the NRC within 30 days after the changes are completed.
- b. Hardware and software changes, with the exception of data point modifications, that could affect the transmission format and computer communication protocol to the ERDS must be provided to the NRC as soon as practicable and at least 30 days prior to the modification.
- ~~c. In the event of a failure of the NRC supplied onsite modem, a replacement unit will be furnished by the NRC for licensee installation.~~