

Consolidated Rulemaking- Proof of Concept  
February 21, 2014

The following conceptual rule is only intended to facilitate discussion on the idea of rulemaking consolidation. The concepts are not being provided to solicit comments on the specific language, but rather to show that rule consolidation is viable and that such an effort could result in a better integrated set of requirements that reflects and aligns with industry implementation. The objective is a more coherent and understandable regulatory framework. The NRC staff views this approach as the most efficient means to rulemaking, but recognizes that stakeholders may have different views. We would like feedback on the concept to support our request to the Commission to approve this consolidation. Accordingly, all of this is concept only, since the Commission has not considered it to date. These concepts DO NOT constitute an official NRC position; these concepts are for discussion only.

This consolidated rulemaking would address, either in requirements or through supporting implementation guidance, regulatory actions that stem from all of the recommendations in NTTF 4, 7, 8, 9.1, 9.2, 9.3 with one exception (maintenance of ERDS capability throughout the accident), 10.2, and 11.1. Also note that ongoing efforts to develop guidance fit well within the conceptual structure described below for a consolidated rule (e.g., NEI 13-06 and NEI 14-01 support this integration very well).

This consolidated rulemaking could also include a regulatory action stemming from NTTF 9.4 Emergency Response Data System (ERDS) (modernization only). This action differs from the above list of regulatory actions because it is not essential for licensee's mitigation of a beyond design basis external event. Instead, it is important for communication purposes between the licensee and the NRC, and in some situations, other external stakeholders. Additionally, it has been voluntarily completed by industry, and could be readily incorporated into this rulemaking. The current intent would be to remove technology-specific references in the applicable portion of 10 CFR Part 50, Appendix E, associated with ERDS.

All requirements in the consolidated rulemaking are subject to backfit requirements, and more importantly, different portions of the consolidated rulemaking would have different backfit bases. Requirements stemming from EA-12-049 (i.e., making the Order requirements generically-applicable) would typically not be new impositions since Order EA-12-049 has already been imposed as adequate protection backfits. Any requirement extending beyond EA-12-049 would need to be justified under 10 CFR 50.109.

Stakeholders should also recognize that these concepts represent a snapshot in time, and that it's very probable that a proposed rule will differ from the concepts presented here. It could contain similar requirements or new requirements (not identified here), or portions of the concepts may not be proposed as requirements.

## 50.xxx Mitigation of Beyond-Design-Basis Events

(a) Applicability. (This section is intended to apply the requirements to power reactors only –both new and current– and not to RTRs or ISFSIs. Additionally, the current intent is to build in decommissioning provisions that “turn-off” the requirements once decommissioning occurs.)

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. COL holder before the Commission has made the finding under § 52.103(g).
3. OL and COL, and, with respect to paragraph (h) of this section, certain design certification applicants.
4. When an entity described in paragraph a. has submitted to the NRC the certifications described in section § 50.82(a) or § 52.110(a), then that entity can cease maintenance of the procedures, strategies, guidance, capabilities, or descriptions required by this section associated with maintaining and restoring core cooling for the unit described in the § 50.82(a) or § 52.110(a) certifications.
5. When the entity described in paragraph d. has permanently removed all spent fuel permanently from its spent fuel pool, then that license can cease maintenance of the procedures, strategies, guidance, capabilities, or descriptions required by this section associated with maintaining and restoring spent fuel pool cooling capabilities for the unit described in the § 50.82(a) or § 52.110(a) certifications.
6. The requirements of this section do not apply to Independent Spent Fuel Storage locations.

(b) Mitigation Strategies for Beyond Design Basis External Events. (This section would contain the “functional portion” of the beyond design basis external event mitigation strategies; i.e., EA-12-049 requirements/FLEX. The “equipment” requirements are in subparagraph (h). All of these conceptual requirements in this subparagraph fall within EA-12-049 which was justified as necessary for adequate protection, and as such these are not new impositions on current licensees.)

1. Each licensee shall develop, implement, and maintain strategies and guidance to mitigate beyond-design-basis external events that can be implemented site-wide and whenever there is irradiated fuel in the reactor vessel or spent fuel pool, to include:
  - i. Maintaining or restoring core cooling, containment, and spent fuel pool cooling capabilities; and
  - ii. Enabling the use and receipt of offsite assistance and resources to support the continued maintenance of the functional capabilities for core cooling, containment, and spent fuel pool cooling, until sufficient site functional capabilities can be maintained without the need for the

mitigation strategies. This shall include the need to plan for potential delays in receiving this assistance due to damage to offsite infrastructure.

(c) Extensive Damage Mitigation Guidelines (EDMGs). (This section could simply move § 50.54(hh)(2) into this rule since it fits well with the other requirements in this section. Accordingly it would not be a backfit. However, it may cause impact due to the need for licensees to revise references in procedures and programs, and in such a circumstance the rule may simply reference § 50.54(hh)(2) rather than moving the requirements to this rule.)

1. Each licensee shall develop, implement, and maintain strategies and guidance to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire, to include strategies in the following areas:
  - i. Fire fighting;
  - ii. Operations to mitigate fuel damage; and
  - iii. Actions to minimize radiological release.

(d) Severe Accident Management Guidelines (SAMGs). (This section would contain the SAMG requirements.)

1. Each licensee shall develop, implement, and maintain strategies and guidelines for mitigating the consequences of events that result in significant damage to fuel in the reactor vessel or stored in the spent fuel pool, to include:
  - i. Maintaining or restoring core cooling, containment and spent fuel pool cooling capabilities; and
  - ii. Minimizing radiological release.

(e) Integration, Command, and Control. (This section would contain the requirements that govern integration, command and control for all the procedures, guidance, and strategies of this rule.)

1. Each licensee shall develop, implement, and maintain the following procedures, strategies, and guidance documents in a manner that supports their effective integrated use:
  - i. Emergency operating procedures required by the licensee's technical specifications; and
  - ii. Strategies and guidance required by paragraphs (b), (c), and (d) of this section.
2. Each licensee shall be capable of maintaining effective command and control of event and accident mitigation response that requires integrated use of the procedures, strategies, and guidelines listed in this section. This includes response to events and accidents that affect multiple units within the licensee's site boundary. Each licensee shall describe the command and

control roles, responsibilities and authorities, including processes for transferring the command and control function during the progression of an event or accident. The licensee shall also specify the qualifications required for these command and control positions.

(f) Drills and Exercises. (This section would contain requirements that govern drills and exercises for the procedures, guidance, and strategies of this rule.)

1. By [insert date 4 years after rule becomes effective], and in each succeeding 8-year period, each licensee shall conduct drills, exercises, or both, that collectively demonstrate proficiency in the integrated use of the procedures, strategies, and guidance documents in this section and the command and control capabilities required by this section. Each licensee shall not exceed eight years between any consecutive drills or exercises.

(g) Change Control. (This section would contain change control requirements recognizing the limited applicability of 10 CFR 50.59 to beyond design basis events.)

1. A licensee may make changes to the procedures, strategies, guidance, capabilities, or descriptions required by this section if the licensee performs and retains an evaluation that the revised procedures, strategies, guidance, capabilities, or descriptions continue to ensure that the provisions of this section are met. (Note that other applicable regulations that govern change control would continue to apply since changes to facilities would additionally need to be evaluated for any impacts to safety-related structures, systems, and components. For example this include application of § 50.59 as well as other change control provisions such as § 50.54(q).)
2. Documentation of all changes to the mitigation strategies, supporting guidance, or relied upon equipment shall be maintained until the requirements of this section no longer apply.

(h) Requirements for Equipment Supporting the Mitigation Strategies for Beyond Design Basis External Events. (This section would contain the equipment requirements that stem from EA-12-049.)

1. The equipment relied upon for the mitigation strategies required by paragraph (b) of this section shall have sufficient capacity and capability such that core cooling, containment, and spent fuel pool cooling capabilities can be simultaneously maintained or restored for all the power reactor units on a site.
2. The equipment relied upon for the mitigation strategies required by paragraph (b) of this section shall be protected from the effects of severe natural

phenomena that are as severe as the design basis external events in the licensing basis for the facility.

3. There shall be design features that enable the connection of the portable equipment relied the mitigation strategies required by paragraph (b) of this section.
4. Equipment relied upon for the station blackout mitigation strategies shall receive sufficient testing and maintenance such that the equipment is expected to fulfill its intended function for a beyond design basis external event.

(i) Training requirements: (through conforming changes). (The current concept would be to incorporate any new training requirements to go into the currently existing sections in the CFR. It may make more sense to keep beyond design basis training separate, and perhaps build any requirements into the conceptual rule above or its supporting guidance.)

#### 10 CFR 50.120

(b)(2)(x) Personnel responsible for the integrated use of the procedures, strategies, and guidelines identified in 10 CFR 50.xxx and the command and control roles, responsibilities and authorities identified in 10 CFR 50.xxx.

#### 10 CFR 55.41 Written examination: Operators

\* \* \* \* \*

(b)(10) Administrative, normal, abnormal, emergency operating, and severe accident procedures and guidelines for the facility.

\* \* \* \* \*

#### 10 CFR 55.43 Written examination: Senior operators

\* \* \* \* \*

(b)(5) Assessment of facility conditions and selection of appropriate procedures, strategies, and guidelines during normal, abnormal, emergency, and severe accident situations.

\* \* \* \* \*

#### 10 CFR 55.45 Operating Tests

\* \* \* \* \*

(a)(6) Perform control manipulations required to obtain desired operating results during normal, abnormal, emergency, and severe accident situations.

**Submittal/Documentation Requirements.** (There would need to be requirements for applicants for new reactors that describe what information needs to be submitted and where that information should reside to support NRC's review of the application and to ultimately make a decision concerning issuance of a license. These application/submittal requirements depend upon the phase of licensing, and process followed (Part 50 or Part 52). Conceptually there could be requirements into the applicable portions of regulations such as §§ 50.34, 52.79 or 52.80.)