

the final safety analysis report for the referenced standard design certification are governed by the change control requirements in the applicable design certification rule.

[74 FR 28146, June 12, 2009]

§ 50.155 Mitigation of beyond-design-basis events.

(a) *Applicability.* (1) Each holder of an operating license for a nuclear power reactor under this part and each holder of a combined license under part 52 of this chapter for which the Commission has made the finding under § 52.103(g) of this chapter shall comply with the requirements of this section until submittal of the license holder's certifications described in § 50.82(a)(1) or § 52.110(a) of this chapter.

(2)(i) Once the certifications described in § 50.82(a)(1) or § 52.110(a) of this chapter have been submitted by a licensee subject to the requirements of this section, that licensee need only comply with the requirements of paragraphs (b) through (d) and (f) of this section associated with spent fuel pool cooling capabilities.

(ii) Holders of operating licenses or combined licenses for which the certifications described in § 50.82(a)(1) or § 52.110(a) of this chapter have been submitted need not meet the requirements of this section except for the requirements of paragraph (b)(2) of this section associated with spent fuel pool cooling capabilities once the decay heat of the fuel in the spent fuel pool can be removed solely by heating and boiling of water within the spent fuel pool and the boil-off period provides sufficient time for the licensee to obtain off-site resources to sustain the spent fuel pool cooling function indefinitely, as demonstrated by an analysis performed and retained by the licensee.

(iii) The holder of the license for Millstone Power Station, Unit 1, is not subject to the requirements of this section.

(iv) Holders of operating licenses or combined licenses for which the certifications described in § 50.82(a)(1) or § 52.110(a) of this chapter have been submitted need not meet the requirements of this section once all irradiated fuel has been permanently removed from the spent fuel pool(s).

(b) *Strategies and guidelines.* Each applicant or licensee shall develop, implement, and maintain:

(1) Mitigation strategies for beyond-design-basis external events—Strategies and guidelines to mitigate beyond-design-basis external events from natural phenomena that are developed assuming a loss of all ac power concurrent with either a loss of normal access to the ultimate heat sink or, for passive reactor designs, a loss of normal access to the normal heat sink. These strategies and guidelines must be capable of being implemented site-wide and must include the following:

(i) Maintaining or restoring core cooling, containment, and spent fuel pool cooling capabilities; and

(ii) The acquisition and use of offsite assistance and resources to support the functions required by paragraph (b)(1)(i) of this section indefinitely, or until sufficient site functional capabilities can be maintained without the need for the mitigation strategies.

(2) Extensive damage mitigation guidelines—Strategies and guidelines 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 impacted by the event, due to explosions or fire, to include strategies and guidelines in the following areas:

(i) Firefighting;

(ii) Operations to mitigate fuel damage; and

(iii) Actions to minimize radiological release.

(c) *Equipment.* (1) The equipment relied on for the mitigation strategies and guidelines required by paragraph (b)(1) of this section must have sufficient capacity and capability to perform the functions required by paragraph (b)(1) of this section.

(2) The equipment relied on for the mitigation strategies and guidelines required by paragraph (b)(1) of this section must be reasonably protected from the effects of natural phenomena that are equivalent in magnitude to the phenomena assumed for developing the design basis of the facility.

(d) *Training requirements.* Each licensee shall provide for the training of

personnel that perform activities in accordance with the capabilities required by paragraphs (b)(1) and (2) of this section.

(e) *Spent fuel pool monitoring.* In order to support effective prioritization of event mitigation and recovery actions, each licensee shall provide reliable means to remotely monitor wide-range water level for each spent fuel pool at its site until 5 years have elapsed since all of the fuel within that spent fuel pool was last used in a reactor vessel for power generation. This provision does not apply to General Electric Mark III upper containment pools.

(f) *Documentation of changes.* (1) A licensee may make changes in the implementation of the requirements in this section without NRC approval, provided that before implementing each such change, the licensee demonstrates that the provisions of this section continue to be met and maintains documentation of changes until the requirements of this section no longer apply.

(2) Changes in the implementation of requirements in this section subject to change control processes in addition to paragraph (f) of this section must be processed via their respective change control processes, unless the changes being evaluated impact only the implementation of the requirements of this section.

(g) *Implementation.* Each holder of an operating license for a nuclear power reactor under this part on September 9, 2019, and each holder of a combined license under part 52 of this chapter for which the Commission made the finding specified in 10 CFR 52.103(g) as of September 9, 2019, shall continue to comply with the provisions of paragraph (b)(2) of this section, and shall comply with all other provisions of this section no later than September 9, 2022, for licensees that received NRC Order EA-13-109 or September 9, 2021, for all other applicable licensees.

(h) *Withdrawal of orders and removal of license conditions.* (1) On September 9, 2022, Order EA-12-049, “Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,” and Order EA-12-051, “Order Modifying Licenses With Regard to Reliable Spent Fuel Pool Instrumentation,” are

withdrawn for each licensee or construction permit holder that was issued those Orders.

(2) On September 9, 2019, Enrico Fermi Nuclear Plant Unit 3, License No. NPF-95, license conditions 2.D(12)(h), “Reliable Spent Fuel Pool/Buffer Pool Level Instrumentation,” 2.D(12)(i), “Emergency Planning Actions,” and 2.D(12)(g), “Mitigation Strategies for Beyond-Design-Basis External Events,” except for 2.D(12)(g)1, are deemed removed from that license.

(3) On September 9, 2019, William States Lee III Nuclear Station, Unit 1, License No. NPF-101, license conditions 2.D(12)(d)11 regarding reliable spent fuel pool instrumentation, 2.D(12)(g), “Emergency Planning Actions,” and 2.D(12)(j), “Mitigation Strategies for Beyond-Design-Basis External Events,” except for 2.D(12)(j)1, and William States Lee III Nuclear Station, Unit 2, License No. NPF-102, license conditions 2.D(12)(d)11 regarding reliable spent fuel pool instrumentation, 2.D(12)(g), “Emergency Planning Actions,” and 2.D(12)(j), “Mitigation Strategies for Beyond-Design-Basis External Events,” except for 2.D(12)(j)1, are deemed removed from those licenses.

(4) On September 9, 2019, North Anna Unit 3, License No. NPF-103, license conditions 2.D(12)(g), “Reliable Spent Fuel Pool/Buffer Pool Level Instrumentation,” 2.D(12)(h), “Emergency Planning Actions,” and 2.D(12)(f), “Mitigation Strategies for Beyond-Design-Basis External Events,” except for 2.D(12)(f)1, are deemed removed from the license.

(5) On September 9, 2019, Turkey Point, Unit 6, License No. NPF-104, license conditions 2.D(12)(e)11 regarding reliable spent fuel pool instrumentation, 2.D(12)(g), “Emergency Planning Actions,” and 2.D(12)(h), “Mitigation Strategies for Beyond-Design-Basis External Events,” except for 2.D(12)(h)1, and Turkey Point, Unit 7, License No. NPF-105, license conditions 2.D(12)(e)11 regarding reliable spent fuel pool instrumentation, 2.D(12)(g), “Emergency Planning Actions,” and 2.D(12)(h), “Mitigation Strategies for Beyond-Design-Basis External Events,” except for

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2.D(12)(h)1, are deemed removed from those licenses.

[84 FR 39718, Aug. 9, 2019]

APPENDIX A TO PART 50—GENERAL DESIGN CRITERIA FOR NUCLEAR POWER PLANTS

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INTRODUCTION

Under the provisions of §50.34, an application for a construction permit must include the principal design criteria for a proposed facility. Under the provisions of 10 CFR 52.47, 52.79, 52.137, and 52.157, an application for a design certification, combined license, design approval, or manufacturing license, respectively, must include the principal design criteria for a proposed facility. The principal design criteria establish the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety; that is, structures, systems, and components that provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public.

These General Design Criteria establish minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have been issued by the Commission. The General Design Criteria are also considered to be generally applicable to other types of nuclear