



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 26, 2021

Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 –
CANCELLATION OF COMMITMENTS RELATED TO BEYOND-DESIGN-BASIS
EXTERNAL EVENT FLOODING ACTIONS (EPID NO. L-2021-JLD-0006)

Dear Sir or Madam:

This letter provides the U.S. Nuclear Regulatory Commission's (NRC's) acknowledgment and response to the letter received from Entergy Nuclear Operations, Inc. (Entergy, the licensee) on May 11, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21132A004), related to post-Fukushima hazard reevaluations. In its letter, Entergy reaffirmed that Indian Point Nuclear Generating, Unit Nos. 2 and 3 (Indian Point) are no longer operating plants, but are permanently shut down and defueled reactors. Therefore, the licensee no longer considers the NRC's March 12, 2012, request for information, issued pursuant to Section 50.54(f) of Title 10 to the *Code of Federal Regulations* (10 CFR) (hereafter referred to as the 50.54(f) letter), to be applicable to Indian Point. In addition, regulatory commitments regarding performance of flooding hazard integrated assessments (IA) are no longer applicable to Indian Point, and Entergy is canceling those commitments.

The NRC issued the 50.54(f) letter to all nuclear power reactor licensees and construction permit holders in response to lessons-learned from Japan's March 2011 earthquake and subsequent tsunami. Enclosures 1 through 4 to the 50.54(f) letter include information requests regarding Recommendations 2.1 (hazard reevaluations) and 2.3 (current hazard protection walkdowns) for seismic and flooding hazard actions, and Enclosure 5 includes Recommendation 9.3 for emergency preparedness, as part of the response to the "*Near-Term Task Force Recommendations for Enhancing Reactor Safety in the 21st Century*" report, issued July 12, 2011 (ADAMS Accession No. ML111861807). The 50.54(f) letter requests licensees to perform seismic and flooding walkdowns and hazard reevaluations, and emergency preparedness communication and staffing evaluations for prolonged loss of power events.

By letter dated February 8, 2017 (ADAMS Accession No. ML17044A004), Entergy submitted a written certification stating that it has decided to permanently cease operations at Indian Point Nuclear Generating, Unit Nos. 2 and 3, in accordance with 10 CFR Section 50.82(a)(1)(i). In this letter, Entergy provided notification to the NRC of its intent to permanently cease operations at Unit 2 no later than April 30, 2020, and at Unit 3 no later than April 30, 2021.

By letter dated July 24, 2017 (ADAMS Accession No. ML17209A740), Entergy requested NRC approval to defer the completion dates for the Indian Point IA and associated commitments from

December 31, 2018, until August 1, 2021. The requested deferral applied to the Entergy commitments to complete an IA using NRC-endorsed guidance. The July 24, 2017, letter provided the bases for the requested deferral.

By letter dated October 4, 2017 (ADAMS Accession No. ML17222A239), the NRC approved Entergy's request to defer the remaining activities related to the 50.54(f) letter. As discussed in the NRC's October 4, 2017, letter, the NRC staff reviewed the licensee flooding submittals to date which indicated that the impact to the site from the reevaluated flooding hazards is within the site's ability to cope with the hazards. In addition, Indian Point has achieved additional defense-in-depth for coping with an extended loss of alternating current power and loss of normal access to the ultimate heat sink due to external events, including those caused by flooding events, as a result of the licensee's compliance with Orders EA-12-049 and EA-12-051. The provided information does not indicate any concern regarding adequate protection of public health and safety for Indian Point due to the reevaluated flooding hazard. Considering the flooding coping capabilities, the NRC staff did not identify any substantial safety improvements that would be cost-justified to implement during the period of deferral. Accordingly, the flood hazard IA due date for Indian Point was deferred until August 1, 2021. The approval letter also notes, if the licensee decides to continue to operate either unit beyond 2021, the licensee would need to provide the IA by August 1, 2021.

By letter dated May 12, 2020 (ADAMS Accession No. ML20133J902), Entergy certified to the NRC that it had permanently ceased operations at Indian Point Unit 2 on April 30, 2020. In this letter, the licensee also provided notification to the NRC under 10 CFR 50.82(a)(1)(ii) that, as of May 12, 2020, all fuel has been permanently removed from the Unit 2 reactor vessel and placed in the spent fuel pool (SFP). Further, Entergy confirmed its understanding that, under 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for Unit 2 no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel.

By letter dated May 11, 2021 (ADAMS Accession No. ML21131A157), Entergy certified to the NRC that it had permanently ceased operations at Indian Point Unit 3 on April 30, 2021. In this letter, the licensee also provided notification to the NRC under 10 CFR 50.82(a)(1)(ii) that, as of May 11, 2021, all fuel has been permanently removed from the Unit 3 reactor vessel and placed in the SFP. Further, Entergy confirmed its understanding that, under 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for Unit 3 no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel.

In its commitment cancellation letter dated May 11, 2021, Entergy informed the NRC that it was canceling regulatory commitments associated with Beyond-Design-Basis External Event (BDBEE) flooding actions for Indian Point. This letter applies to the Entergy commitments to complete a flooding IA. In its letter, Entergy reaffirmed that Indian Point Unit Nos. 2 and 3 are no longer operating plants, but are permanently shut down and defueled reactors. The licensee no longer considers the NRC's March 12, 2012, 50.54(f) letter to be applicable to Indian Point. Therefore, the previous regulatory commitment regarding performance of an IA is no longer applicable at Indian Point, and Entergy is canceling those commitments. In addition, the conditional action identified in the NRC's October 4, 2017, letter is no longer applicable to Indian Point.

The underlying purpose of the 50.54(f) letter is to gain information in order to enable the NRC to determine whether the Indian Point license should be modified, suspended, or revoked. The licensee is no longer authorized to load fuel into the reactor pressure vessels at Indian Point and potential fuel-related accident scenarios are limited to the SFPs.

The NRC staff reviewed the licensee flooding submittals which indicated that the impact to the site from the reevaluated flooding hazards is within the site's ability to cope with the hazards. The safety of fuel located in the SFP is assured for an extended period through maintenance of pool structural integrity, which preserves coolant inventory and maintains margin to prevent criticality. Within a few months following permanent shutdown of the reactor, the decay heat levels present in the pool become very low. As such, the progression of any accident due to a BDBEE would be very slow, and recovery and mitigation actions could be completed over a longer period of time. Previous evaluations of SFP structures have determined that the SFP structure is extremely robust and capable of withstanding severe external events. The staff considered insights from NUREG-1738, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants" (ADAMS Accession No. ML010430066) and NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor" (ADAMS Accession No. ML14255A365). NUREG-2181 concluded that SFPs are robust structures that are likely to withstand severe earthquakes without leaking, and that SFPs accidents are a small contributor to overall risk. The staff also considered insights from the staff's assessment in SECY-15-0081 (ADAMS Accession No. ML15050A066) that the lessons learned from the Fukushima accident do not apply to permanently shutdown sites, including those with irradiated fuel in the SFP.

Based on the discussion above, the safety of the fuel stored in SFPs at Indian Point would not be substantially affected by potential changes in the flooding hazard levels. The NRC staff verified that the Indian Point certifications are docketed and that the license is no longer authorized for operation of the reactor or placement or retention of fuel in the reactor vessels. Further, the NRC staff has reviewed the licensee's responses to the information requests described in Enclosure 2 (Recommendation 2.1: Flooding) and Enclosure 4 (Recommendation 2.3: Flooding) to the 50.54(f) letter and have determined that the completion of the requests of Enclosure 2 are no longer necessary for Indian Point. The NRC staff has no objection to the cancellation of the regulatory commitments associated with the completion of a flooding IA for Indian Point.

If you have any questions regarding this letter, please contact Mr. Richard Guzman, at 301-415-1030 or Richard.Guzman@nrc.gov.

Sincerely,

Caroline L. Carusone, Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

cc: Distribution via Listserv

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ADAMS Accession No.: ML21132A201

***Via email**

NRR-106

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