



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

July 30, 2020

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 NO. 2 – CANCELLATION OF
COMMITMENT RELATED TO BEYOND-DESIGN-BASIS EXTERNAL EVENT
SEISMIC ACTIONS (EPID NO. L-2020-JLD-0002)

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 June 8, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20160A029), related to post-Fukushima hazard reevaluations. In its letter, Entergy reaffirmed that Indian Point Nuclear Generating, Unit No. 2 (IP2) is no longer an operating plant, but is a permanently shut down and defueled reactor. 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 IP2. In addition, a regulatory commitment regarding performance of a seismic probabilistic risk assessment (SPRA) is no longer applicable to IP2, and Entergy is canceling that commitment.

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 and 2.3 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 IP2 no later than April 30, 2020.

By letter dated May 10, 2017 (ADAMS Accession No. ML17136A345), Entergy requested NRC approval to defer the completion date for the IP2 SPRA and associated commitments until

August 1, 2020. The requested deferral applied to the Entergy commitments to use the insights gained through the performance of the SPRA for IP2 to determine what modifications, procedure, or strategy changes would provide the best safety improvement. The May 10, 2017, letter provided the bases for the requested deferral. The letter also asserts that the SFP evaluations are not warranted given the planned permanent cessation of power operations. In its May 10, 2017, letter, the licensee informed the NRC that it had completed the IP2 SPRA, and that the evaluation was available at the site for NRC staff to evaluate or inspect if desired.

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 audited the results and selected documents associated with the IP2 SPRA as a portion of the technical basis that supports the deferral. For the deferral of the seismic evaluations, the NRC staff considered: (1) the results and pertinent risk insights of the current IP2 SPRA; (2) the seismic design margin existing in nuclear power plants; (3) the documented ability of IP2 to cope with earthquakes larger than the design-basis earthquakes; (4) the limited time frame for continued operations at IP2; and (5) information regarding the seismic capacity of SFPs. Considering the seismic coping capabilities and the available seismic risk insights, the information did not indicate any concern regarding adequate protection of public health and safety for IP2 due to the reevaluated seismic hazard. Furthermore, the NRC staff did not identify any substantial safety improvements that would be cost-justified to implement during the period of deferral. Accordingly, the SPRA completions, and the spent fuel pool (SFP) assessments associated with the seismic hazard reevaluations at IP2 were deferred until August 1, 2020. The approval letter also states that "If the licensee decides to continue to operate the units beyond 2020 and 2021, respectively, the licensee would need to provide the SPRAs and the SFP assessments associated with the seismic hazard reevaluations at IP2 and IP3 by August 1, 2020, and August 1, 2021, respectively."

By letter dated May 12, 2020 (ADAMS Accession No. ML20133J902), Entergy certified to the NRC that it had permanently ceased operations at IP2 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 IP2 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 IP2 no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel.

In its June 8, 2020, letter, Entergy informed the NRC that it was canceling regulatory commitments associated with Beyond-Design-Basis External Event (BDBEE) seismic actions for IP2. This letter applies to the Entergy commitments to use the insights gained through the performance of the SPRA for IP2 to determine what modifications, procedure, or strategy changes would provide the best safety improvement. In its letter, Entergy reaffirmed that IP2 is no longer an operating plant, but is a permanently shut down and defueled reactor. The licensee no longer considers the NRC's March 12, 2012, 50.54(f) letter to be applicable to IP2. Therefore, the previous regulatory commitment regarding performance of an SPRA is no longer applicable to IP2, and Entergy is canceling that commitment. In addition, the conditional action identified in the NRC's October 4, 2017, letter is no longer applicable to IP2.

The underlying purpose of the 50.54(f) letter is to gain information in order to enable the NRC to determine whether the IP2 license should be modified, suspended, or revoked. The licensee is no longer authorized to load fuel into the vessel at IP2 and potential fuel-related accident scenarios are limited to the SFP. Unlike the reactor, 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. Previous evaluations of SFP structures have determined that seismic margins are very large. The staff considered insights from 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). This NUREG concluded that spent fuel pools are robust structures that are likely to withstand severe earthquakes without leaking, and that spent fuel pools 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 spent fuel pools would not be substantially affected by potential changes in the seismic hazard levels. The NRC staff verified that the IP2 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 vessel. Further, the NRC staff has reviewed the licensee's responses to the information requests described in Enclosure 1 (Recommendation 2.1: Seismic) and Enclosure 3 (Recommendation 2.3: Seismic) to the 50.54(f) letter and have determined that the requests of Enclosure 1 are no longer necessary for IP2. In addition, the NRC staff has no objection to the cancellation of the regulatory commitments associated with BDBEE seismic actions for IP2.

If you have any questions regarding this letter, please contact Mr. Robert Bernardo at 301-415-2261 or Robert.Bernardo@nrc.gov.

Sincerely,

/RA – Gregory F. Suber for/

Craig G. Erlanger, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-247

cc: Distribution via Listserv

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 – CANCELLATION OF COMMITMENT RELATED TO BEYOND-DESIGN-BASIS EXTERNAL EVENT SEISMIC ACTIONS (EPID NO. L-2020-JLD-0002) DATED JULY 30, 2020

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***Via email**

NRR-106

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