



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

July 18, 2018

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. 3 – SAFETY EVALUATION  
FOR RELIEF REQUEST IP3-ISI-RR-13 REGARDING FOURTH TEN-YEAR  
INSERVICE INSPECTION INTERVAL EXTENSION (EPID L-2017-LLR-0128)**

Dear Sir or Madam:

By letter dated October 18, 2017 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML17297A455), Entergy Nuclear Operations, Inc. (the licensee) submitted Relief Request IP3-ISI-RR-13 for Indian Point Nuclear Generating Unit No. 3 (Indian Point Unit 3) to the U.S. Nuclear Regulatory Commission (NRC). Entergy Nuclear Operations, Inc., proposed an alternative to the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 2001 Edition through 2003 Addenda. Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(z)(1), the licensee proposed to extend the current 10-year inservice inspection (ISI) interval 12 months beyond the one-year extension allowed by the ASME Code, Section XI, paragraphs IWA-2430(d)(1) and (d)(3). The licensee requested to use the alternative on the basis that the alternative provides an acceptable level of quality and safety.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in the subject request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions concerning this matter, please contact the Indian Point Unit 3 Project Manager, Mr. Richard Guzman, at (301) 415-1030 or [Richard.Guzman@nrc.gov](mailto:Richard.Guzman@nrc.gov).

Sincerely,

A handwritten signature in black ink that reads "James Danna". The signature is written in a cursive, flowing style.

James G. Danna, Chief  
Plant Licensing Branch 1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosure:  
Safety Evaluation

cc: Listserv



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO RELIEF REQUEST IP3-ISI-RR-13

FOURTH TEN-YEAR INSERVICE INSPECTION INTERVAL EXTENSION

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-286

EPID: L-2017-LLR-0128

1.0 INTRODUCTION

By letter dated October 18, 2017 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML17297A455), Entergy Nuclear Operations, Inc. (the licensee) submitted Relief Request IP3-ISI-RR-13 for Indian Point Nuclear Generating Unit No. 3 (Indian Point Unit 3) to the U.S. Nuclear Regulatory Commission (NRC). Entergy Nuclear Operations, Inc., proposed an alternative to the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 2001 Edition through 2003 Addenda.

The proposed alternative would allow the licensee to extend the current 10-year Inservice Inspection (ISI) interval 12 months beyond the one year extension allowed by the ASME Code, Section XI, paragraphs IWA-2430(d)(1) and (d)(3). Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(1), the licensee requested to use the alternative on the basis that the alternative provides an acceptable level of quality and safety.

2.0 REGULATORY EVALUATION

Adherence to Section XI of the ASME Code is mandated by 10 CFR 50.55a(g)(4), which states, in part, that ASME Code Class 1, 2, and 3 components will meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in ASME Code, Section XI.

Paragraph 10 CFR 50.55a(z) states that alternatives to the requirements of paragraphs (b) through (h) of 10 CFR 50.55a or portions thereof may be used when authorized by the Director, Office of Nuclear Reactor Regulation. A proposed alternative must be submitted and authorized prior to implementation. The licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety, or (2) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Enclosure

Based on the above, and subject to the following technical evaluation, the NRC staff finds that regulatory authority exists for Entergy to request the use of an alternative and the NRC to authorize the proposed alternative.

### 3.0 TECHNICAL EVALUATION

#### 3.1 ASME Code Component(s) Affected

The affected components are contained in the Indian Point Unit 3 fourth 10-year ISI/Containment Inservice Inspection (CII) Program Plan. Specifically, the affected components are the Examination Categories of the ASME Code, Section XI, which are the Class 1, 2, and 3 pressure retaining components and their supports in accordance with subsections IWA, IWB, IWC, IWD, IWE, IWF, IWL and the Risk Informed ISI Program Examination Category R-A.

#### 3.2 Applicable ASME Code Edition and Addenda

The Code of Record for the fourth 10-year ISI interval at Indian Point Unit 3 is the ASME Code, Section XI, 2001 Edition with 2003 Addenda.

#### 3.3 Applicable ASME Code Requirements

Paragraph IWA-2430(d) of ASME Code, Section XI, requires compliance with 10-year intervals for components inspected under Program B, and paragraphs IWA-2430(d)(1) and (d)(3) allow an extension of the interval by as much as one year. The Indian Point Unit 3 Fourth 10-year ISI interval is defined by Inspection Program B (IWA-2432).

#### 3.4 Licensee's Reason for Request

The current Indian Point Unit 3 fourth 10-Year Interval ISI/CII Program Plan became effective on July 21, 2009, and is scheduled to expire on July 20, 2020. The Indian Point Unit 3 ISI/CII Program Plan established the fourth 10-year interval in accordance with 10 CFR 50.55a and is compliant with ASME Code, Section XI. As a result of the recent decision to permanently cease operation of Indian Point Unit 3 by April 30, 2021, the licensee requests approval to extend the expiration date for the end of the Indian Point Unit 3 fourth 10-year interval ISI/CII Program Plan from July 20, 2020 to July 20, 2021. The 12-month interval extension of the ISI/CII Program Plan will allow the licensee to more effectively schedule and perform the inspections to be completed during refueling outage (RFO) 20 (spring 2019).

#### 3.5 Licensee's Proposed Alternative and Basis for Use

The licensee proposes to extend the current fourth 10-year ISI interval by 12 months (in addition to the one-year extension allowed by ASME Code, Section XI) to accommodate the recent decision to cease operation of Indian Point Unit 3 by April 30, 2021. This 12-month extension will allow one additional RFO (RFO 21) to complete the remainder of the inspections scheduled for the fourth 10-year interval, if the plant does not shutdown. The licensee states that these inspections would only be completed if the current plan to permanently cease operation of Indian Point Unit 3 is changed in the future.

The licensee has performed the inspections and non-destructive examinations of the applicable Indian Point Unit 3 systems, structures, and components (SSCs) to the extent practical and possible as permitted by existing designs, equipment arrangements, available access, and

radiological conditions for the fourth 10-year interval from 2009 to 2017. The inspections and examinations completed to date provide assurance that the ISI Program and applicable SSCs have been maintained in accordance with the requirements in ASME Code, Section XI.

The ASME Code, Section XI, requires that 100 percent of the scheduled inspections be completed during the 10-year ISI interval and that pre-determined percentages be completed during each of the three inspection periods within the interval. The percentage of examinations required for Indian Point Unit 3 by ASME Code, Section XI, Table IWB-2412-1, were completed during the first two periods of the current fourth 10-year interval and first refueling outage of the third period. The licensee stated that the proposed extension of the current 10-year inspection interval will not result in a decrease in safety because the inspections completed to date have not identified any active degradation mechanisms which could impact the SSCs affected by this relief request. Not having to perform the remainder of the fourth interval inspections will give the licensee additional flexibility and optimization of the required resources and a reduction in the personnel radiation exposure associated with performing these inspections. The expected personnel radiation dose avoidance by not performing these inspections is 1.0 person Roentgen equivalent man (Rem).

### 3.6 NRC Staff Evaluation

As indicated in the licensee's submittal, the fourth 10-year ISI interval started on July 21, 2009. The original end date scheduled for the fourth 10-year ISI interval is July 20, 2019. However, the licensee extended the original end date of the fourth ISI 10-year ISI interval to July 20, 2020, which does not require NRC approval because this action is permitted by the ASME Code, Section IX, IWA-2430(d)(1) and (d)(3). In the relief request, the licensee is proposing to extend the current fourth 10-year ISI interval by an additional 12 months from July 20, 2020 to July 20, 2021 to accommodate the recent decision to cease operation of Indian Point Unit 3 by April 30, 2021.

The inspection schedule for the Indian Point Unit 3 fourth 10-year interval is divided into three periods. The first period is from July 21, 2009 to July 20, 2013 which covers RFO 16 (spring 2011) and RFO 17 (spring 2013). The second period is from July 21, 2013 to July 20, 2016, which covers RFO-18 (spring 2015). The proposed third period is from July 21, 2016 to July 20, 2021 which covers RFO 19 (spring 2017), RFO 20 (spring 2019) and RFO 21 (spring 2021). There are two more refueling outages remaining in the fourth 10-year ISI interval: RFO-20 and RFO-21.

Approximately one-third of the 10-year ISI's are normally scheduled to be completed during each period, except for items that may be deferred until the end of the interval. The NRC staff noted that during the first two periods of the current fourth 10-year interval and RFO 19 of the third period, the licensee completed the pre-determined percentage of the inspections required by ASME Code, Section XI, Table IWB-2412-1, and that their inspections to-date have not identified any active degradation mechanisms which could impact the SSCs affected by this relief request. The NRC staff noted that the licensee has been in full compliance in its ISI's for their first two periods.

As stated above, the licensee will complete all required inspections in the fourth 10-year ISI interval to satisfy the ASME Code, Section XI by July 20, 2021, if the current plan to permanently cease operation of Indian Point Unit 3 by April 30, 2021, is changed. The NRC staff noted that inspections such as the thermal fatigue inspections identified as a result of industry operating experience and any follow up inspections from previously identified

non-conforming conditions will still be completed as required by Materials Reliability Program No. 146, Revision 1, and the ASME Code, Section XI.

The NRC staff concludes that based on: (1) the licensee's current plan to complete all required inspections if they do not cease operation before the proposed end date of the fourth ISI 10-year interval; (2) the licensee's full compliance with ASME Code, Section XI, Table IWB-2412-1; and (3) their operating experience showing no active degradation on SSCs; there is reasonable assurance of structural integrity of affected components covered by IP3-ISI-RR-13 for the proposed ISI interval extension.

#### 4.0 CONCLUSION

As set forth above, the NRC staff determines that the licensee has demonstrated that the proposed alternative provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff approves the use of RR 13 at Indian Point Unit 3 for the fourth 10-year ISI interval until July 20, 2021.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in the subject request for relief remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: D. Render

Date: July 18, 2018

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\*by e-mail

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