



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

June 7, 2010

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 - RELIEF REQUEST
RR-02 FOR THE FOURTH 10-YEAR INSERVICE INSPECTION INTERVAL
(TAC NO. ME1576)**

Dear Sir or Madam:

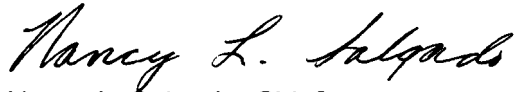
By letter dated June 24, 2009, Entergy Nuclear Operations, Inc. (Entergy or the licensee) submitted Relief Request IP3-ISI-RR-02 to the Nuclear Regulatory Commission (NRC) for the fourth 10-year inservice inspection (ISI) interval at Indian Point Nuclear Generating Unit No. 3 (IP3). The licensee requested an alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, pertaining to the requirements for marking welds and areas subject to surface or volumetric examinations.

The NRC staff concludes that the licensee's proposed alternative will provide reasonable assurance that all welds which receive the ASME Code-required surface or volumetric examinations during the fourth 10-year ISI interval at Indian Point 3 will be appropriately marked to ensure that examinations are successfully performed and indications are properly identified. The NRC staff also concludes that establishing a reference system for all welds and areas subject to surface or volumetric examinations in accordance with the requirements of the ASME Code, Section XI, Subarticle IWA-2600 will result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, the licensee's proposed alternative in Request IP3-ISI-RR-02 is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) for the fourth 10-year ISI interval at Indian Point 3.

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If you have any questions, please contact the Indian Point Project Manager, John Boska, at (301) 415-2901.

Sincerely,

A handwritten signature in black ink, reading "Nancy L. Salgado". The signature is written in a cursive style with a large, stylized 'N' and 'S'.

Nancy L. Salgado, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosure:
As stated

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST NO. RR-02

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-286

1.0 INTRODUCTION

By letter dated June 24, 2009, Agencywide Documents Access and Management System Accession No. ML091820325, Entergy Nuclear Operations, Inc. (Entergy or the licensee) submitted Relief Request IP3-ISI-RR-02 to the Nuclear Regulatory Commission (NRC) for the fourth 10-year inservice inspection (ISI) interval at Indian Point Nuclear Generating Unit No. 3 (IP3). The licensee requested an alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, pertaining to the requirements for marking welds and areas subject to surface and/or volumetric examinations. This safety evaluation addresses the merits of the request for relief from ASME Code requirements proposed by the licensee. The licensee requested relief pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i).

2.0 REGULATORY REQUIREMENTS

The ISI of ASME Code Class 1, 2, and 3 components is to be performed in accordance with the requirements of Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the ASME Code and applicable editions and addenda as required by 10 CFR 50.55a(g), except where specific relief has been granted by the NRC.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components and their integral attachments must meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical within the limitation of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed in 10 CFR 50.55a(b). The applicable ASME Code of record for the fourth 10-year interval ISI program at IP3 is the 2001 Edition through the 2003 Addenda of the ASME

Enclosure

Code, Section XI. The fourth 10-year interval ISI program at IP3 extends from July 2009 until July 2019.

Pursuant to 10 CFR 50.55a(a)(3), alternatives to the requirements of paragraphs (c), (d), (e), (f), (g), and (h) of 10 CFR 50.55a may be authorized by the NRC if the licensee demonstrates that: (i) the proposed alternatives provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The licensee submitted Relief Request RR-02 pursuant to 10 CFR 50.55a(3)(i) as an alternative to the requirements of Paragraph IWA-2600 of the ASME Code, Section XI.

3.0 TECHNICAL EVALUATION

3.1 Component Identification

Relief Request IP3-ISI-RR-02 addresses all ASME Code Class 1, 2, and 3 welds and areas that are subject to surface or volumetric examination.

3.2 Licensee's Proposed Alternative

The 2001 Edition through the 2003 Addenda of the ASME Code, Section XI, Subarticle IWA-2600 requires that a reference system be established for all welds and areas subject to surface or volumetric examination. Subarticle IWA-2600 also states that each weld and area shall be located and identified by a system of reference points. The reference system shall permit identification of each weld, location of each weld centerline, and designation of regular intervals along the length of the weld.

Pursuant to 10 CFR 50.55a(a)(3)(i), Relief Request IP3-ISI-RR-02 proposed an alternative to the requirements of the ASME Code, Section XI, Subarticle IWA-2600. In this request, the licensee specifically requested authorization to mark individual welds and areas as the surface or volumetric examinations are being performed in lieu of the requirements of Subarticle IWA-2600, which mandates the marking of all welds and areas subject to surface or volumetric examination prior to the actual performance of the ISI examinations. The licensee provided the following justification for its proposed alternative:

The weld reference system described below shall be used for locating welds on existing piping and components and new installations.

Datum reference markings will be established in the event that recordable indications are to be reported. Such datum points shall either be marked on the component or have their locations adequately described in the inspection documentation so that subsequent relocation can be achieved.

The method proposed for the identification of indication locations is identical to the one employed at IP3 during the first, second, and third inspection intervals.

The current code requirements include the establishment of a weld reference system which includes the initial marking of weld joints. At the time of

construction of IP3, the application of a reference system which included the marking of welds before or during the preservice examination was not required by the code and, accordingly welds were not marked.

A reference system for controlling the selection and documentation of datum points has been in effect since preservice inspections were performed in the early 1970's. The datum and conventions established at that time have been retained to promote consistency in the recording of data. The general conventions used at IP3 for establishing weld reference datum points include:

Reference system for pipe:

The datum point for a circumferential weld on a horizontal pipe is the intersection of the top centerline of the pipe and the weld centerline. Dimensions are taken in a clockwise direction when viewing along the direction of system flow, which is marked on the line isometric drawing.

The datum point for a circumferential weld on a vertical pipe is the intersection of the weld centerline and the centerline through the outside (extrados) of the elbow or bend that is in the direction of the lower weld number.

The datum for a longitudinal weld is the weld centerline and the intersecting circumferential weld.

Reference system for vessels:

The datum for circumferential welds is the intersection of the weld centerline and the centerline of the adjacent longitudinal weld. Dimensions are taken in a clockwise direction when viewed from the top.

Where there is no intersecting weld, the datum point is drawn from an existing structural point (e.g., the centerline of hot leg manway). This is identified on the data sheet for the weld examination.

The datum for longitudinal welds is the intersection of the weld centerline and the centerline of the intersecting upper circumferential weld.

The weld reference system currently in use at IP3 has been performing satisfactorily for the first, second, and third 10-year intervals. The locations of indications have been positively identified using the aforementioned conventions. Entergy believes the weld reference system currently in use at IP3 provides an acceptable level of safety and quality to address the requirements of Subsections IWA-2600 and III-4300. Therefore, the marking of weld joints is not necessary.

3.3 NRC Staff Evaluation

The ASME Code requires that a reference system be established for all welds and areas subject to surface or volumetric examinations. Each such weld and area shall be located and identified by a system of reference points. The system shall permit identification of each weld, location of each weld centerline, and designation of regular intervals along the length of the weld.

The licensee proposed to utilize the method of identification used during the first three inspection intervals. The weld reference system described by the licensee in its submittal will be used for locating welds on existing piping and components and new installations.

Datum reference markings will be established in the event that recordable indications are to be reported. Such datum points shall either be marked on the component or have their locations adequately described in the inspection documentation so that subsequent relocation can be achieved.

The licensee noted that at the time of construction of IP3, the application of a reference system which included the marking of welds before or during the preservice examination was not required by the ASME Code and, accordingly welds were not marked. The licensee's current reference system for controlling the selection and documentation of datum points has been in effect since preservice inspections were performed in the early 1970's. The datum and conventions established at that time have been retained by the licensee to promote consistency in the recording of data.

The NRC staff notes that establishing a new weld reference system is a major effort. To establish a weld reference system in accordance with ASME Code requirements would require many hours of work and many person-rem of radiation dose to locate the welds, remove the insulation, mark the welds, and re-install the insulation. Not all welds are required to be examined during inservice inspections, but they would all have to be located and marked to implement the new weld reference system. Therefore, the NRC staff concludes that to require a weld reference system that conforms to the ASME Code of Record would result in a hardship without a compensating increase in the level of quality and safety.

4.0 CONCLUSION

The NRC staff concludes that the licensee's proposed alternative will provide reasonable assurance that all welds which receive the ASME Code-required surface or volumetric examinations during the fourth 10-year ISI interval at IP3 will be appropriately marked to ensure that examinations are successfully performed and indications are properly identified. The NRC staff also concludes that establishing a reference system for all welds and areas subject to surface or volumetric examinations in accordance with the requirements of the ASME Code, Section XI, Subarticle IWA-2600 will result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, the licensee's proposed alternative in Request IP3-ISI-RR-02 is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) for the

fourth 10-year ISI interval at IP3. All other requirements of the ASME Code, Section XI, for which relief has not been specifically requested and approved remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributors: C. Sydnor
J. Boska

Date: June 7, 2010

- 2 -

If you have any questions, please contact the Indian Point Project Manager, John Boska, at (301) 415-2901.

Sincerely,

/ra/

Nancy L. Salgado, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-286

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As stated

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