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December 23, 2009

NL-09-163

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Relief Request IP3-ISI-RR-04 For Fourth Ten-Year Inservice Inspection Interval
Indian Point Unit Number 3
Docket No. 50-286
License No. DPR-64

Dear Sir or Madam:

Entergy Nuclear Operations, Inc. (Entergy) is submitting Relief Request No. IP3-ISI-RR-04 (Enclosure 1) for Indian Point Unit No. 3 (IP3). This relief request is for the Fourth 10-year Inservice Inspection (ISI) Interval. The relief request results from the rule change to 10 CFR 50.55a. The relief request is due to the elimination of the rule for reactor head inspections which requires a relief request to be submitted to replace the prior rule relaxation.

The enclosed relief request evaluates the proposed alternatives and conclude they provide an acceptable level of quality and safety. The relief request is requested under the provisions of 10CFR 50.55a(a)(3)(i).

There are no new commitments identified in this submittal. If you have any questions or require additional information, please contact Mr. Robert Walpole, Licensing Manager at 914-734-6710.

Very truly yours,

Ann Stewart
for

RW/sp
cc next page

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NRR

Enclosure: 1. Relief Request No: IP3-ISI-RR-04 Proposed Alternative Examination Area

cc: Mr. John P. Boska, Senior Project Manager, NRC NRR DORL
Mr. Samuel J. Collins, Regional Administrator, NRC Region I
NRC Resident Inspector's Office Indian Point
Mr. Paul Eddy, New York State Department of Public Service
Mr. Francis J. Murray Jr., President and CEO NYSERDA

Enclosure 1 To NL-09-163

RELIEF REQUEST NO: IP3-ISI-RR-04

PROPOSED ALTERNATIVE EXAMINATION AREA

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET NO. 50-286

Indian Point Unit 3

Relief Request IP3-ISI-RR-04
Proposed Alternative Examination Area
to ASME Code Case N-729-1

Proposed Alternative
in Accordance with 10 CFR 50.55a(a)(3)(i)
Alternative Provides an Acceptable Level of Quality and Safety

ASME Code Components Affected

Examination Category: Not Applicable
Item Number: B4.20 in Table 1 of Code Case N-729-1

Description: Control Rod Drive Nozzles
Code Class: 1

Applicability Code Additions and Addenda

The Code of Record for Indian Point Unit 3 Inservice Inspection fourth Ten-Year Interval is the ASME Section XI Code, 2001 Edition, 2003 Addenda as augmented by Code Case N-729-1 with limitations/modifications for use stated in 10 CFR 50.55a(g)(6)(ii)(D)(3). Code Case N-729-1 was approved September 8, 2008 and upon implementation supersedes the First Revised NRC Order EA–03–009.

Applicable Code Requirement

Code Case N-729-1, Section 2500 states that components shall be examined as specified in Table 1 and if obstructions or limitations prevent examination of the volume or surface required by Figure 2 for one or more nozzles, the analysis of Appendix I shall be used to demonstrate the adequacy of the examination volume or surface of each nozzle. 10 CFR 50.55a(g)(6)(ii)(D)(6) states that Appendix I of ASME Code Case N-729-1 shall not be implemented without prior NRC approval.

Code Case N-729-1, Figure 2, Examination Volume for Nozzle Base Metal and Examination Area for Weld and Nozzle Base Metal, identifies the examination volume or surface as "a = 1.5 in. (38 mm) for Incidence Angle, Θ, ≤ 30 deg and for all nozzles ≥ 4.5 in. (115 mm) OD or 1 in. (25 mm) for Incidence Angle, Θ, > 30 deg; or to the end of the tube, whichever is less."

Reason for Request

The design of the RPV head penetration nozzles (see Figure 1) includes a threaded section, approximately ¾ inches long, at the bottom of the nozzles. The dimensional configuration at some nozzles is such that the inspectable distance from the lowest point of the toe of the J-groove weld to the bottom of the scanned

region is less than the 1-inch and 1 ½ inch lower boundary limit as defined in Figure 2 of Code Case N-729-1.

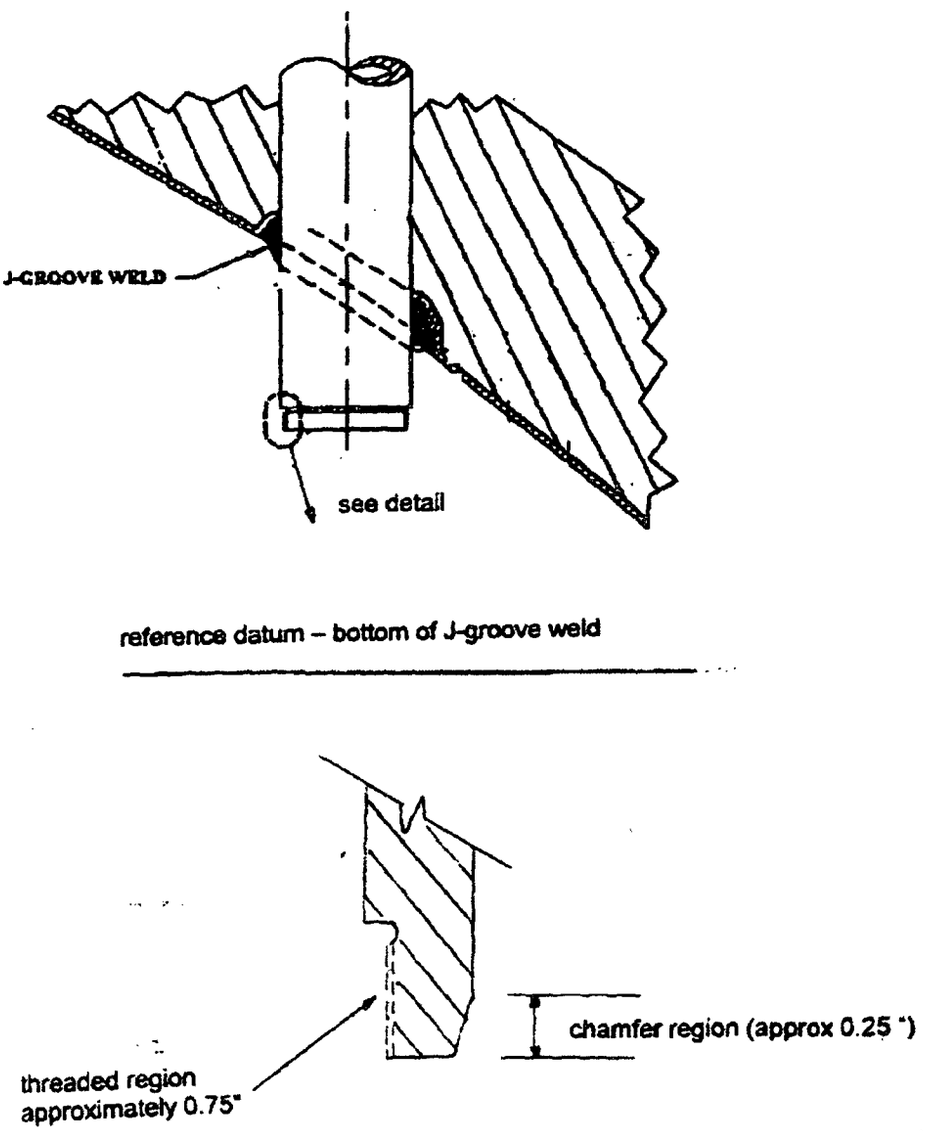

Figure 1

Proposed Alternative and Basis For Relief

Use Appendix I of Code Case N-729-1 to define an alternative examination area/volume to that defined in Figure 2 of the Code Case.

Perform UT from the inside surface of each RPV head penetration nozzle from 1-inch and 1 ½ inch above the J-groove weld (i.e., the upper boundary limit defined in Figure 2 of Code Case N-729-1) and extending down the nozzle to at least the top of the

threaded region. Table 1 provides the minimum inspection coverage required to ensure that a postulated axial through-wall flaw in the un-inspected area of the CRDM penetration nozzle will not propagate into the pressure boundary formed by the J-groove weld prior to a subsequent inspection (i.e. 2 Effective Full Power Years, EFPY). The time estimates are more than the time between successive inspections. This exam provides reasonable assurance that structurally significant flaws will not exist at or above the weld root and assure that operation between refueling outages can be accomplished without pressure boundary leakage from the examined nozzles.

TABLE 1

IP3 RPV Head Penetrations – Minimum Inspection Coverage Requirements Below the J-Groove Weld to ensure structural integrity and leak tightness between inspections

Nozzle Penetration No.	Angle of Incidence (Degrees)	(1) Minimum Required UT Coverage Below J-Groove Weld with > 2 EFPY by Crack Growth Evaluation (Inches)	Time (EFPY) to Reach the Lowest Point of the Toe of the J-Groove Weld
1 through 29	0 to 24.8	0.4	3.0
30 through 37	26.2	0.4	2.7
38 through 69	30.2 to 38.6	0.4	2.7
70 through 73	44.3	0.3	3.0
74 through 78	48.7	0.3	4.2
Note:			
(1) Length below the lowest point at the toe of the J-groove weld (downhill side) that has an operating stress level of 20 ksi: 0.86 inches at nozzles 1 through 29; 0.50 inches at nozzles 30 through 69; 0.35 inches at nozzles 70 through 73 and 0.35 inches at nozzles 74 through 78.			

Additional technical justification that was used for the relaxation request from NRC Order EA-03-009 was submitted on the IP2 docket (Entergy letter NL-09-130 (TAC ME1658) dated September 24, 2009) in support of a similar relief request. This information provides the flaw analysis including assumptions, specific methodology and results of the stress analysis performed for the nozzles subject to this relief request.

Duration of Propose Alternative

Relief is requested for the fourth ten-year interval of the Inservice Inspection Program for Indian Point Unit 3, which began July 21, 2009 and concludes July 20, 2019. This relief request was previously granted for the third ten-year interval (see precedents 1 and 2).

Precedents

1. Safety Evaluation for Unit 3, "Relaxation of First Revised Order on reactor Vessel Nozzles, Indian Point No. 3 (TAC No. 3195) dated March 18, 2005.

2. Indian Point Nuclear Generating Unit no.3 -Relief Requests RR-3-45 and RR-3-46 for reactor vessel head penetrations examination, (TAC NOS. ME0411 AND ME0412), July 8, 2009.