Entergy

Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043
Tel 269 764 2000

Paula K. Anderson
Licensing Manager

PNP 2011-034

May 3, 2011

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

SUBJECT: Request for Relief from ASME Code, Section XI, Requirements for Reactor Pressure Vessel Shell-To-Flange Weld Examination

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(a)(3)(i), Entergy Nuclear Operations, Inc. (ENO) is requesting relief from certain sections of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), for the internal inservice inspection of the reactor vessel and piping loop attachment welds. The details of the relief request are in Attachment 1.

Attachment 1 contains the relief request from the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Subsection IWA-2232, for ultrasonic examination of the reactor pressure vessel flange to upper shell weld. As an alternative, ENO proposes to use ASME Code, Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems." The proposed alternative provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(a)(3)(i).

ENO requests approval by April 7, 2012 to allow the alternative examination to be used during the 2012 refueling outage.

Summary of Commitments

This letter identifies no new commitments and no revisions to existing commitments.

Sincerely,

pka/jlk

Attachment: 1. Request for Relief from ASME B&PV Code, Section XI

cc: Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

ATTACHMENT 1

REQUEST FOR RELIEF FROM ASME B&PV CODE, SECTION XI

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

1.0 American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) Components Affected

Reference: ASME Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Subarticle IWB-2500, Table IWB-2500-1, Examination Categories

ASME Code Class	ASME Examination Category	Code Item No.	Component ID	Component Description	Exam Method
1	B-A	B1.30	Reactor Pressure Vessel Circumferential Weld 7-112	Reactor Pressure Vessel shell-to-flange weld	Volumetric

2.0 Applicable Code Edition and Addenda

ASME Code, Section XI, 1989 Edition, no addenda, is specified for the Palisades Nuclear Plant (PNP) third inservice inspection (ISI) interval.

PNP is currently in its fourth ISI interval. However, the reactor pressure vessel (RPV) weld examinations are part of the third ISI interval examinations in accordance with an approved relief request to extend the third ten-year ISI interval for the RPV weld examination (NRC letter to Entergy Nuclear Operations, Inc. (ENO) dated February 11, 2009, extended the ISI interval for Category B-A and Category B-D welds to December 12, 2015. ADAMS Accession No. ML090120896). The specified ASME Code for the fourth ISI interval is Section XI, 2001 Edition, with addenda to 2003.

3.0 Applicable Code Requirements

ASME Code, Section XI, Table IWB2500-1, Examination Categories, Category B-A, Pressure Retaining Welds in Reactor Vessel, item B1.30, specifies a volumetric examination be performed in each 10-year inspection interval.

ASME Code, Section XI, 1989 Edition, Paragraph IWA-2232, Ultrasonic Examination, requires that ultrasonic examinations be conducted in accordance with Appendix I.

ASME Code, Section XI, Mandatory Appendix I, Subarticle I-2100 requires: "Ultrasonic examination of vessel welds greater than two-inch thickness shall be conducted in

accordance with Article 4 of Section V, as supplemented by this Appendix. Supplements identified in Table I-2000-1 shall be applied."

The ASME Code, Section XI, 1989 Edition, Subsection IWA-2630, Vessels, states that "The requirements of Appendix A of Article 4 are acceptable for vessels examined in accordance with Article 4 of Section V."

ASME Code, Section V, Article 4, Ultrasonic Examination Methods for Welds, covers examinations of the RPV flange to upper shell weld.

4.0 Reason for Request

The introduction of performance based ultrasonic procedure, equipment, and personnel qualification has provided a more rigorous process from the prescriptive based process of ASME Code, Section V, Article 4, for the qualification of UT procedures and performing examinations. ENO is required by the code of record (1989, no addenda) to perform volumetric examination of the PNP RPV upper shell-to-flange weld from the inside surface during the third interval ISI using the latter ASME Code, Section V, Article 4, technique.

In accordance with 10 CFR 50.55a(a)(3)(i), ENO is requesting relief from the requirements of ASME Code, Section XI, Subsection IWA-2232. The relief would allow ENO to implement an alternative to ASME Code, Section V, Article 4, for volumetric weld examinations performed from inside the PNP reactor pressure vessel.

ENO has concluded that the proposed alternative would provide an acceptable level of quality and safety.

5.0 Proposed Alternative and Basis for Use

Pursuant to 10 CFR 50.55a(a)(3)(i), ENO requests relief to use the alternative requirements in the 1995 Edition, with 1996 Addenda, of the ASME Code, Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," Supplements 4 and 6 as amended by10 CFR 50.55a. The alternative requirements will be used to perform automated ultrasonic examinations of the RPV upper shell-to-flange weld using procedures, personnel, and equipment.

The ASME Code, Section V, Article 4, is a prescriptive-based process for qualifying UT procedures and performing examinations. The Appendix VIII requirements were developed and adopted to ensure the effectiveness of ultrasonic examinations within the nuclear industry by means of a rigorous, item-specific performance demonstration containing flaws of various sizes, locations, and orientations. The Performance Demonstration Initiative (PDI) approach has demonstrated a high degree of confidence in the capability of personnel, procedures, and equipment to detect and characterize

flaws that could be detrimental to the structural integrity of the RPV. The PDI approach has demonstrated, for detection and characterization of flaws in the RPV, that the UT examination techniques are equal to or more effective than the requirements of the ASME Code, Section V, Article 4, UT examination requirements.

Although using the ASME Code Section XI, Appendix VIII, is not required for the RPV shell-to-flange weld examination, the use of Appendix VIII, Supplements 4 and 6 criteria for detecting and sizing of flaws in the RPV shell-to-flange weld are equal to or exceed the requirements of ASME Code, Section V, Article 4. Therefore, the use of the proposed alternative will continue to provide an acceptable level of quality and safety.

6.0 Duration of Proposed Alternative

The alternative requirements of this request will be applied through the remaining inspections of the third ten-year ISI interval.

7.0 Precedents

Similar relief requests have been previously approved by the NRC for:

1. Donald C. Cook Nuclear Plant, Unit 1, by letter dated May 22, 2009 (ML083570013). The Cook plant relief request (ISIR-26) identifies the same code of record as PNP has identified in this relief request.

2. Indian Point, Unit 3, by letter dated April 20, 2009 (ML090920046). The Indian Point, Unit 3, relief request (3-47(I)) identifies the same code of record as PNP has identified in this relief request.

3. Diablo Canyon, Units 1 and 2, by letter dated October 26, 2005 (ML05660331). The Diablo Canyon, Unit 1 and Unit 2, relief request (NDE-SFW) identifies the same code of record as PNP has identified in this relief request.

4. Callaway Plant, Unit 1, by letter dated April 7, 2004 (ML041000516). The Callaway, Unit 1, relief request (RR ISI-30) identifies the same code of record as PNP has identified in this relief request.