



September 9, 2010

NRC 2010-0127
10 CFR 50.55a

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

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
Renewed License Nos. DPR-24 and DPR-27

10 CFR 50.55a Request, Relief Request RR-23
Residual Heat Removal Heat Exchanger - Nozzle Examination
Fourth Ten-Year Inservice Inspection Program Interval

Pursuant to 10 CFR 50.55a(a)(3)(ii), NextEra Energy Point Beach, LLC (NextEra) requests NRC approval of a proposed alternative to the examination requirements specified in the American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI, 1998 Edition through 2000 Addenda (ASME Code), for examinations conducted to the Class 2 Residual Heat Removal (RHR) heat exchanger nozzle to shell welds at Point Beach Nuclear Plant (PBNP) Units 1 and 2.

An alternative examination is requested on the basis that hardship and unusual difficulty exists, without a compensating increase in the quality or safety, in conducting volumetric examinations of the RHR heat exchanger nozzle to shell welds.

Enclosure 1 contains the 10 CFR 50.55a request (Relief Request RR-23). NextEra requests approval of the proposed alternative by March 1, 2011 to support ASME Section XI examination and pressure testing of the Unit 2 RHR heat exchangers scheduled for the March, 2011 refueling outage. NextEra proposes to implement the alternative examination during the remainder of the fourth ten-year ISI Program interval, which ends June 30, 2012 for PBNP Units 1 and 2.

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

Very truly yours,

NextEra Energy Point Beach, LLC

A handwritten signature in black ink, appearing to read "Larry Meyer". The signature is stylized with a large initial "L" and "M".

Larry Meyer
Site Vice President

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW
Mike Verhagen, State of Wisconsin

ENCLOSURE 1

NEXTERA ENERGY POINT BEACH, LLC POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

10 CFR 50.55a REQUEST, RELIEF REQUEST RR-23 RESIDUAL HEAT REMOVAL HEAT EXCHANGER - NOZZLE EXAMINATION FOURTH TEN-YEAR INSERVICE INSPECTION PROGRAM INTERVAL

1. Applicable American Society of Mechanical Engineers Code Components Affected

The eight specific Class 2 welds on the Residual Heat Removal (RHR) Heat Exchangers (1/2HX-011A/B) are identified below:

Category	Class	Item No.	Weld ID	Description	Component	NPS
C-B	2	C2.32	RHR-A-N1	Nozzle to Shell	1/2HX-011A	8"
C-B	2	C2.32	RHR-A-N2	Nozzle to Shell	1/2HX-011A	8"
C-B	2	C2.32	RHR-B-N1	Nozzle to Shell	1/2HX-011B	8"
C-B	2	C2.32	RHR-B-N2	Nozzle to Shell	1/2HX-011B	8"

Additional information pertaining to the above welds can be found in the following documents:

- Westinghouse Equipment Specification 676228, Rev. 0, "Auxiliary Heat Exchangers," 9/1/66
- Westinghouse purchase order 54Z70134B, "Multiplant-Heat Exchangers," 4/3/67
- Joseph Oat Drawings 4836-2 and 4837-1
- Attachment 1 to this enclosure

2. Applicable Code Edition and Addenda

The applicable Code edition for the fourth ten-year Inservice Inspection (ISI) Program interval at Point Beach Nuclear Plant (PBNP) Units 1 and 2, is the 1998 Edition with 2000 Addenda of the American Society of Mechanical Engineers (ASME) Code, Section XI.

3. Applicable Code Requirements

ASME Section XI, 1998 Edition with 2000 Addenda, examination Category C-B, Table IWC-2500-1, Item No. C2.32 requires volumetric examination as defined by Figure IWC-2500-4(c) for nozzle-to-shell welds with reinforcing plates in vessels greater than 1/2-inch nominal thickness when the inside of vessel is accessible. Due to the reinforcing plate, the nozzle-to-shell welds are only accessible for examination when the heat exchangers are disassembled.

4. Reason for Request

Pursuant to 10 CFR 50.55a(a)(3)(ii), NextEra Energy Point Beach, LLC (NextEra) proposes an alternative to the ASME Code requirements for the above listed Class 2 welds for the remainder of the fourth ten-year ISI Program interval at PBNP Units 1 and 2. NextEra has determined that the examinations impose significant hardship and unusual difficulty without a compensating increase in quality or safety.

The required examination coverage for the identified items would require redesign or replacement to allow full examination. The four RHR Heat Exchangers were constructed in 1967 (Unit 1) and 1968 (Unit 2). At the time of construction and installation, requirements to ensure that these welds be accessible for future examinations did not exist.

The ASME Code requires 100% volumetric examination of the subject RHR Heat Exchanger nozzle-to-shell welds when the inside of the vessel is accessible. However, complete volumetric examination coverage is restricted due to internal welded divider plates. The PBNP RHR heat exchangers are similar to those installed at the R.E. Ginna Nuclear Power Plant. Coverage achieved during examination at R.E. Ginna was determined to be 79%. To gain access for 100% examination, the RHR Heat Exchanger would require design modifications or replacement. Imposition of this requirement would create an undue burden on the licensee.

Additionally, NextEra estimates a dose of 4.5 man-rem would be incurred working inside the heat exchanger channel head(s). Due to the unknown configuration of the inside surface of the heat exchanger nozzle to shell welds, this examination would be required to be manually performed by personnel physically accessing the inside of the channel head(s). Significant surface contamination and possible areas of increased radiation (hot spots) will result in substantial exposure for decontamination and shielding activities as well as the generation of contaminated waste. This expenditure of dose for the required examinations is not consistent with ALARA practices and constitutes significant hardship without a compensating increase in quality or safety.

5. Proposed Alternative and Basis for Use

In accordance with the provisions of 10 CFR 50.55a(a)(3)(ii), approval is requested to use an alternative to the requirements of Table IWC 2500-1 for Category C-B, Item No. C2.32 pertaining to the RHR heat exchangers.

Specifically, a visual examination (VT-2) is proposed to be performed as an acceptable alternative to the ASME Code required volumetric examination. The VT-2 examination would be performed as part of the system leakage test (IWC-2500), which is required by examination categories C-H. Compliance with the ASME Code required volumetric examination would result in hardship due to excessive personnel radiation exposure and geometric examination limitations without a compensating increase in quality and safety.

The RHR heat exchangers (1/2HX-011A/B) have a safety-related function to cool water that is collected in the containment sump for the ECCS recirculation phase. Additionally, the heat exchangers have several non-safety-related functions related to plant cooldown.

As part of the approval process for Code Case N-706-1, a feasibility study has been performed within ASME and prepared by Westinghouse Owner's Group (WOG) project MUHP 5093, Working Group Inservice Inspection Optimization Action 97-01, ISI-03-06, BC03-338, "Technical Basis for Revision of Inspection Requirements for Regenerative and Residual Heat Exchangers," August, 2003.

Technical justification for eliminating the surface and volumetric inspections of the RHR and regenerative heat exchangers is provided in this report. The components at PBNP are typical of the heat exchangers described in the Westinghouse report regarding fabrication, geometric design, inspection requirements and geometric restrictions.

As stated in the Westinghouse report, these components were designed and installed before the imposition of the inservice inspection requirements by Section XI and are not designed for performance of ultrasonic and surface examination.

Two other factors, flaw tolerance and risk assessment, presented in the Westinghouse report for these components were considered by the ASME committee. Fracture evaluations were performed for the components using finite element models and fracture calculations. It was concluded that the heat exchangers have a large flaw tolerance and that significant leakage would be expected long before any failure occurred. Fatigue crack growth was determined to be extremely slow even in the most highly stressed region. These heat exchangers do not have a severe duty cycle. Thus, detailed inspections are not needed to ensure heat exchanger integrity.

A risk evaluation was performed using the accepted methodology applied for Risk Informed ISI piping inspection programs. The following conclusions were made:

- Safety equipment required to respond to the potential event is unaffected.
- Potential for loss of pressure boundary integrity is negligible.
- No safety analysis margins are changed.
- Leakage before full break is expected (i.e., there are no core damage consequences associated with leakage).

Thus, elimination of the subject inspections would not be expected to result in an increase in risk.

There have been no through-wall leaks on these components or components of similar design as reported in the industry and as discussed in the Westinghouse report.

The examinations required by IWC-2500, Table IWC-2500-1 Category C-B, Item C2.32 are conditional (required only if the interior of the heat exchanger is accessible). Therefore, the level of quality and safety afforded by the proposed alternative is equivalent to that provided by other types of heat exchangers where the interior of the heat exchangers are not considered to be accessible.

Surface examinations of the Reinforcing Plate Welds to Nozzle and Shell, as required by IWC-2500, Table IWC-2500 Category C-B, Item C2.31, will be completed.

Based on this information, NextEra believes that the periodic VT-2 and Surface examinations performed under the Section XI ISI Program are adequate in assuring plant safety, and that compliance with the volumetric examinations would result in hardship due to excessive

personnel radiation exposure and geometric examination difficulties without a compensating increase in quality and safety.

6. Duration of Proposed Alternative

NextEra requests permission to implement the proposed alternative VT-2 leakage test during the remainder of the fourth ten-year ISI Program interval, which ends June 30, 2012, for both PBNP Units 1 and 2.

7. Related Industry Relief Requests

PBNP (Wisconsin Electric Power Company) second interval relief request RR-1-10, granted under Safety Evaluation dated October 31, 1985.

Virginia Electric and Power Company (Dominion), Surry Power Station Unit 2 Relief Request CMP-007, submitted July 27, 2006 (ML062090375), approved November 29, 2006 (ML063340294).

Virginia Electric and Power Company (Dominion), North Anna Power Station Unit 1 Relief Request No. NDE-006, submitted October 7, 2008 (ML082880160), approved August 13, 2009 (ML092230647).

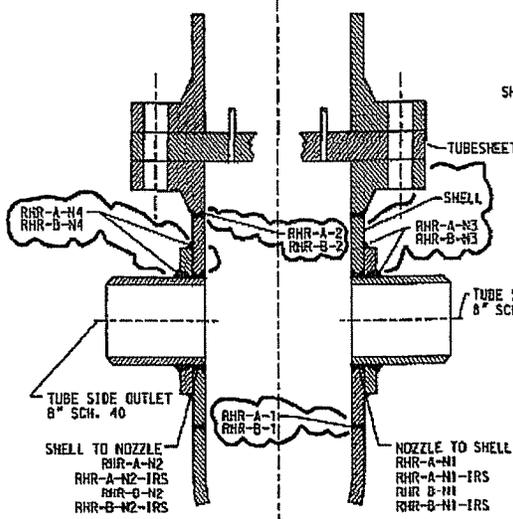
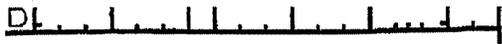
Duke Energy Carolinas LLC (Duke Energy), Oconee Station, Units 1, 2, and 3 Relief Request No. 10-ON-001, submitted June 9, 2010 (ML101660473), not yet approved.

ATTACHMENT 1

**NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2**

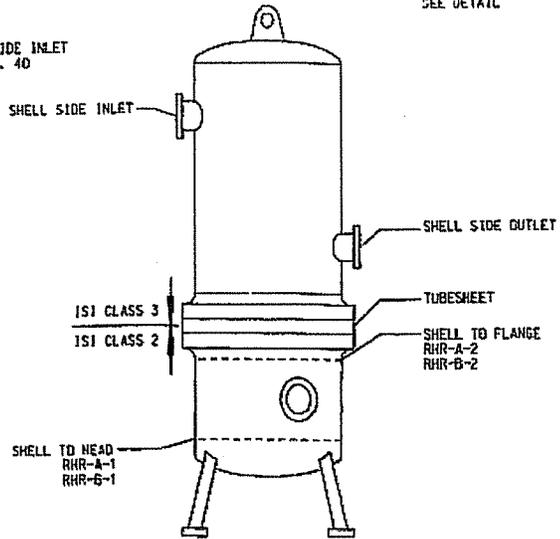
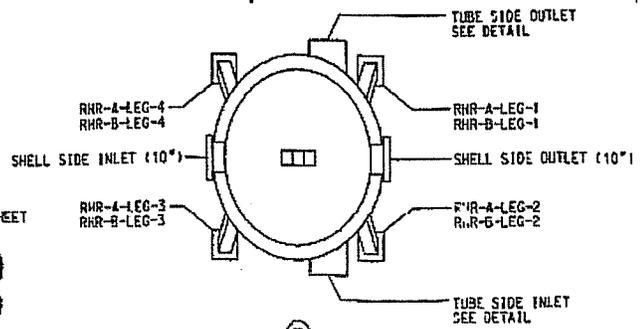
**10 CFR 50.55a REQUEST, RELIEF REQUEST RR-23
RESIDUAL HEAT REMOVAL HEAT EXCHANGER – NOZZLE EXAMINATION
FOURTH TEN-YEAR INSERVICE INSPECTION PROGRAM INTERVAL**

TYPICAL RHR HEAT EXCHANGER NOZZLE CONFIGURATION



DETAIL

TUBE SIDE NOZZLE WELDS



GENERAL LAYOUT, TYPICAL