



October 17, 2019

NRC 2019-0042
10 CFR 50.55a

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

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

NextEra Energy Point Beach, LLC, Relief Request 1-RR-13 and 2-RR-13, Response to Request for Additional Information

References:

1. NextEra Energy Point Beach, LLC, letter to NRC dated June 19, 2019, Relief Request 1-RR-13 and 2-RR-13, Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1), Extension of Inspection Interval for Point Beach Unit 1 and Unit 2 Reactor Pressure Vessel Welds from 10 to 20 Years (ML19170A285)
2. NRC email to NextEra Energy Point Beach, LLC, dated October 3, 2019, FINAL- Request for Additional Information - Relief Request 1-RR-13 and 2-RR-13, Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1), Extension of Inspection Interval for PBNP Units 1&2 RPV Welds from 10 to 20 Years - EPID L-2019-LLR-0060

NextEra Energy Point Beach, LLC (NextEra) submitted to NRC for approval Relief Request 1-RR-13 and 2-RR-13 (Reference 1). The NRC Staff has determined that additional information is required to complete its evaluation (References 2). The enclosure provides NextEra Energy response to the NRC Staff request for additional information.

This letter contains no new Regulatory Commitments or revisions to existing Regulatory Commitments.

If you have any questions regarding this submittal, please contact me at 920-755-7854.

Sincerely,



Eric Schultz
Licensing Manager
NextEra Energy Point Beach, LLC

Enclosure

cc: Regional Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC

ENCLOSURE 1

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

RESPONSE TO FINAL REQUEST FOR ADDITIONAL INFORMATION RELIEF REQUEST 1-RR-13 AND 2-RR-13, PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(z)(1), EXTENSION OF INSPECTION INTERVAL FOR PBNP UNITS 1&2 RPV WELDS FROM 10 TO 20 YEARS - EPID L-2019-LLR-0060

By letter dated June 19, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19170A285), NextEra Energy Point Beach, LLC (the licensee) requested an alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Table IWB-2500-1 for Category B-A and B-D examinations for Point Beach Nuclear Plant (Point Beach), Units 1 and 2 reactor pressure vessel (RPV) welds and nozzle welds.

Specifically, pursuant to Title 10 of the Code of Federal Regulations (10 CFR) 50.55a(z)(1), the licensee requested to use the proposed alternative to extend the fifth inservice inspection (ISI) interval at Point Beach, Units 1 and 2 for Category B-A and B-D examinations so that the fifth ASME Code required examination can be performed in 2029 for both units on the basis that the alternative provides an acceptable level of quality and safety. The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the submittal and needs the following additional information to complete the review.

RAI-1

Table 3 in Title 10 of Code of Federal Regulations Part 50.61a, "Alternative fracture toughness requirements for protection against pressurized thermal shock events" lists maximum number of flaws depthwise for plates and forgings of a generic RPV. However, Table 2 of Alternative Request 1-RR-13 shows different maximum number of plate flaws for the Point Beach, Unit 1 RPV beltline, considering the plant-specific RPV geometry. Please explain how 3628 in² of inside surface area was calculated to support the differences between the values in Table 3 of 50.61a and Table 2 of 1-RR-13.

RAI-1 RESPONSE

Table 3 in 10 CFR 50.61a provides the limiting maximum number of flaws in the inspection volume of the plate area. The number of flaws is presented within various ranges of through-wall extent (TWE) from TWE_{MIN} to TWE_{MAX} in terms of flaws per 1000 square inches of total area.

In order to consider the actual plant-specific plate or forging area, 10 CFR 50.61a(e)(1)(ii) states:

The licensee shall determine the allowable number of plate or forging flaws in their reactor vessel beltline by multiplying the values in Table 3 of this section by the total surface area of the reactor vessel beltline plates or forgings that were volumetrically inspected and dividing by 1000 square inches.

For Point Beach Unit 1, the plant-specific total inside surface plate inspection area in the reactor vessel beltline is 3628 square inches. Therefore, the number of flaw values from Table 3 of 10 CFR 50.61a are multiplied by 3628 and divided by 1000 to determine the plant-specific allowable number of flaws in the reactor vessel beltline plate material as presented in Table 2 of Alternative Request 1-RR-13 (ML19170A285). Table A below presents this in more detail and is provided for convenience:

Table A: Plant-Specific Allowable Number of Flaws within the Reactor Vessel Beltline Plate Material

Through-Wall Extent, TWE (in)		Table 3 of 10 CFR 50.61a Maximum Number of Plate/Forging Area Flaws per 1000 Square Inches	Scaling Factor	Scaled Maximum number of flaws per 3628 square-inches of inside surface area in the inspection volume that are greater than or equal to TWE_{MIN} and less than TWE_{MAX} . This flaw density does not include underclad cracks in forgings.
TWE_{MIN}	TWE_{MAX}			
0	0.075	No Limit	3.628	No Limit
0.075	0.375	8.05	3.628	30
0.125	0.375	3.15	3.628	12
0.175	0.375	0.85	3.628	4
0.225	0.375	0.29	3.628	2
0.275	0.375	0.08	3.628	1
0.325	0.375	0.01	3.628	1
0.375	Infinite	0.00	3.628	0

The plant-specific total inside surface plate area for Point Beach Unit 1 is calculated based on the information provided in Table B below.

Table B: Point Beach Unit 1 Inspection Area Information

Inside Diameter of Weld Inspection Volume	132.31 inches
Reactor Vessel Base Metal Thickness	6.5 inches
Axial Weld Length	144 inches
Axial and Circumferential Weld Width	0.750 inches
Number of Axial Welds	1
Number of Circumferential Welds	1
Total Plate Area (in Beltline)	3628 square inches

The total inside surface plate area considers the area that directly surrounds the effective height of the active core. The effective height of the active core includes one circumferential weld and an axial weld. The weld areas are not considered in the total plate area calculations. Therefore, the plate area surrounding the circumferential weld is calculated as the inside circumference of the reactor vessel minus the width of the axial weld, multiplied by the thickness of the reactor vessel as follows.

$$(132.31 \text{ inches} * \pi - 0.75 \text{ inches}) * 6.5 \text{ inches} = 2697 \text{ in}^2$$

The plate area surrounding the axial weld is calculated as the length of the axial weld minus the width of the circumferential weld, multiplied by the thickness of the reactor vessel as follows.

$$(144 \text{ inches} - 0.75 \text{ inches}) * 6.5 \text{ inches} = 931 \text{ in}^2$$

The total inside surface plate area is the sum of the plate material surrounding the axial and circumferential weld = 3628 in².