



April 5, 2020

10 CFR 50.55a  
SBK-L-20049

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

Seabrook Station  
Docket No. 50-443

Subject: Relief Request 3IIR-7, Proposed Alternative to Deter Examinations Beyond the  
1 Year Code Allowable

In accordance with the provisions of 10 CFR 50.55a(z)(2), *Hardship without a compensating increase in quality and safety*, NextEra Energy Seabrook, LLC (NextEra) requests NRC approval of the attached relief request for Seabrook Station (Seabrook). Seabrook is requesting an extension of the schedule to perform the following examinations: Examination Category B-N-1, Reactor Vessel Interior Surfaces; Examination Category B-N-2, Interior Attachments Beyond Beltline Region Examinations; Examination Category B-N-3, Core Support Structure Examinations; Examination Category B-B, Pressurizer circumferential weld and 1 ft of intersecting long seam; and Code Case N-770-2, the 3<sup>rd</sup> consecutive periodic examination of the mitigated cracked hot leg safe-end to nozzle. These examinations will be performed in the next refueling outage (OR21) in the Fall of 2021.

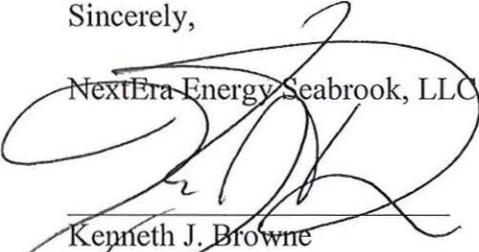
Seabrook Station is in the third 10-year inservice inspection interval, which ends August 18, 2020.

There are no commitments being made in this submittal.

If you have any questions regarding this submittal, please contact me at (603) 773-7932.

Sincerely,

NextEra Energy Seabrook, LLC



Kenneth J. Browne  
Safety Assurance and Learning Site Director

United States Nuclear Regulatory Commission  
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Enclosure 1: Relief Request 3IIR-7, Proposed Alternative to Deter Examinations Beyond the 1  
Year Code Allowable

cc:

NRC Region I Administrator  
NRC Project Manager  
NRC Senior Resident Inspector

Seabrook Station

Relief Request 3IIR-7, Proposed Alternative to Deter Examinations Beyond the 1 Year Code Allowable

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Enclosure 1 to SBK-L-20049

Relief Request Number 3IIR-7

Relief Request 3IIR-7, Proposed Alternative to Deter Examinations Beyond the 1 Year Code Allowable

**Seabrook Generating Station**  
**Third Inservice Inspection Interval**  
**Relief Request Number 3IIR-7, Revision 0**

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**Proposed Alternative to Defer Examinations Beyond the 1 Year Code Allowable**

**In Accordance with 10 CFR 50.55a(z)(2)**

**-- Hardship or Unusual Difficulty Without Compensating Increase in Level of Quality or Safety--**

**1. ASME Code Component(s) Affected**

ASME Class 1 interior surface (B-N-1), interior attachment welds (B-N-2) and core support structures (B-N-3) in the reactor pressure vessel (RPV); pressurizer head to shell/long seam welds; and Code Case N-770-2 mitigated category E hot leg safe-end to nozzle butt weld.

<b>Exam Category</b>	<b>Item Number</b>	<b>Component</b>	<b>Description</b>
B-N-1	B13.10	Reactor Vessel	Reactor Vessel Interior Surfaces
B-N-2	B13.60	Reactor Vessel	Interior Attachment Welds
B-N-3	B13.70	Reactor Vessel	Reactor Vessel Core Support Structure
B-B	B2.11 B2.12	Pressurizer Head to Shell Weld	Pressurizer Longitudinal Head-to-Shell Weld Pressurizer Circumferential Head-to-Shell Weld
CC N-770-2	Category E	RC RPV SE-301-121-H	Mitigated Cracked Butt Weld (Hot Leg)

**2. Applicable Code Edition and Addenda**

The Code of record for Seabrook Unit 1 is the 2004 Edition with No Addenda of the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components" as modified by 10CFR50.55a.

Subparagraph IWA-2430(d)(1), "Each inspection interval may be reduced or extended by as much as one year. Adjustments shall not cause successive intervals to be altered by more than one year from the original pattern of intervals. If an inspection interval is extended, neither the start and end dates nor the inservice inspection program for the successive interval need be revised."

10CFR50.55a(g)(6)(ii)(F), "Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds."

**3. Applicable Code Requirement**

IWB-2412, Inspection Program B, requires visual examination of the reactor vessel interior surfaces, attachments welds and core support structure identified in Table IWB-2500-1, Examination Categories B-N-1, B-N-2, and B-N-3, to be performed once each inspection interval.

IWB-2412, Inspection Program B, requires a volumetric examination of the pressurizer shell to head circumferential and intersecting long seam pressure boundary welds identified in Table IWB-2500-1, Examination Categories B-B, to be performed once each inspection interval.

Code Case N-770-2, requires mitigated welds, Inspection Items C through K, shall be added to the Inservice Inspection Program (ISI) as new welds in accordance with IWB-2412(b) in editions and addenda up to and including the 2006 Addenda. When items or welds are added during the first period of an interval, at least 25% of the examinations required by the applicable Examination Category and Item Number for the added items or welds shall be performed during each of the second and third periods of that interval.

The Seabrook Unit 1 third 10-year inservice inspection interval ends on August 18, 2020. The applicable Code for the fourth 10-year ISI interval will be selected in accordance with 10 CFR 50.55a.

#### **4. Reason for Request**

Pursuant to 10CFR 50.55a(z)(2), Seabrook requests relief from the Code requirements of IWB-2412, Inspection Program B, and Table IWB-2500-1 Examination Categories B-N-1, B-N-2 and B-N-3, which require a VT-3 examination of RV interior surfaces, interior attachment welds, and the core support structure once each inspection interval; Examination Category B-B, which requires a volumetric examination to include essentially 100% of the circumferential weld length and 1 ft of the intersecting longitudinal weld once each inspection interval; and Code Case N-770-2, which requires welds classified within Inspection Items C through K as a “new weld” meet the scheduling requirements of IWB-2412(b)(1) for consecutive periodic examinations for the interval.

Given the ongoing pandemic conditions in the United States, performing the examinations associated with the Reactor Pressure Vessel (RPV), Pressurizer and Hot Leg “H” Safe-End to Nozzle would be a hardship for Seabrook Station. At this time, helping to limit the spread of Covid-19 is a priority for the nation and for NextEra. As a result, NextEra is striving to complete the outage safely and reliably. Adding additional workers onsite makes that more difficult and could unnecessarily increase the risk of viral transmission. In addition, there has been increasing uncertainty that Seabrook would have appropriate augmented support workers available to assist with the activities associated with these inspections. NextEra has determined that performing the examinations associated with the Reactor Pressure Vessel (RPV), Pressurizer and Hot Leg “H” Safe-End to Nozzle does not provide an increase in the level of quality and safety at Seabrook necessary to compensate for the hardship imposed by performing these examinations during the Covid-19 pandemic. Given the low risk of discovery, a one-time extension is requested for approximately 6 weeks beyond the adjustment allowed by IWA-2430(b)(1), as explained in more detail below, would not present a significant impact on the level of quality and safety. This is supported by previous NRC decisions to grant similar relief requests.

#### **5. Proposed Alternative and Basis for Use**

##### Proposed Alternative

Seabrook is requesting an extension to allow performance of the Examination Category B-N-1, Reactor Vessel Interior Surfaces, B-N-2, Interior Attachments Beyond Beltline Region Examinations, Category B-N-3, Core Support Structure Examinations, Examination Category B-B, Pressurizer circumferential weld and 1 ft of intersecting long seam and the 3rd consecutive periodic examination of the mitigated cracked hot leg safe-end to nozzle during the Refueling Outage OR21, which is approximately 6 weeks beyond the ASME Section XI IWA-2430(d)(1) Code allowed end of interval extension.

## Basis for Use

Seabrook is currently in the 3rd Inservice Inspection Interval, which began August 19, 2010 and will end on August 18, 2020. The reactor vessel examinations (Exam Categories B-N-1, B-N-2 and B-N-3) have been examined for the past two consecutive intervals with no relevant indications identified. In addition to the 10-year IVVI examination, the ASME Code also requires a B-N-1 periodic “accessible areas of the vessel examination” which includes a VT-3 examination from the top flange of the vessel to all surfaces to the lower core plate. This examination looks for damage on the vessel walls, key ways, nozzle mating surfaces, general visual of the baffle plates and alignment pins on the lower core plate. By performing these periodic examinations as well as the previous IVVI examinations, a redundancy exists of reasonable assurance that an issue will be identified in a timely manner. Relief Request 3IR-17 was approved on December 13, 2019 (ML19340A128) to extend all Examination Category B-A and B-D reactor vessel welds and inner radii until April 2030. Seabrook has not entered into the period of extended operation, so the requirements of MRP-227 do not apply to the examinations in which extension is requested.

The pressurizer cubicle area is subject to a system walk down during the plant's transition into an outage and ascension back to full power looking for leaks or issues that need to be repaired. The ASME Code also required examination of specific welds on the pressurizer on an interval basis. The pressurizer upper shell to-head weld and intersecting long seam is one of those welds. This weld has been examined for the past two consecutive intervals with no relevant indications identified but performing this examination is challenging due to the close proximity of the cubicle walls to the vessel as well as maneuvering around the valves, nozzles and supports on top of the pressurizer. For this reason, several technicians working in close proximity of each other is required to perform this examination. The Centers for Disease Control (CDC) is recommending social distancing, which is defined as remaining out of congregate settings, avoiding mass gatherings, and maintaining distance (approximately 6 feet or 2 meters) from others when possible. The examination of the pressurizer head to shell and intersecting long seam cannot be performed while implementing the recommendation for social distancing.

The reactor vessel nozzle to safe-end weld was mitigated by mechanical stress improvement process (MSIP) during the October 2009, OR13, refueling outage after flaws were identified in RC RPV SE-301-121-H “D” Hot Leg nozzle during the 10-year vessel examination. The post mitigation (MSIP) examination was performed during April 2011, OR14. After mitigation is performed on a weld, it is then considered a new weld and the rules of ASME Section XI, IWB-2412(b)(1), “When items or welds are added during the first period of an interval, at least 25% of the examinations required by the applicable Examination Category and Item Number for the added items or welds shall be performed during each of the second and third periods of that interval” must be applied. Seabrook examined the mitigated hot leg, RC RPV SE-301-121-H, again in April 2014, OR16, to credit the second consecutive periodic examination. When compared to previous examination performed during April 2014, there was no change identified. The third and last examination requirement per IWB-2412(b)(1) is scheduled for the current refueling outage, which began April 1, 2020, OR20. Seabrook has a requirement to perform a reexamination on the remaining hot and cold leg nozzle to safe-end welds per Code Case N-770-2 due to performing mechanical stress improvement process (MSIP) in October 2015 during the OR17 refueling outage. Seabrook is requesting to combine the requirements for the third consecutive examination of the mitigated hot leg, RC RPV SE-301-121-H, at the same time as the proposed alternative for the reactor vessel B-N-1, B-N-2 and B-N-3 examination during Fall 2021, OR21 which will allow for the Code Case N-770-2 examination requirement to be performed without the hardship of removing the core barrel twice within 5 years.

The ASME Code and plant procedures have inherently built redundancy within the individual Examination Category where overlap of varying NDE requirements are used at different times on the same components. This includes inservice examination requirements based on ASME Code, scheduling requirements for periodic examinations of new welds through repair/replacement and components requiring an engineering evaluation for continued service. In addition, there are ASME Code requirements of periodic system pressure test, plant requirements for system walk downs that are performed for evidence of boric acid and other issues during the transition into a shutdown and the ASME Code Class 1 system pressure test required to be performed during the plants ascension to full power. Therefore, in accordance with 10 CFR 50.55a(z)(2), the requested extension of approximately 6 weeks past the ASME Code allowed time of 1 year to conduct the reactor vessel B-N-1, B-N-2, B-N-3, pressurizer head to shell weld and intersecting long seam weld and the 3<sup>rd</sup> consecutive examination of the “D” hot leg weld. Performance of these examinations would result in a hardship without a compensating increase in the level of quality or safety. Seabrook also notes that it would not be possible to conduct the inspections while implementing the recommendation for social distancing due to the COVID-19 outbreak as defined by the Centers for Disease Control (CDC).

## **6. Duration for the Proposed Alternative**

This alternative is requested to extend the Seabrook 3<sup>rd</sup> Interval Inservice Inspection by approximately 6 weeks past the ASME Section XI IWA-2430(d)(1) Code allowed extension of 1 year for the components identified in Section 1.0 of this request. This request is applicable to the third inspection interval only. If this relief request is approved, the third inspection interval will end at the conclusion of the October 2021 refueling outage, OR21.

This extension will not affect the start of the fourth inspection interval so it will not impact the overall schedule of Seabrook’s examinations. Seabrook’s 4<sup>th</sup> Interval will begin on August 19, 2020 and end August 18, 2030.

## **7. Precedents**

1. Indian Point Nuclear Generating Unit 3, Alternative Requests IP3-ISI\_RR-13, dated October 18, 2017 (ADAMS Accession No. ML 17297A455). NRC approval dated July 18, 2018 (ADAMS Accession No. ML 181938030).
2. Exelon Generation Company LLC, Limerick Generating Station Unit 1, Deferral of Section XI Requirements due to COVID-19 issues, see Accession No. ML20088B022 and Verbal Authorization per Accession No. ML20089A007