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| **From:** | Poole, Justin |
| **To:** | Browne, Kenneth; Thomas, Christine |
| **Cc:** | Danna, James |
| **Subject:** | Verbal Authorization for Seabrook Relief Request 3IIR-7 |
| **Date:** | Wednesday, April 08, 2020 4:44:00 PM |
| **Attachments:** | Seabrook Covid Defferal 50.55a(z)(2) Verbal Authorization Script 04-08-2020 FINAL.pdf |

Mr. Browne,

In accordance with NRR Office Instruction LIC-102, “Relief Request Reviews,” the NRR staff has provided verbal authorization for Seabrook Station, Unit No. 1 to the requests for relief found in 3IIR-7 as described in your letter to the NRC dated April 5, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20097A021).

The script read this afternoon that provides verbal authorization is attached. The NRC staff intends to follow-up this verbal authorization with a written safety evaluation.

Please let me know if you have any questions. A copy of this email and attached verbal authorization will become publicly available in ADAMS.

*Justin C. Poole*
*Project Manager*
*NRR/DORL/LPL I*
*U.S. Nuclear Regulatory Commission*
*(301)415-2048*

VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
10 CFR 50.55a REQUEST FOR ALTERNATIVE TO DEFER
ASME CODE INSERVICE INSPECTION OF
PRESSURIZER WELDS, REACTOR VESSEL INTERIOR,
REACTOR VESSEL INTERIOR ATTACHMENT WELDS,
CORE SUPPORT STUCTURE, AND
ASME CODE CASE N-770-2 HOT LEG REACTOR VESSEL NOZZLE-TO-SAFE END WELD
HARDHIP DUE TO PANDEMIC (COVID-19)
THIRD 10-YEAR INSERVICE INSPECTION INTERVAL RELIEF REQUEST 3IIR-7
SEABROOK STATION, UNIT NO. 1
NEXTERA ENERGY SEABROOK, LLC
DOCKET NO. 50-443
APRIL 8, 2020

**Technical Evaluation read by Hipolito Gonzalez, Chief of the Vessels and Internals Branch, Office of Nuclear Reactor Regulation**

By letter dated April 5, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20097A021), NextEra Energy Seabrook (NextEra, the licensee), requested an alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, as mandated by Title 10 of the *Code of Federal Regulations* (CFR) 50.55a for the third 10-year inservice inspection (ISI) interval at Seabrook Station, Unit No. 1 (Seabrook).

Pursuant to 10 CFR 50.55a(z)(2), the licensee requested U.S. Nuclear Regulatory Commission (NRC) authorization to postpone the third 10-year ISI interval examinations of specified ASME Code, Section XI, Class 1 pressurizer vessel welds and reactor vessel (RV) internal items at Seabrook from the April 2020 refueling outage (OR20) to the fall 2021 refueling outage (OR21). The licensee requested this alternative on the basis that completing these exams during the April 2020 refueling outage as specified in the ASME Code inspection schedule requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The licensee's reported hardship is due to the COVID-19 pandemic. The licensee determined that it needs to limit offsite inspection personnel entering the plant, and it must implement social distancing between onsite workers to minimize the risk of this viral transmission to Seabrook personnel who safely operate the plant. In addition, the COVID-19 pandemic has resulted in increasing uncertainty that the licensee would have appropriate augmented support workers available to assist with the ISI activities for completing the subject examinations during the April 2020 refueling outage.

The licensee's proposed deferral is applicable to the volumetric examination of the pressurizer vessel shell-to-head circumferential and intersecting long seam longitudinal welds required by Examination Category B-B, Items Nos. B2.11 and B2.12; the VT-3 visual exams of accessible areas of the reactor vessel interior required by Examination Category B-N-1, Item No. B13.10; the VT-3 visual exams of accessible welds for interior attachments beyond the reactor vessel beltline region required by Examination Category B-N-2, Item No. B13.60; and the VT-3 visual exams of accessible surfaces of the core support structure upon removal from the reactor vessel, as required by Examination Category B-N-3, Item No. B13.70.

Seabrook is currently in the third 10-year ISI interval, which began August 19, 2010, and will end on August 18, 2020. Paragraph IWB-2412, Inspection Program B, of the 2004 Edition of

ASME Code, Section XI requires that all examinations specified for the above Examination Categories be completed during each 10-year ISI interval. Paragraph IWA-2430 of the ASME Code Section XI allows for the inspection interval to be extended or reduced by as much as one year to accommodate licensee scheduling needs. Therefore, the subject third ISI interval examinations are required to be completed no later than August 18, 2021, in order meet the Code inspection schedule requirements. All of the subject examinations must be performed during refueling outages. The NRC staff confirmed that completing the subject examinations during the April 2020 refueling outage to meet the subject Code inspection schedule requirements for the third 10-year ISI interval would present a significant hardship for the licensee due to the fact that adequate performance of these exams requires the licensee to bring additional ISI specialists onto the plant site. The NRC staff noted performance of these exams would require that the ISI personnel work in close proximity to one another, which is at contrary to CDC guidelines for protecting workers during the COVID-19 pandemic. The NRC staff noted that extending the third 10-year ISI interval by six weeks beyond the Code-allowed 1-year interval extension, as proposed in the licensee's submittal, would allow the deferral of the subject exams until the fall 2021 refueling outage.

The licensee reported in its submittal that the subject pressurizer welds, reactor vessel interior items, and core support structure have been examined for the past two consecutive intervals with no relevant indications identified. Based on its independent review of industry operating experience for PWR component aging degradation, the NRC staff independently confirmed that these types of components have not exhibited significant aging degradation at U.S. PWR plants. Specifically, the staff identified that RPV interior regions, interior welded attachments, and core support structure components have not yet shown significant aging effects at U.S. PWR plants, and many of these plants have been operating for more than 40 years. The staff identified that the pressurizer shell-to-head circumferential and intersecting long seam pressure boundary welds have also not shown active degradation in the PWR fleet – further, these types of Class 1 low alloy steel pressure-retaining vessel weld materials are not prone to any known degradation mechanism that would result in the formation of new flaws during their design life considering the accumulated number of plant transient cycles. The NRC staff noted that the licensee also continues to perform the ASME Code-required system leakage testing and associated visual examinations (VT-2 visual exam).

The NRC staff determined that increasing the third 10-year inspection interval by six weeks beyond the Code-allowed 1-year interval extension would have a negligible impact on ensuring adequate protection of component integrity and safety function performance. Therefore, the NRC staff finds that accomplishing the subject examinations during the April 2020 refueling outage to ensure compliance with the specified ASME Code, Section XI inspection schedule requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

CONTACT: Chris Sydnor, NRR/DNLR/NVIB

**Technical Evaluation read by Matthew Mitchell, Chief of the Piping and Head Penetration Branch, Office of Nuclear Reactor Regulation**

By letter dated April 5, 2020 (ADAMS Accession ML20097A021), NextEra Energy Seabrook, LLC, (the licensee) requested an alternative to the requirements of ASME Code, Section XI and Code Case N-770-2, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS

W86182 Weld Filler Material with or without Application of Listed Mitigation Activities, Section XI," as mandated by 10 CFR 50.55a(g)(6)(ii)(F) with conditions. Alternative 3IIR-7 pertains to the volumetric examination of RV hot leg nozzle-to-safe end dissimilar metal (DM) butt weld SE-301-121-H "D" mitigated by the mechanical stress improvement process (MSIP) at Seabrook. The licensee categorized the RV hot leg nozzle-to-safe end DM butt weld SE-301-121-H "D" as Inspection Item E in accordance with Table 1 of ASME Code Case N-770-2.

The licensee has determined that, in order to be in compliance with the regulatory requirements and the provisions of the ASME Code IWB-2412(b) and Code Case N-770-2, they are required to volumetrically examine weld SE-301-121-H "D" during each of the three subsequent inspection periods after their application of MSIP. In order to complete their third subsequent reexamination during the unit's current inspection period and interval, the licensee determined they require NRC approval to extend the current inspection period and interval by six weeks beyond what they would be permitted to do under their current licensing basis such that the unit's fall 2021 refueling outage (OR21) would fall within the current inspection period and interval.

Pursuant to 10 CFR 50.55a(z)(2), the licensee requested NRC approval to extend their current inspection period and interval by six weeks and to postpone the volumetric examination of the subject RV hot leg nozzle-to-safe end DM butt weld from April 1, 2020 refueling outage (OR20) to the fall 2021 refueling outage (OR21) on the basis that complying with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The licensee's basis for the hardship is due to the COVID-19 pandemic in the U.S. that requires limiting offsite inspection personnel entering the plant as well as implementing social distancing between onsite workers to minimize the risk of viral transmission to Seabrook personnel who safely operate the plant. In addition, there has been increasing uncertainty that the licensee would have appropriate augmented support workers available to assist with the activities associated with the inspection of the subject RV hot leg nozzle-to-safe end DM butt weld.

The licensee's safety basis for delaying the volumetric examination of the subject RV hot leg nozzle-to-safe end DM butt weld from April 1, 2020, to the fall 2021 is as follows: (a) the subject weld was mitigated by MSIP altering the residual stresses of the inner through-wall region of the weld to compression; (b) operating experience has shown that MSIP inhibits the growth of existing flaws in the weld; (c) the volumetric examination of the subject weld performed during subsequent refueling outages in April 2011 and April 2014 after MSIP application found no changes to the characteristics of exiting flaws; and (d) the licensee continues to perform the ASME Code-required system leakage testing, visual examination (VT-2), and regular walk-downs every refueling outage during the plants ascension to full power to monitor the leak tightness of the subject RV hot leg nozzle-to-safe end DM butt weld. The NRC staff found that the licensee's post MSIP examinations results showed no evidence of growth of the existing flaws and no presence of any other unacceptable flaws in the subject weld which provides reasonable assurance of adequate safety to defer the volumetric examination of the subject RV hot leg nozzle-to-safe end DM butt weld for one refueling outage.

Therefore, based on the above, the NRC staff finds that (1) there is reasonable assurance that the licensee's proposed alternative has a minimal, if any, impact on safety; and (2) the licensee's hardship justification is acceptable.

CONTACT: Ali Rezai, NRR/DNLR/NPHP

**Authorization read by James Danna, Chief of the Plant Licensing Branch I, Office of Nuclear Reactor Regulation**

As Chief of the Plant Licensing Branch I, Office of Nuclear Reactor Regulation, I agree with the conclusions of the Vessels and Internals Branch and the Piping and Head Penetrations Branch.

The NRC staff concludes that the proposed inspection deferrals for Seabrook will provide reasonable assurance of adequate safety for the subject pressurizer welds, reactor vessel interior items, core support structure, and reactor vessel hot leg nozzle-to-safe end DM butt weld SE-301-121-H "D" until the next scheduled refueling outage in fall 2021 when the ASME Code-required inservice examination of the subject welds and components will be performed. The NRC staff finds that complying with the inspection schedule requirements of the ASME Code, Section XI for the subject pressurizer welds, reactor vessel interior items, and core support structure, as mandated by 10 CFR 50.55a; and complying with the requirements of the ASME Code, Section XI and Code Case N-770-2 as mandated by 10 CFR 50.55a(g)(6)(ii)(F) with conditions, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2) for deferral of these examinations.

Therefore, effective April 8, 2020, the NRC authorizes the use of the proposed alternatives at Seabrook until completion of the next scheduled refueling outage in fall 2021.

All other requirements in ASME Code, Section XI for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

This verbal authorization does not preclude the NRC staff from asking additional clarification questions regarding the proposed relief while subsequently preparing the written safety evaluation.