



January 24, 2019
Docket No. 50-443
SBK-L-19001

United States Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, D.C. 20555-0001

Seabrook Station
Inservice Inspection Examination Report

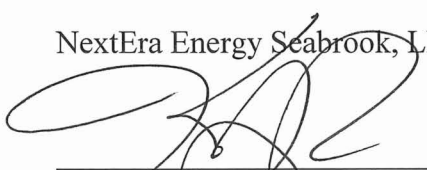
Enclosed is the NextEra Energy Seabrook, LLC Inservice Inspection Examination Report for inspections conducted prior to and during the nineteenth refueling outage that concluded on October 28, 2018. The repair listed on Table 2 of the OAR-1 Summary Report is from the previous outage (concluding on May 1, 2017) and was inadvertently missed on the previous submittal (ref. SBK-L-17117).

The enclosed report is submitted pursuant to the requirements of paragraph IWA-6240 of the 2004 Edition of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code and approved ASME Code Case N-532-5. Additionally, a copy of this letter and the enclosed report are being submitted to the State of New Hampshire.

Should you have any questions regarding this information, please contact Mr. James Crowley, Engineering Support Manager, at (603) 773-7470.

Sincerely,

NextEra Energy Seabrook, LLC



Kenneth J. Browne
Licensing Manager

cc: NRC Region I Administrator
NRC Project Manager, Project Directorate I-2
NRC Senior Resident Inspector

Wayne Brigham, Boiler Inspector
New Hampshire Department of Labor
Inspection Division
PO Box 2076
Concord, NH 03302-2076

Enclosure to SBK-L-19001

Report Number: ISI-SBK-OR19-2018

Plant: NextEra Energy Seabrook, LLC
P.O. Box 300
Seabrook, NH 03874

Commercial Service Date: August 19, 1990

Refueling Outage No.: OR19

Current Inspection Interval: ISI- Third Interval and IWE- Second Interval

Current Inspection Period: ISI- Third Period and IWE- Third Period

Edition and Addenda of Section XI applicable to the inspection plans:
ISI Third Interval-2004 Edition No Addenda and IWE Second Interval-2004 Edition No Addenda


Date and Revision of inspection plans: ISI Third Interval and IWE Second Interval - December 28, 2016
Rev. 17

Edition and Addenda of Section XI applicable to repairs and replacements, if different than the inspection plan: Same

Code Cases Used: Approved Code Cases listed in Inspection Plan

CERTIFICATE OF CONFORMANCE

I certify that (a) the statements made in this report are correct; (b) the examinations and tests meet the Inspection plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of OR19 conform to the requirements of Section XI.

Signed  Date 1/18/19
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of New Hampshire and employed by The Hartford Steam Boiler Inspection and Insurance Company of Hartford, CT have inspected the items described in this Owner's Activity Report, and state that, to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

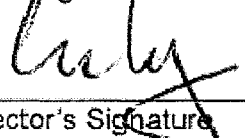
 Commissions 180715 AE, IS, B, N, I, R NH 762
Inspector's Signature National Board, State, Province and Endorsements
Date 1-18-2019

TABLE 1
ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED
EVALUATION FOR CONTINUED SERVICE

Examination Category and Item Number	Item Description	Evaluation Description
Code Case N-722-1 Item No. B15.80	RPV Bottom Mounted Nozzle Penetrations	<p>AR02286419 Condition Evaluation.</p> <p>In OR19 the initial BMI work scope was to conduct an as-found (pre-cleaning) exam of all 58 penetrations, CO₂ Bead Blasting/Cleaning of the 19 penetrations from OR17 reported with residues and an as-left examination of the 19 penetrations after cleaning. During OR19 BMI examination the as-found examination reported 31 penetrations with residues present. That is 12 more penetrations with residues than what was reported in the OR17 as-left report due to improved camera angle on the crawler from lessons learned from the previous examination and an additional 2 penetrations were identified as having a residue during the site review of the data. The conditions observed were residues and deposits in and around the annular gap/crevice area and on the head surface. Through chemical analysis, direct comparison of the OR19 results with images from prior Code Case N-722-1 examinations and the absence of any of the characteristics of RCS boundary leakage: splatter, streaming, spaghetti, popcorn, stalagmites, etc., the residue observed has been evaluated as non-relevant and the examination performed in OR19 met the intent of Code Case N-722-1 with no evidence of pressure boundary leakage detected.</p> <p>AR –2287309 was generated to track future efforts towards identifying a more suitable means of cleaning than the CO₂ Bead Blasting/Cleaning.</p> <p>The evaluation provided above is supported by the following factors:</p> <p>1- There is an absence of the normal characteristic conditions when pressure boundary leakage has occurred.</p> <p>2- The chemistry sample taken at penetration 56 supports that there is no active leakage from the RCS. This sample is consistent with the other samples taken at the BMI's in OR17, penetration 48 and 53.</p>

		<p>3-The camera angle and lighting will influence the identification of boric acid residue, but will not overlook true pressure boundary leakage which takes the form of splatter, streaming, spaghetti, popcorn, stalagmites, etc. The inspection vendor has improved their camera angle and lighting. The residue identified on the nozzle penetrations this outage was from previous cavity seal leakage and was not due to active leakage. This was further corroborated by Chemistry samples taken from the past three exams. When comparing the OR19 results to previous data, although additional areas were identified with residue, these areas are not indicative of boric acid leakage as defined by Code Case N-722-1.</p> <p>4-There are two likely sources for the residues observed: leakage past the cavity seal ring early in plant life (prior to the CC N-722-1 examination mandate) that has run down the vessel and lower head to the BMI penetrations and high temperature paint in the annulus.</p> <p>5-The BMI examinations have now been performed 3 times at Seabrook which aids in examination proficiency.</p> <p>6-The OR19 examination was performed with a new digital capture device which provides greater image quality.</p> <p><u>Conclusion</u> The OR19 results showing residues at higher numbers than previously reported are the result of one or more of the above contributing factors and not due to pressure boundary leakage at the BMI penetrations. Accordingly, the OR19 BMI performed in accordance with CC N-722-1 are SAT, no evidence of pressure boundary leakage exists.</p>
B-P B15.10	CRDM Housing Vertical Surface	<p><u>AR02288209 White powder or dust on CRDM Housing Condition Evaluation.</u> This condition has been evaluated as non-relevant and not attributed to pressure boundary leakage. Additionally, the dust or powder does not exhibit any of the normal characteristics of pressure boundary leakage such as splatter, streaming, spaghetti, popcorn, stalagmites, wastage, etc. Chemistry samples were obtained in the four 32" duct openings, north, south, east and west. The results did not detect the presence of boron or lithium which would be present if pressure boundary leakage were occurring.</p>

		<p><u>Conclusion</u></p> <p>The conclusion is based on the results of the chemical analysis and a review of current and past images with all showing similar conditions.</p>
B-P B15.10	Dry Boric Acid On 1-CS-V-180, Body-To- Bonnet	<p>AR02288224 Dry Boric Acid on Body to Bonnet Condition Evaluation. The mating/sealing surface at the body-to-bonnet identified dry boric acid and was characterized as an inactive (not wet or dripping) boric acid leak. This condition does not involve a leak at a pressure retaining boundary. However, it does contact the stainless steel bolted connection of two pressure retaining items. Therefore this condition falls under the Boric Acid Corrosion Control (BACC) Program, ER-AP-116 and ASME Section XI. A boric acid program screening form was completed and five of the six screening questions were answered no. Question #2 was answered yes, the boric acid contacts bolting material. This condition was evaluated in accordance with the BACC program and the ASME Section Code Case N-566-2 requirements. The evaluation concluded that operation of this component with the observed minor leakage from the body-to-bonnet joint is acceptable until OR20. The component was cleaned under WR-94188421. The BACC/CC N-566-2 evaluation is located in AR-2283006.</p>

TABLE 2 ABSTRACT OF REPAIR/REPLACEMENT ACTIVITIES REQUIRED FOR CONTINUED SERVICE				
Code Class	Item Description	Description Of Work	Date Completed	Repair/Replacement Plan Number
ND	SW Line# 1802	Base Metal Repair	04/17/2017	WO#40444738-02