



Brunswick Nuclear Plant
8470 River Rd SE
Southport, NC 28461

June 15, 2020

Serial: RA-20-0124

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

Subject: Brunswick Steam Electric Plant, Unit No. 1
Renewed Facility Operating License No. DPR-71
Docket No. 50-325
Inservice Inspection Program Owner's Activity Report for Unit 1 Refueling
Outage 23

Ladies and Gentlemen:

Duke Energy Progress, LLC, is enclosing an American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Form OAR-1 Owner's Activity Report, for the Brunswick Steam Electric Plant (BSEP), Unit No. 1. The report covers inspection activities performed during Brunswick Unit 1 Refueling Outage 23 (i.e., B1R23) for the first inspection period of the fifth inservice inspection interval.

No regulatory commitments are contained in this letter. Please refer any questions regarding this submittal to Mr. Stephen Yodersmith, Brunswick Regulatory Affairs, at (910) 832-2568.

Sincerely,

A handwritten signature in black ink, appearing to read "Sabrina Salazar".

For

Sabrina Salazar
Manager – Nuclear Support Services
Brunswick Steam Electric Plant

Enclosure: Form OAR-1 Owner's Activity Report

cc (with enclosure):

U.S. Nuclear Regulatory Commission, Region II
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U.S. Nuclear Regulatory Commission
ATTN: Mr. Andrew Hon
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Rockville, MD 20852-2738

U.S. Nuclear Regulatory Commission
ATTN: Mr. Gale Smith, NRC Senior Resident Inspector
8470 River Road
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Chair - North Carolina Utilities Commission (**Electronic Copy Only**)
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Boiler and Pressure Vessel Safety Bureau
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Form OAR-1 Owner's Activity Report

FORM OAR-1 OWNER'S ACTIVITY REPORT

Report Number	<u>B1R23 OAR-1 Form</u>		
Plant	<u>Brunswick Steam Electric Plant (BSEP)</u>		
Unit No.	<u>1</u> <small>(if applicable)</small>	Commercial service date	<u>March 1977</u>
		Refueling Outage No.	<u>B1R23</u>
Current inspection interval	<u>Fifth Interval – Inservice Inspection and Pressure Test Plan</u> <u>Third Interval – Containment (IWE/IWL) Inspection Plan</u> <small>(1st, 2nd, 3rd, 4th, other)</small>		
Current inspection period	<u>First Period / First Refueling Outage</u> <small>(1st, 2nd, 3rd)</small>		
Edition and Addenda of Section XI applicable to the inspection plans	<u>2007 Edition with 2008 Addenda</u>		
Date and revision of inspection plans	<u>BNP-PM5-002, Revision 0, Revision Date: May 11, 2018</u> <u>BNP-PM5-005, Revision 1, Revision Date: October 2, 2018</u>		
Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans	<u>None</u>		
Code Cases used for inspection and evaluation:	<u>N-432-1, N-513-3, N-516-3, N-526, N-532-5, N-552-1, N-561-2, N-562-2,</u> <u>N-586-1, N-597-2, N-600, N-606-1, N-613-2, N-639, N-648-1, N-661-2,</u> <u>N-705, N-716-1, N-730-1, N-733, N-735, N-740-2, N-747, N-765, N-771,</u> <u>N-786-1, N-789, N-795, N-798, N-800, N-824, and N-845</u> <small>(if applicable, include cases modified by Case N-532 and later revisions)</small>		

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 B1R23 conform to the requirements of Section XI.
(refueling outage number)

Signed Stephen L Mays, BNP ISI Program Owner SLM4105 (137506) Digitally signed by SLM4105 (137506)
Date: 2020.06.08 09:50:56 -04'00' Date June 8, 2020
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 NC and employed by OneCIS 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 a loss of any kind arising from or connected with this inspection.

DMReyn2 (243476) Digitally signed by DMReyn2 (243476)
Date: 2020.06.11 16:08:12 -04'00' Commissions NB# 9150, B, C, I, N, NS, R.
Inspector's Signature National Board, State, Province, and Endorsements

Date _____

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

Examination Category and Item Number	Item Description	Evaluation Description
Augment / E-8 BWRVIP-75-A Category E	1B21N4D-5-SW1-2 Nozzle N4D Extention to Safe End (FSWOL)	During B1R23 scheduled successive inspection, a new weld flaw was discovered located in the original base metal on the carbon steel side of the dissimilar metal weld near the Alloy 600 weld butter. This flaw does not propagate into the weld overlay material. There was no flaw discovered in the weld overlay material (i.e. FSWOL applied during previous refueling outage; B1R22 - March 2018). Flaw sizing evaluation determined this new flaw was acceptable for continued service in accordance with ASME SXI IWA-3514. FSWOL successive examination is scheduled for the first or second refueling outage after discovery of this new flaw in accordance with regulatory commitment specified in BSEP Relief Request ISI-10, Attachment 1, para. A1.4(c)(6).
Augment / E-9 BWRVIP-75-A Category F	1B21N4D-5-SW2-3 Nozzle N4D Safe End to Pipe Extension (DM)	During B1R23 scheduled successive inspection, a previously identified weld flaw was re-examined and evaluated as unchanged since its discovery in B1R22 (March 2018). No new weld flaws were identified during this successive examination. Engineering evaluated the weld flaw and determined that the current condition remains bounded by the existing flaw growth-rate analysis (ref.: EC 411734; SI Calc. 1800389.301). This DM weld is scheduled for successive examination during the next two refueling outages (B1R24 - March 2022 and B1R25 - March 2024) in accordance with the regulatory commitment specified in in BWRVIP-75-A, Category F.
F-A / F1.10C	1-E51-3VH48 Hanger (Variable Spring) for Line 1- E51-3-4-901	During B1R23 scheduled inspection, 1-E51-3VH48 hanger spring cold-load setting was discovered to be out of tolerance (i.e. greater than 10% of the drawing specified cold load setting). Engineering review determined the as-found cold load setting was still within the working range of the spring support such that there is not operability concern (i.e. acceptable for return to service). WO 20292727-08 adjusted the support turnbuckle / threaded rods to restore its as-left cold load setting to the specified tolerance.

TABLE 2 ABSTRACT OF REPAIR/REPLACEMENT ACTIVITIES REQUIRED FOR CONTINUED SERVICE				
Code Class	Item Description	Description of Work	Date Completed	Repair / Replacement Plan Number
1	1-E51-V88	1-E51-V88 replaced valve internals (valve disc, hinge pin and bracket) due to worn parts degradation.	4/13/2020	20343949-01
1	1-B21-F013F	1-B21-F013F Replace SRV Main Body and SRV Pilot due to valve failed to respond on demand.	4/9/2020	20390561-01/17
1	1-B11-CRD (26-03)	1-B11-CRD (26-03) CRDM Bolting replacement following leakage during ASME Class 1 Pressure Test	5/20/2020	20389350-08
1	1-B11-CRD (14-19)	1-B11-CRD (14-19) CRDM Bolting replacement following leakage during ASME Class 1 Pressure Test	5/20/2020	20389350-11
3	1-VA-1B-FCU-RB	1-VA-1B-FCU-RB Weld Repair of Cooler Head and Tube-to-Tube Sheet	4/9/2020	20347816-18/28
3	1-SW-110PG179	1-SW-110PG179 Replaces support components (load pin and spherical bearing) identified as degraded.	4/16/2020	20356248-05
3	1-SW-110PG39	1-SW-110PG39 Replaced support components (load pin and spherical bearing) identified as degraded.	4/16/2020	20356248-06
3	1-SW-110-6-157	1-SW-110-6-157 Replaced pipe flange, pipe elbow, and 6"x 3/4" weld-o-let connection due to weld through-wall leak	5/4/2020	20356248-07/16