



OCT 20 2003

SERIAL: BSEP 03-0137

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324/LICENSE NO. DPR-62
INSERVICE INSPECTION PROGRAM FOR THE THIRD 10-YEAR INTERVAL –
REFUELING OUTAGE 15 (B216R1) OWNER'S ACTIVITY REPORT

Ladies and Gentlemen:

This letter submits the American Society of Mechanical Engineers (ASME), Section XI, Form OAR-1 Owner's Activity Report for Progress Energy Carolinas, Inc.'s (PEC) Brunswick Steam Electric Plant (BSEP), Unit No. 2. The enclosed Form OAR-1 Owner's Activity Report covers the period from May 30, 2001, through August 26, 2003.

ASME Code Case N-532-1, "Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000, Section XI, Division 1," requires an Owner's Activity Report Form OAR-1 to be prepared and certified upon completion of each refueling outage. On August 7, 2003, a revision to 10 CFR 50.55a went into effect which incorporates by reference NRC Regulatory Guide 1.147, Revision 13, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1." This revision of Regulatory Guide 1.147 conditionally accepts the use of ASME Code Case N-532-1. As specified by the ASME Code Case, the Form OAR-1 Owner's Activity Report for BSEP, Unit 2 Refueling Outage 15 (i.e., B216R1) is provided in Enclosure 1.

Table 2 of the Form OAR-1 Owner's Activity Report lists flaws or relevant conditions that required evaluations for continued service. The table list only one condition, which involves the bolted connection at valve B32-F031B, "Recirc Loop B Discharge Valve," which required evaluation. Subparagraph IWB-3144(b) of the ASME Code, Section XI, requires that evaluation analyses of examination results for the affected components be submitted to the regulatory authority having jurisdiction at the plant site. Accordingly, Enclosure 2 provides a copy of the evaluation of the examination results for leakage at the bolted connection for valve B32-F031B, identified during Unit 2 Refueling Outage 15.

Progress Energy Carolinas, Inc.
Brunswick Nuclear Plant
P.O. Box 10429
Southport, NC 28461

A047

Table 3 of the Form OAR-1 Owner's Activity Report lists one repair and one replacement activity previously involving the NRC. The repair of a through-wall leak on line 2-SW-103-24-157 was previously authorized by the NRC in a letter dated March 15, 2002, and documentation of this repair was provided by PEC's letter dated May 12, 2003 (Serial: BSEP 03-0069). The replacement activity involved a relief request submitted by PEC's letter dated October 25, 2002 (Serial: BSEP 02-0175) which was subsequently withdrawn by letter dated January 17, 2003 (Serial: BSEP 03-0013).

Enclosure 3 provides a copy of the Form OAR-1 Owner's Activity Report for the containment inspections performed in accordance with the ASME Code, Section XI, Subsections IWE and IWL during Unit 2 Refueling Outage 15.

Please refer any questions regarding this submittal to Mr. Leonard R. Beller, Supervisor - Licensing/Regulatory Programs, at (910) 457-2073.

Sincerely,



Edward T. O'Neil
Manager - Support Services
Brunswick Steam Electric Plant

WRM/wrm

Enclosures:

1. Owner's Activity Report – OAR-1 Report for B216R1 Refueling Outage, Revision 1
2. Leakage Evaluation for Bolted Connection at Valve B32-F031B
3. Owner's Activity Report – OAR-1 Report for B216R1 Refueling Outage Containment Inspections

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cc (with enclosure):

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U. S. Nuclear Regulatory Commission
ATTN: Mr. Eugene M. DiPaolo, NRC Senior Resident Inspector
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U. S. Nuclear Regulatory Commission **(Electronic Copy Only)**
ATTN: Ms. Brenda L. Mozafari (Mail Stop OWFN 8G9)
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Ms. Jo A. Sanford
Chair - North Carolina Utilities Commission
P.O. Box 29510
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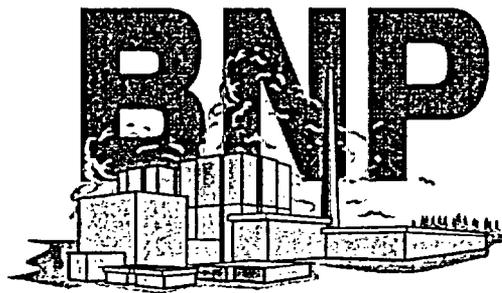
Division of Boiler and Pressure Vessel
North Carolina Department of Labor
ATTN: Mr. Jack Given, Assistant Director of Boiler & Pressure Vessels
4 West Edenton Street
Raleigh, NC 27601-1092

BSEP 03-0137
Enclosure 1

**Owner's Activity Report - OAR-1 Report
for B216R1 Refueling Outage, Revision 1**

CAROLINA POWER & LIGHT COMPANY BRUNSWICK STEAM ELECTRIC PLANT

UNIT 2



OWNER'S ACTIVITY REPORT

OAR-1 REPORT FOR B216R1 REFUELING OUTAGE

REVISION 1

Prepared By: L D D heathley Date 9-23-03
NDE / Snubber & Support Program Manager

Reviewed By: R. Fran R. il Date 9-23-03
Pressure Test Program Manager

Reviewed By: James W. Cook Date 9/23/03
Repair/Replacement Program Manager

Reviewed By: Raymond A. Com Date 9-23-03
Authorized Nuclear Inservice Inspector

INTRODUCTION

This report represents a summary of the Inservice Inspection (ISI) activities performed at the Carolina Power and Light Company's Brunswick Steam Electric Plant (BSEP) Unit 2 during the Spring 2003 refueling outage.

The examinations and testing performed during this timeframe were for credit during the second inspection period of the Third Inspection Interval.

Examinations and testing were performed to satisfy the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Inspection Program B, 1989 Edition with no addenda.

During the refueling outage, ASME Code Category B-D and R-A components were identified as having less than 90% coverage. A relief request will be submitted prior to the end of the Inspection Interval for examination coverage.

In accordance with requirements of Code Case N-532, which has been approved for use at the Brunswick Station, enclosed is the Owners Activity Report (OAR-1 Report).

FORM OAR-1 OWNER'S ACTIVITY REPORT

Report number 2-03-B216R1

Owner Carolina Power & Light Company, PO Box 1551, Raleigh, North Carolina
(Name and Address of Owner)

Plant Brunswick Steam Electric Plant, PO Box 10429, Southport, North Carolina
(Name and Address of Plant)

Unit No. 2 Commercial Service Date 11/3/75 Refueling outage no. B216R1
(if applicable)

Current inspection interval 3rd
(1st, 2nd, 3rd, 4th, other)

Current inspection period 2nd
(1st, 2nd, 3rd)

Edition and Addenda of Section XI applicable to the inspection plan 1989 edition with no addenda

Date and revision of inspection plan April 16, 2003 ISI Program Plan revision 8

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

CERTIFICATE OF CONFORMANCE

I certify that the statements made in this Owner's Activity Report are correct and that the examinations, tests, repairs, replacements, evaluations and corrective measures represented by this report conform to the requirements of Section XI.

Certificate of Authorization No. NA Expiration Date NA
(if applicable)

Signed L D Whetley NDE Program Manager Date September 23, 2003
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the under signed, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of North Carolina and employed by Hartford Steam Boiler of Connecticut have inspected the items described in the Owner's Activity Report during the period 5-30-01 to 8-26-03, and state that to the best of my knowledge and belief, the Owner has performed all of the 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 tests, repairs, replacements, evaluations and corrective measures described this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for a personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Rafael A. Amb Commissions NC-1433, A.N.I.B.C.
Inspector's Signature National Board, State, Province and Endorsements

Date 9-23-03

TABLE 1

ABSTRACT OF EXAMINATIONS AND TESTS

Examination Category	Total Examinations Required for the Interval	Total Examinations Credited for This Period	Total Examinations Credited (%) for the Period	Total Examinations Credited (%) to Date for the Interval	Remarks
B-A	28	0	0	32	See note 2
B-D	70	5	7	35	See note 2
B-E	46	0	0	0	See note 2
B-G-1	320	0	0	0	See note 2
B-G-2	NA	6	NA	NA	See note 4, 5
B-L-2	NA	NA	NA	NA	See note 4
B-M-2	NA	3	NA	NA	See note 4
B-N-1	3	0	0	33	
B-N-2	32	0	0	0	See note 2
B-O	8	0	0	0	See note 2
C-A	3	0	0	33	
C-B	2	0	0	0	See note 6
C-C	19	0	0	21	
C-D	9	0	0	22	See note 7
C-F-2	45	0	0	35	
D-B	45	0	0	20	
F-A	89	8	35	32	
R-A	56	17	30	30	See note 3

TABLE 1 NOTES

The following notes correspond to the numbers referenced in Table 1 of the OAR-1 Report:

1. Examination categories B-B, B-H, B-K-1, B-N-3, B-L-1, B-M-1, C-F-1, C-G, D-A, D-C do not apply to the Brunswick Station or are not required for the Third Inspection Interval.
2. Some or all examinations in this category may be deferred until the end of the inspection interval.
3. Examination category B-F and B-J have been subsumed by Category R-A to reflect approval of a Class 1 Risk Informed ISI Program. This was implemented with the commencement of the Second Inspection Period and the total number of examinations for the remaining periods and interval reflect Relief Request RR-27 and NRC Safety Evaluation dated 2/17/2000.
4. The examinations under this examination category are event related. They are only required if a subject pump or valve is disassembled during a maintenance activity.
5. Item number B7.80 of this category includes a requirement to examine CRD bolting if a CRD is disassembled. In accordance with relief request RR-04 which implemented Code Case N-547, there is no longer a requirement to examine this bolting.
6. This category has only 2 items and is covered by Relief Request RR-21.
7. Only 9 HPCI studs are accessible for examination. The remaining bolts are exempted from examination per Relief Request RR-2.

TABLE 2

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

Examination Category	Item Number	Item Description	Flaw Characterization (IWA-3300)	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes or No)
B-P	B15.70	Valve body to bonnet bolted connection leaking	NA	Yes

Note: for examination category B-P, the relevant condition was leakage at bolted connections. In accordance with the provisions of relief request RR-17, leakage at bolted connections required an evaluation using the criteria of ASME Code Case N-566-1.

TABLE 3**ABSTRACT OF REPAIRS, REPLACEMENTS, OR CORRECTIVE
MEASURES REQUIRED FOR CONTINUED SERVICE**

Code Class	Repair, Replacement, or Corrective Measure	Item Description	Description of Work	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes or No)	Date Completed	Repair/Replacement Plan Number
3	Repair	Piping	Repair of through wall leak on line 2-SW-103-24-157	No	3/16/03	191267
3	Replacement	Piping component	Replacement of blind flange and bolting per EC 50480	No	1/7/03	322150

Revision Summary

- Administrative corrections found during review

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Enclosure 2

Leakage Evaluation for Bolted Connection at Valve B32-F031B

pg. 1 of 1

ATTACHMENT 10

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Integrity Disposition Data Sheet for Pressure Retaining Bolting

Component: 2-B32-F031B Date: 3/27/03 OPT-80.1, Figure 4

1. Location and description of Bolted Connection Leakage:

B32-F031B, Recirc Loop B, Discharge valve; EI 015, DW Az 291
The valve was observed leaking 1/16" steady steam form the body to bonnet bolted connection.

2. References:

C-02409 (shs 00019-1 and 0020-1, Tech Manual FP-50274, DBD-02, D-02548 sh 0002B, D-02548 sh002A, 1/2 FP-5363, D-02518 (sh0001A and 0001B)

3. Number and Age of Bolts:

28 studs and nuts greater than 10 years

4. Bolt and component material:

Body to bonnet studs A193 grade B7
Bonnet nuts A194 grade 8
Valve Body/Bonnet A351 grade CF8

5. Corrosiveness of the process fluid that is leaking:

The process fluid during the performance of OPT-80.1 is reactor coolant. During normal operation, the reactor coolant is demineralized water with hydrogen and zinc addition. As such, the coolant is slightly acidic to close to neutral PH. With a loss of the hydrogen addition, the pH of the coolant will become more acidic. Since interruptions of the hydrogen addition are infrequent, the corrosiveness of the reactor coolant is minimal because of its generally neutral environment.

When the unit is shutdown, the coolant will become acidic. During this condition, the corrosion rate is slightly higher. However during this short period of time, this acidic condition would not compromise the integrity of these bolted connections.

In summary, the susceptibility of the bolting to corrosion because of the reactor coolant leakage is minimal. As such, the integrity of the bolted connection would not be compromised.

6. System function of the leaking bolted connection:

Recirc discharge valves close to isolate the loop on a LOCA ECCS signal to prevent LPCI flow diversion, pressure retaining boundary, isolation for pump and valve maintenance.

7. Leakage history:

2-B32-F031B body to bonnet leak has leaked the last 4 hydros

Evaluation:

2-B32-F031B valve was observed leaking 1/16" steady stream during the RPV leakage test (OPT-80.1). The bolted connection General Visual Inspection data sheet found no reportable indications. This valve historically has seen a steady 1/8" steam and has been visually inspected during heatup to seal for normal plant operation. Historical retorquing of the body to bonnet bolts for this valve has not reduced the leakage. Corrective actions were not required during B216R1. Based on the review performed, the leaking bolted connection was not predicted to fail during the next refueling cycle from bolting corrosion resulting in loss of structural integrity of the mechanical joint.

System Engineer: [Signature] Date: 6/17/03

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Enclosure 3

Owner's Activity Report – OAR-1 Report
for B216R1 Refueling Outage Containment Inspections

FORM OAR-1 OWNER'S ACTIVITY REPORT

Report Number CIP-B216R1

Owner Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc., PO Box 1551, Raleigh, North Carolina
(Name and Address of Owner)

Plant Brunswick Steam Electric Plant, PO Box 10429, Southport, North Carolina
(Name and Address of Plant)

Unit No. 2 Commercial Service Date November 1975 Refueling Outage No. B216R1
(if applicable)

Current Inspection Interval First Containment Inspection Interval (Subsection IWE & IWL Only)
(1st, 2nd, 3rd, 4th, other)

Current Inspection Period 2nd Inspection Period
(1st, 2nd, 3rd)

Edition and Addenda of Section XI Applicable to the Inspection Plan 1992 Edition w/ 1992 Addenda

Date and Revision of Inspection Plan DBNP-TR-002 (R8-3/01/03, R5-2/25/02 and R4-12/27/00)

Edition and Addenda of Section XI Applicable to Repairs and Replacements, if different than the Inspection Plan N/A

CERTIFICATE OF CONFORMANCE

I certify that the statements made in this Owner's Activity Report are correct and that the examinations, tests, repairs, replacements, evaluations, and corrective measures represented by this report conform to the requirements of Section XI.

Certificate of Authorization No. N/A Expiration Date N/A
(if applicable)

Signed [Signature] Equipment Performance Supervisor Date 5-6-03
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 North Carolina and employed by Hartford Steam Boiler Inspection and Insurance Company of Hartford, Connecticut have inspected the items described in this Owner's Activity Report, during the period 3/27/01 to 4/10/03, and state that to the best of my knowledge and belief, the Owner has performed all of the 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 examinations, tests, repairs, replacements, evaluations and corrective measures 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.

[Signature] Commissions NB-8557-ANIBC; NC-1433
Inspector's Signature National Board, State, Province and Endorsements
Date 5-8-03

This form (E00127) may be obtained for the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300

ATTACHMENT 2
Page 2 of 2
Code Case N-532 Tables 1, 2, and 3

Note: This Owner's Activity Report is only applicable to the Containment Inspection Program (Subsection IWE & IWL) and does not address Class 1, 2, and 3 components.

TABLE 1
ABSTRACT OF EXAMINATIONS AND TESTS

Examination Category	Total Examinations Required For The Interval	Total Examinations Credited For This Period	Total Examinations Credited (%) For This Period	Total Examinations Credited (%) To Date For The Interval	Remarks
E-A	783 (261/Period)	0	0%	0%	Exam Category E-A was revised to reschedule exams from B216R1 to the B217R1 outage in support of the deferral of the Unit 2 Type A Test (ILRT).
E-B	N/A	N/A	N/A	N/A	This Category is not being implemented as allowed by 10 CFR 50.55a(b)(2)(ix)(C).
E-C	48 (16/Period)	0	0%	0%	Exam Category E-C was revised to reschedule exams from B216R1 to the B217R1 outage in support of the deferral of the Unit 2 Type A Test (ILRT).
E-D	3 (1/Period)	0	0%	0%	Exam Category E-D was revised to reschedule exams from B216R1 to the B217R1 outage in support of the deferral of the Unit 2 Type A Test (ILRT).
E-F	N/A	N/A	N/A	N/A	This Category is not being implemented as allowed by 10 CFR 50.55a(b)(2)(ix)(C).
E-G	27 (9/Period)	0	0%	0%	Exam Category E-G was revised to reschedule exams from B216R1 to the B217R1 outage in support of the deferral of the Unit 2 Type A Test (ILRT).
E-P	N/A	N/A	N/A	N/A	
L-A	N/A	0	0%	N/A	The examination frequency for this Category is once every five years. Inspection interval is not applicable to this Category.
L-B	N/A	N/A	N/A	N/A	The Unit 2 containment does not have a post-tensioning system.

TABLE 2
ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRE EVALUATION FOR CONTINUED SERVICE

Examination Category	Item Number	Item Description	Flaw Characterization (N/A-3000)	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes or No)
None	None	None	none	None

TABLE 3
ABSTRACT OF REPAIRS, REPLACEMENTS, OR CORRECTIVE MEASURES REQUIRED FOR CONTINUED SERVICE

Code Class	Repair, Replacement, or Corrective Measure	Item Description	Description of Work	Flaw or Relevant Condition Found During Scheduled Section XI Examination or Test (Yes or No)	Date Completed	Repair/ Replacement Plan Number
None	None	None	No Work Performed	No	N/A	N/A