



JUL 26 2001

SERIAL: BSEP 01-0067

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 -
EVALUATION OF LEAKAGE AT BOLTED CONNECTIONS

Gentlemen:

In accordance with subparagraph IWB-3144(b) of the 1989 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Carolina Power & Light (CP&L) Company is submitting the enclosed evaluation, for the Brunswick Steam Electric Plant (BSEP), Unit No. 2, of leakage identified at ASME Class 1 bolted connections.

The third 10-year Inservice Inspection (ISI) Program is based on the 1989 Edition of the ASME Code, Section XI. By letter dated August 7, 2000, (Serial: BSEP 00-0086), CP&L submitted a request for relief, designated as Relief Request RR-17, Revision 4, *Leakage at Bolted Connections*. The submittal requested relief from the requirements of subparagraph IWA-5250(a)(2) of the ASME Code, Section XI. As an alternative, CP&L proposed to follow the requirements of ASME Code Case N-566-1, *Corrective Action for Leakage Identified at Bolted Connections Section XI, Division 1*. By letter dated January 3, 2001, the NRC approved Relief Request RR-17, Revision 4.

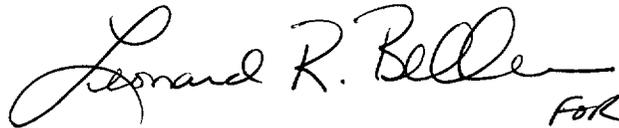
Subparagraph IWB-3144(b) requires that evaluation analyses of examination results for the affected components be submitted to the regulatory authority having jurisdiction at the plant site. The evaluation of the examination results for leakage at bolted connections identified during BSEP, Unit 2, Refueling Outage 14 is documented in Engineering Service Request 01-00010, a copy of which is enclosed.

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

Sincerely,

Handwritten signature of Leonard R. Beller in cursive script. The signature is written in black ink and includes the name "Leonard R. Beller" followed by a horizontal line and the initials "For" written below the line.

David C. DiCello
Manager - Regulatory Affairs
Brunswick Steam Electric Plant

WRM/wrm

Enclosure: Engineering Service Request 01-00010, *Evaluate OPT-80.1 & Pressure Retaining Bolts per ASME XI*

cc (with enclosure):

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ENCLOSURE

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324/LICENSE NO. DPR-62
INSERVICE INSPECTION PROGRAM FOR THE THIRD 10-YEAR INTERVAL -
EVALUATION OF LEAKAGE AT BOLTED CONNECTIONS

Engineering Service Request 01-00010, Revision 0,
Evaluate OPT-80.1 & Pressure Retaining Bolts per ASME XI

Form 1 ENGINEERING SERVICE REQUEST			
ESR # 01-00010	Rev # 0	WR/JO #	Other Documents (CR, OEF, etc.) OTHER -RR-17
Plant/Unit BNP 2	Primary System Number & Name 1005 B21,B11-NUCLEAR BOILER (INC.RX VESSEL & INTERNALS)		<input checked="" type="checkbox"/> Multiple Systems Affected
Title Evaluate OPT-80.1 & Pressure Retaining Bolts per ASME XI		Originator/Phone RICH, FRANN /850-3516	
Due Date: 03/31/2001		TURNOVER REQUIRED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Reviews (Print Name, Sign, Date) Design Verification <u>Gerald L. Spry / 3/23/01</u> <input type="checkbox"/> Other Reviews Required <input checked="" type="checkbox"/> Records Attached		OTHER REVIEWS (print name, sign, date) ANII <u>R. Accot B / 3/23/01</u>	
ENGINEERING DISCIPLINES (print name, sign, date) Civil/Struct/Seismic <u>N/A</u> Materials Design <u>Gerald L. Spry / 3/23/01</u> Syst Engr 1005 <u>Kenwood R. Woodard / 3/21/01</u> Syst Engr 2020 <u>Phillip Gore / 3/21/01</u> Syst Engr 1070 <u>John R. Bass / 3/21/01</u>			
ENGINEERING PROGRAMS (print name, sign, date) ISI/IST/App <u>3/23/01</u> <u>Jerry W. Cence / Jerry W. Cence</u>			
OTHER REVIEWS (print name, sign, date) QC <u>N/A</u>			
Product Type ENG EVAL	Additional Systems 2020 1070	ESR Team JERRY CRIDER BOYD STANLEY PHIL GORE JOHN BASS KEN WOODARD	Quality Class A Safety-Related
APPROVALS			
<input type="checkbox"/> NAS Before Approval/Implementation <input type="checkbox"/> PNSC Before Approval/Implementation <input type="checkbox"/> NRC Before Implementation		Is a 10CFR 50.59 Safety Review required per (plant specific procedure)? <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Safety Screen ONLY <input type="checkbox"/> USQD <input type="checkbox"/> N/A (Engineering Disposition Only)	
Responsible Engineer FRANN RICH		<u>R. Frann Rich / 3/23/01</u>	
Responsible Manager (Print Name, Sign, Date)		<u>J. McINTYRE / 3/23/01</u>	
Plant General Manager (Print Name, Sign, Date)			
Procedure: Form EGR-NGGC-0005-1-10		DCM01a2a 7/13/1999	

Form 1

ENGINEERING SERVICE REQUEST

ESR #	Rev #	Title
01-00010	0	Evaluate OPT-80.1 & Pressure Retaining Bolts per ASME XI

Request:

Per ASME Section XI, Subsection IWA-5250(a) (2) an evaluation of pressure retaining bolted connections is required when leakage is observed via VT-2 Examination for Class 1 components during the RPV Hydro (OPT-80.1). Establish corrective action level guidelines for corrective measures to be used during the performance of the Unit 2 B215R1 test. This ESR will also provide engineering support for the evaluation of component leakage identified during the RPV Hydrostatic test, OPT-80.1, to be performed during the Unit 2 B215R1 refueling outage.

Response:

A review of the previous two OPT-80.1 pressure test and ESRs for pressure retaining bolts per ASME Sect. XI have been reviewed to identify previous leakage found during the PT-80.1 leakage inspection and the leakage found during the pressure retaining bolt inspection.

This ESR has completed the required evaluation for OPT-80.1 with acceptance and/or corrective measures as identified on Attachment 6.

This ESR also completed the required evaluation for pressure retaining bolts per ASME Sect. XI. with acceptance and/or corrective measures as identified on Attachment 1 and Attachment 2.

C. List of Effective Pages

ESR Pages:

<u>Page</u>	<u>Rev</u>								
1	0	5	0	9	0	13	0	17	0
2	0	6	0	10	0	14	0	18	0
3	0	7	0	11	0	15	0	19	0
4	0	8	0	12	0	16	0	20	0

Attachment 1:

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Page Rev
22 0 (2 page)

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Page Rev
23 0

Attachment 4

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24 0

Attachment 5

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E. Problem Statement

Based on the approval of Relief Request #17, evaluate the pressure retaining bolted connections identified during the last two Unit 2 OPT-80.1, Reactor Pressure Vessel ASME Section XI Pressure Test, as generic examples of pressure retaining bolted connection leakage. Establish corrective action level guidelines for corrective measures to be used during the performance of the B215R1 test in accordance with the requirements of Relief Request #17 and the ASME Section XI Code.

This ESR will also document the results of the Unit 2 pressure test (PT-80.1) performed by the Equipment Performance Group. Corrective action WRs will be initiated as required.

ESR Team Members:

An ESR Team was not established.

F. Solution Statement

A review of the previous two OPT-80.1 pressure tests for the B214R1 and B213R1 outage was performed to identify pressure retaining bolted connections that have been observed leaking. For those bolted connections, an evaluation was performed to address joint integrity when the specified conditions are met.

Guidance for corrective measures to be taken was also established. This guidance should be followed to provide timely resolution to identified mechanical bolt leakage.

To assure evidence of corrosion and other abnormal conditions are properly identified, requirements associated with the visual examination were established. These requirements also define the criteria for recording abnormal conditions.

Although not considered pressure retaining, disposition of leakage at mechanical packing and/or seal connections was addressed. For clarification, leakage from these connections is outside the scope of Relief Request #17.

Guidance for the evaluation and follow-up actions specified in Relief Request #17 was provided to assure compliance.

The evaluation of bolted connections specified in this ESR is applicable to the B215R1 outage. However, the methodology and guidance specified in this ESR can be used to support future Unit 1 and Unit 2 bolt evaluations.

Attachment 6, B215R1 Leakage Results Inside/Outside Drywell will be used to evaluate OPT-80.1.

G. Design Specification

G.1. Scope Description

The scope of this ESR is to (1) evaluate the pressure retaining bolted connections that have routinely leaked during the last two pressure tests and (2) identify leakage at bolted connections during the performance of OPT-80.1 during the B215R1 outage and (3) evaluate leakage findings of the Unit 2 hydrostatic test (OPT-80.1) during B215R1.

This ESR complies with the applicable requirements specified in the ASME Section XI Code, ASME Code Case N-566-1 and Relief Request #17, Revision 4.

G.2. References

Industry Standards:

1. ASME Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, 1989 Edition
2. Case N-566-1, Corrective Action for Leakage Identified at Bolted Connections, Section XI, Division 1, Approval Date: February 15, 1999
3. ASME N45.2.6, Qualification of Inspection, Examination, and Testing Personnel for Nuclear Power Plants

Design Basis Documents:

None

Specifications:

None

Drawings:

None

Calculations:

None

Nuclear Generating Group (NGG) Procedures:

Nuclear Generating Group (NGG) Procedures:

1. EGR-NGGC-0003, Design Review Requirements, Revision 5
2. EGR-NGGC-0005, Engineering Service Requests, Revision 14
3. NGGM-PM-0007, Corporate Quality Program Manual, Revision 4

Plant Procedures:

1. Engineering Procedure (ENP)-16, Procedure For Administrative Control of Inservice Inspection Activities, Revision 40
2. ENP-16.9, Administrative Control of the ASME Section XI Pressure Testing Program, Revision 7
3. Periodic Test Procedure, OPT-80.1, Reactor Pressure Vessel ASME Section XI Pressure Test, Revision 41 and 42

Plant Change Documents:

None

Regulatory Documents:

1. Section 55a, Codes and Standards, of Part 50 of Title 10 of the Code of Federal Regulations (10 CFR 50.55a)
2. Letter from the NRC, Brunswick Steam Electric Plant, Unit Nos. 1 and 2 – Request for Approval of Revised Relief Request RR-17, Revision 4, on System Pressure Test for the Third 10 Year Inservice Inspection Interval, Dated January 3, 2001

Other References:

1. Brunswick Nuclear Plant (BNP), Unit 1 and 2 Technical Specifications
2. Updated Final Safety Analysis Report (UFSAR)
3. Technical Requirements Manual, Unit 1 and 2
4. Third Inspection Interval ISI Program Plan for Class 1, 2, & 3 Components and Their Supports for the Third Inspection Interval, Revision 4
5. Relief Request #17, Leakage at Bolted Connection, Revision 4
6. ESR 99-00418, B113R1 Evaluate Pressure Retaining Bolts per ASME Sec XI, Revision 0
7. ESR 99-00279, B214R1 Hydrotest Bolted Connection Corrective Action Evaluation, Revision 0
8. ESR 97-00486, Unit 2 (B213R1) Hydrostatic Test Component Leakage Evaluation, Revision 0
9. NDEP-0611, VT-1 Visual Examination of Nuclear Power Plant Components
10. NDEP-0612, VT-2 Visual Examinations of Nuclear Power Plant Components

11. General Electric (GE) Specification 22A6485, Control Rod Drives, Revision 0
12. 1-FP-55013, Sheets 3, Rockwell International Mainsteam Isolation Valve List of Material, Revision C
13. 1-FP-05363, General Electric Reactor Recirculation System 600# Double Disc Gate Valve, Revision A
14. 0-FP-05364, Darling Valve & Manufacturing No. S150WDD Series 600 Doubles Disc Gate Valve, Revision A
15. 0-FP-05365, Anchor/Darling Valve S150WDD Double Disc Gate Valve, Revision B
16. 0-FP-05366, Darling Valve & Manufacturing No. S150WDD Series 600 Double Disc Gate Valve, Revision A

G.3. Design Inputs

The following items are those applicable to this ESR from the list provided in Attachment 2 of Procedure EGR-NGGC-0005.

1. Basic Functions:

The components affected by this ESR are part of the Reactor Coolant Pressure Boundary (RCPB). Components that comprise the RCPB are identified in Table 3.2.2.6 of the UFSAR. The Code classification for these components is ISI Class 1.

2. Codes, Standards, and Regulatory Requirements:

10 CFR 50.55a

Section 55a(g)(4) of 10 CFR 50.55a requires that inservice examination of components and system pressure tests conducted during successive Inspection Intervals comply with the requirements in the latest edition and addenda of the ASME Section XI Code incorporated by reference in paragraph (b)(2) of Section 55a on the date twelve months prior to the start of the successive interval.

The third successive Inspection Interval for BNP became effective on May 11, 1998. The edition and addenda incorporated by reference in paragraph (b)(2) on the date twelve months prior to May 11, 1998 was the 1989 Edition of the ASME Code, Section XI. Accordingly, the Code of record for the Third Inspection Interval is the 1989 Edition (no Addenda) of the ASME Code, Section XI.

The requirements for inservice inspection (ISI) are outlined in paragraph (g), Inservice Inspection Requirements, of 10 CFR 50.55a. The applicable requirements specified in this paragraph are based on the issuance date of the

construction permit. Since the construction permit for Unit 1 and 2 were issued in February 1970, the requirements specified in paragraph (g)(1) are applicable.

In summary, paragraph (g)(1) states that components that are part of the RCPB and their supports must meet the requirements of the ASME Section XI Code applicable to those components that are classified as ASME Code Class 1.

ASME SECTION XI CODE, 1989 EDITION

Since these components are within the RCPB and classified as ISI Class 1, the applicable requirements of Subsection IWA, General Requirements and Subsection IWB, Requirements for Class 1 Components are to be met.

3. Test Requirements:

RELIEF REQUEST #17

The Nuclear Regulatory Commission approved the following alternative requirements by letter dated January 3, 2001:

When leakage is detected at bolted connections, as an alternative to the requirements of IWA-5250(a)(2), the requirement of either 1 or 2 below shall be met:

- 1) The leakage shall be stopped and the bolting and component material shall be evaluated to determine joint integrity and the susceptibility of the bolting to corrosion and failure. The evaluation will, at a minimum, consider the following factors:
 - The number and service age of the bolts
 - Bolt and component materials
 - Corrosiveness of the process fluid that is leaking
 - Leakage location and system function
 - Leakage history at the connection or other system components
 - Visual evidence of corrosion at the connection (i.e., while the connection is assembled).

- 2) If the leakage is not stopped, the joint shall be evaluated in accordance with IWB-3142.4 to determine joint integrity and the susceptibility of the bolting to corrosion and failure. The evaluation will, at a minimum, consider the following factors:
 - The number and service age of the bolts
 - Bolt and component materials
 - Corrosiveness of the process fluid that is leaking
 - Leakage location and system function
 - Leakage history at the connection or other system components

- Visual evidence of corrosion at the connection (i.e., while the connection is assembled).

When the evaluation of the above factors is concluded, and if the evaluation determines that the leaking conditions has not degraded the fasteners, then no further action is required. However, reasonable attempts shall be made to stop the leakage as appropriate. In accordance with IWB-3144(b), the evaluation analyses will be submitted to the regulatory authority having jurisdiction at the plant site.

If the evaluation of the factors in 1 or 2 above indicates the need for further evaluation, then a bolt closest to the source of leakage shall be removed. The bolt will receive a VT-1 examination and be evaluated and dispositioned in accordance with IWB-3517. If the removed bolting shows evidence of rejectable degradation, all remaining bolts shall be removed and receive a VT-1 examination in accordance with IWB-3140. If leakage is identified when the bolted connection is in service and the information in the evaluation is supportive, the removal of the bolt for the VT-1 examination may be deferred until the next refueling outage.

4. Accessibility, Maintenance, Repair, and ISI Requirements:

As it applies to this ESR, the applicable requirements are defined in Subsection IWA and IWB of the ASME Section XI Code, 1989 Edition, ASME Code Case N-566-1, and Relief Request #17.

G.4. Assumptions

None

G.5. Evaluations

Background

During the Third Inspection Interval, the Code of record for BNP is the ASME Section XI Code, 1989 Edition. Paragraph IWA-5250(a)(2) of this edition states "if leakage occurs at a bolted connection, the bolting shall be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100.

As allowed by 10 CFR 50.55a(a)(3)(i), a request for relief from the requirements of IWA-5250(a)(2) was submitted. As an alternative to the requirements of IWA-5250(a)(2), CP&L proposed to follow the requirements of ASME Code Case N-566-1. In addition to the requirements specified in ASME Code Case N-566-1,

CP&L proposed to implement additional action in those cases where the evaluation of the specified factors indicates the need for further evaluation.

The alternative requirements discussed above are specified in Relief Request #17. These acceptable alternative requirements were evaluated by the Nuclear Regulatory Commission (NRC) and determined to provide an acceptable level of quality and safety by letter dated January 3, 2001.

Evaluation

CORRECTIVE MEASURES

The following Corrective Measures and Leakage Rate Thresholds were established to support the last Unit 1 outage (B113R1). Since they have been designed verified and approved through ESR 99-00418 they will be used for B215R and future inspections.

As required by paragraph IWA-5250(a) of the ASME Section XI Code, leakage detected during a pressure test is to be dispositioned by the Owner (CP&L) for corrective measure. To provide a timely resolution to this identified leakage, guidance for taking corrective measures has been established for inside drywell only. If greater than 30 dpm is found outside primary containment, actions will be taken to stop leakage or will be evaluated by the System Engineer. As such, this guidance should be implemented unless otherwise specified by the System Engineer or the OPT-80.1 Leakage Evaluation Team:

Leakage Rate Thresholds

Corrective Measures (As Applicable)

GREATER Than 120 Drops Per Minute

- Actions (e.g., re-torque of bolting) SHALL be taken to stop or reduce the leakage AND
- PERFORM an integrity evaluation of the affected pressure retaining bolted connection AND
- If the evaluation warrants bolt removal, REMOVE the bolt closest to the leakage and PERFORM a VT-1 examination. If the removed bolt shows EVIDENCE of rejectable degradation, ALL remaining bolts are to be REMOVED and EXAMINED.

GREATER Than 30 Drops Per Minute and EQUAL TO or LESS Than 120 Drops Per Minute

- Reasonable attempts (e.g., re-torque of bolting) should be taken to stop or reduce the leakage, as appropriate.

Leakage Rate Thresholds

Corrective Measures (As Applicable)

EQUAL TO or LESS Than 30 Drops per Minute

- If leakage is not stopped, this small amount of leakage is expected to seal during normal plant heat up and would be acceptable for the current operating cycle.
- Because of ALARA concerns, corrective measures are ONLY required when specified by the System Engineer or the OPT-80.1 Leakage Evaluation Team.
- This small amount of leakage is expected to seal during normal plant heat up and would be acceptable for the current operating cycle.

EXAMINATION OF BOLTED CONNECTIONS

As specified in Relief Request #17, visual examination of corrosion at the bolted connection is one of the required attributes to support the integrity evaluation. Although a visual examination is required, the type and method for this examination are not specified. To assure evidence of corrosion and/or other abnormal conditions are properly identified and characterized, the following requirements have been established:

Visual Examination Method:

When leakage is identified at a bolted connection, a general visual examination is to be performed to determine if evidence of corrosion and/or other abnormal conditions are present. The general visual examination is to be performed either DIRECTLY or REMOTELY with adequate illumination (natural or artificial) and resolution (suitable for the local environmental conditions) to detect evidence of corrosion and/or other abnormal conditions.

The general visual examination is to be performed on the accessible surfaces of the "as-found" bolted connection.

Examiner Qualification:

Personnel performing the general visual examination are to be qualified and/or certified per an approved procedure that meets the applicable requirements of ASME N45.2.6.

Recordable Conditions:

During the performance of the general visual examination, any of the following conditions are to be recorded on the General Visual Examination Data Sheet (Attachment 1). If one of the following conditions is identified, the magnitude and extent of the condition is to be characterized on the data sheet.

- Localized corrosion and/or pitting that visually appears to have REDUCED the bolt or stud cross-section or REDUCED the material thickness of affected component. **NOTE:** General corrosion and light surface pitting are NOT considered abnormal and are NOT required to be recorded
- Bent, twisted, fractured, and/or deformed bolts, studs, nuts, or washers.
- Missing bolts, studs, nuts, or washers,
- Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate degradation of the bolted connection. **NOTE:** Conditions, such as fabrication marks, scratches, surface abrasion, material roughness, and any other conditions acceptable by the material, design, and manufacturing specification are NOT considered abnormal and are NOT required to be recorded.

Relevant Conditions:

The relevant conditions listed below will require evaluation to determine if the integrity of the bolted connection has been affected. This evaluation is to be documented on the Integrity Disposition Data Sheet (Attachment 2). If the evaluation determines that the recorded condition is rejectable and warrants bolt removal, the bolt closest to the source of leakage is to be removed and visually (VT-1) examined. The following represent relevant conditions:

- Localized corrosion and/or pitting that has REDUCED the bolt or stud cross-section by more than five percent.
- Localized corrosion and/or pitting that has REDUCED the required material thickness (i.e., design) of affected component.

- Bending, twisting, or deformation of bolts or studs to the extent that the joint integrity is impaired.
- Fractured bolts, studs, and/or nuts.
- Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate that joint integrity has been impaired.

PACKING AND SEAL LEAKAGE

During the performance of OPT-80.1, leakage at mechanical packing and/or seal connections may be identified. Although this leakage is required to be dispositioned, these connections are not considered pressure retaining and are outside the scope of Relief Request #17. The guidance for corrective measures discussed earlier should be used to disposition any leakage past these non-pressure retaining connections.

EVALUATION OF BOLTED CONNECTIONS

When leakage is detected at pressure retaining bolted connections, an evaluation is to be performed to determine joint integrity and the susceptibility of the bolting to corrosion and failure. The evaluation is to be documented on an Integrity Disposition Data Sheet (Attachment 2) and at a minimum, consider the following factors:

- The number and service age of the bolts
- Bolt and component materials
- Corrosiveness of the process fluid that is leaking
- Leakage location and system function
- Leakage history at the connection or other system components
- Visual evidence of corrosion at the connection (i.e., while the connection is assembled).

When the evaluation of the above factors is concluded, and if the evaluation determines that the leaking conditions has not degraded the fasteners, then no further action is required.

If the evaluation of the above factors indicates the need for further evaluation, then a bolt closest to the source of leakage is to be **REMOVED**. The removed bolt is to receive a visual (VT-1) examination per an approved Non-Destructive

Examination Procedure (e.g., NDEP-611). The examination results are to be evaluated and disposition in accordance with paragraph IWB-3517 of the ASME Section XI Code, 1989 Edition.

If the removed bolting shows evidence of rejectable degradation, all remaining bolts are to be removed and receive a visual (VT-1) examination.

EVALUATION OF BOLTED CONNECTIONS WITH HISTORICAL LEAKAGE

Based on the results of the previous two OPT-80.1 pressure tests on Unit 2, leakage associated with the components listed below was identified. In most cases, leakage at these connections that was less than 120 drops per minute will typically seal following the startup of the unit and heat-up of the affected bolted connection. For this reason and ALARA, actions to stop all leakage at these connections may not be taken.

As required by ASME Code Case N-566-1, any leakage that is not stopped shall be evaluated for joint integrity. As such, the following bolted connections have been pre-evaluated in accordance with requirements specified in Relief Request #17 to support the timely completion of OPT-80.1. An Integrity Disposition Data Sheet (Attachment 2) is not required for these bolted connections if they fall within the leakage rate thresholds provided in this ESR.

Control Rod Drive (CRD) Housing Flange (Total 137 Units)

- a) The number and service age of the bolts

Each flange contains eight cap screws. Since the cap screws are replaced every time a CRD mechanism is replaced or rebuilt, the service age will vary. However, all cap screws were replaced between 1991 and 2001. As such, the service age will be assumed ten years.

- b) Bolt and component material

The original cap screws were SA-193 Grade B7 (AISI 4140). Bolting material AISI 4340 was approved for use per SEEF 94-0009.

Per the GE Specification 22A6485, the flange material is SA-182, F304.

- c) Leakage location and system function

Previous leakage rate as high as 150 drops per minute, have been observed at the housing flange and dispositioned by previous ESR. The housing flange is part of the Control Rod Drive Hydraulic System (CRDHS). The function of this system is to provide filtered, demineralized water at regulated pressures and flow rates to support the (1) CRD mechanism movement, (2)

cooling for the CRD mechanism, (3) scram accumulator charging, and (4) reactor recirculation pump seal purging.

d) Leakage history at the connection or other system components

During the past two pressure tests, only leakage at the housing flange has been identified.

Reactor Recirculation Valves (Total 10 Valves)

a) The number and service age of the bolts

Valve #	# of Bolts
B32-F023A/B	28
B32-F031A/B	28
B32-F032A/B	8
B32-F043A/B	24
B32-F044A/B	8

The service age of the above will vary. For this reason, the service age will be assumed as greater than ten years.

b) Bolt and component material

Bonnet Studs - A-193 Grade B7
Bonnet Nuts - A-194 Grade B8
Valve Body/Bonnet - A-351 Grade CF8

c) Leakage location and system function

Previous leakage of 120 drops per minute or less has been observed at the body to bonnet bolted connection of the above listed valves. These valves are part of the Reactor Recirculation System. The function of this system is to provide a means of controlling reactor power level by utilizing a system to control the amount of forced circulation of reactor moderator through the core.

d) Leakage history at the connection or other system components

During the previous pressure tests, only leakage at the valve to bonnet connection has been observed. This condition has been routinely limited to those valves identified above.

Main Steam Isolation Valves (Total 8 Valves)

- a) The number and service age of the bolts

Valve #	# of Bolts
B21-F022A/B/C/D	20
B21-F028A/B/C/D	20

The service age of the above will vary. For this reason, the service age will be assumed as greater than ten years.

- b) Bolt and component material

Bonnet Studs & Nuts - A-540 Grade B23
Valve Body - A-216 Grade WCB
Valve Bonnet - A-105 Grade II

- c) Leakage location and system function

Previous leakage of 10 drops per minute or less has been observed at the body to bonnet bolted connection of the above listed valves. These valves are part of the Main Steam System. The function of this system is to provide the pathway that transports high quality steam from the Reactor Vessel to various steam driven components.

- d) Leakage history at the connection or other system components

During the previous pressure tests, only leakage at the valve to bonnet connection has been observed. This condition is limited to those valves identified above.

Corrosiveness Of The Process Fluid That Is Leaking

The process fluid for all of the above bolted connections 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.

Integrity of Bolted Connections

The bolted connections listed above have routinely exhibited leaking during the performance of OPT-80.1. Leakage of 120 drops per minute will be evaluated as applicable per the corrective measure, although historical verification has confirmed that this small amount of leakage will typically seal as the unit heats up and the bolted connection expands. As such, continued leakage at these bolted connections is unlikely.

Assuming the leakage does not completely seal following heat up, this small amount of leakage would not compromise the integrity of the affected bolted connection over one cycle of operation. The corrosiveness of the process fluid during normal operation is insignificant. The material design of these connections is adequate for the temperatures and pressures that will be experienced during normal plant operation. In addition, joints that are found to be leaking will have bolting evaluations as required by this ESR

The affected bolted connections within the Control Rod Drive and Reactor Recirculation System were designed using SA-193, SA-182, A-194, and A-351 material. These materials are very resistant to general corrosion, and are not adversely affected by small amounts of leakage during the operating cycle.

For the Main Steam System, the affected bolted connections are designed with A-540, A-216 and A-105 material. These materials have acceptable resistance to limited exposure to reactor coolant; but are subject to light general corrosion if exposed to water and oxygen over long periods of time. Although subject to reactor coolant during the pressure tests, these bolted connections are not subject to this process fluid during normal operation.

As discussed above, general corrosion of the bolted connections may be observed during the performance of the pressure test. The observed general corrosion is a dissolution process on the surface of a metal or alloy exposed to a corrosive environment. The rate of corrosion is time dependent and tends to decrease to a low level after prolonged exposure in neutral environments particularly in the absence of aggressive anions such as chloride and sulfate. With the systems in question, the affected bolted connections are designed with materials that have acceptable resistance to general corrosion. As such, general

corrosion and light surface pitting on these bolted connections will not affect their integrity and are acceptable.

In summary, the integrity of the above bolted connections and other bolted connections with similar material is acceptable provided no rejectable conditions are observed during the general visual examination and the observed leakage is acceptable per the corrective measures. No further actions are required on these bolted connections unless otherwise specified by the System Engineer or the OPT-80.1 Leakage Evaluation Team.

G.6. Interfaces

This section is not applicable to this ESR

G.7. Quality Class Determinations

Quality class of the components involved in this ESR is Quality Class A.

G.8. Precautions and Limitations

This section is not applicable to this ESR.

H. Installation Section

This section is not applicable to this ESR.

I. Turnover Summary

No turnover to Operation is required for this ESR.

J. Attachments List

The following Attachments are included in this ESR.

- Attachment 1 General Visual Examination Data Sheet for Class 1 Pressure Retaining Bolting
- Attachment 2 Integrity Disposition Data Sheet for Class 1 Pressure Retaining Bolting
- Attachment 3 Completed General Visual Examination Data Sheets and Completed Integrity Disposition Data Sheets
- Attachment 4 Record of Lead Review
- Attachment 5 Generic ESR Comment Sheet
- Attachment 6 OPT-80.1, B215R1 RPV Hydro Leakage Inside/Outside Drywell
- Attachment 7 10 CFR 50.59 Review
- Attachment 8 PT-80.1 RPV Hydro Pressurization Chart

ATTACHMENT 1 - 1 of 5 pages
Sheet 1 of 1

GENERAL VISUAL EXAMINATION DATA SHEET
FOR CLASS 1 PRESSURE RETAINING BOLTING

Component: SEE LIST BELOW Exam Date: 03/19/01

Exam Method: Direct Remote

Check the following applicable examination attributes:

The "as-found" condition was found to be acceptable.

Recordable Conditions:

Localized corrosion and/or pitting that visually appears to have REDUCED the bolt or stud cross-section or REDUCED the material thickness of the affected component. **NOTE:** General corrosion and light surface pitting are NOT considered abnormal and are NOT required to be recorded

Bent, twisted, fractured, and/or deformed bolts, studs, nuts, or washers.

Missing bolts, studs, nuts, or washers,

Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate degradation of the bolted connection.

NOTE: Conditions, such as fabrication marks, scratches, surface abrasion, material roughness, and any other conditions acceptable by the material, design, and manufacturing specification are NOT considered abnormal and are NOT required to be recorded

Remarks: CRD 06-19, 06-35, 06-39, 22-43, 22-23
30-15 ONLY THE HEADS OF THE BOLTS WERE
EXPOSED FOR INSPECTION.

QC Examiner

Carroll S. Vincent



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Attachment 1
Sheet 1 of 1

GENERAL VISUAL EXAMINATION DATA SHEET
For Class 1 Pressure Retaining Bolting

Component: 2-B21-F028A Exam Date: 3-18-01

Exam Method: Direct Remote

Check the following applicable examination attributes:

The "as-found" condition was found to be acceptable.

Recordable Conditions:

Localized corrosion and/or pitting that visually appears to have REDUCED the bolt or stud cross-section or REDUCED the material thickness of the affected component. NOTE: General corrosion and light surface pitting are NOT considered abnormal and are NOT required to be recorded

Bent, twisted, fractured, and/or deformed bolts, studs, nuts, or washers.

Missing bolts, studs, nuts, or washers,

Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate degradation of the bolted connection.

NOTE: Conditions, such as fabrication marks, scratches, surface abrasion, material roughness, and any other conditions acceptable by the material, design, and manufacturing specification are NOT considered abnormal and are NOT required to be recorded

Remarks: _____

QC Examiner [Signature]



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Attachment 1
Sheet 1 of 1

GENERAL VISUAL EXAMINATION DATA SHEET
For Class 1 Pressure Retaining Bolted

Component: 2-B21-FO28C Exam Date: 3-18-01

Exam Method: Direct Remote

Check the following applicable examination attributes:

The "as-found" condition was found to be acceptable.

Recordable Conditions:

Localized corrosion and/or pitting that visually appears to have REDUCED the bolt or stud cross-section or REDUCED the material thickness of the affected component. NOTE: General corrosion and light surface pitting are NOT considered abnormal and are NOT required to be recorded

Bent, twisted, fractured, and/or deformed bolts, studs, nuts, or washers.

Missing bolts, studs, nuts, or washers,

Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate degradation of the bolted connection.

NOTE: Conditions, such as fabrication marks, scratches, surface abrasion, material roughness, and any other conditions acceptable by the material, design, and manufacturing specification are NOT considered abnormal and are NOT required to be recorded

Remarks: Flange surface on south side body to Bolome T HAS
Been opened Form 1" By 1/16"

QC Examiner [Signature]



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3/18/01

Attachment 1
Sheet 1 of 1

GENERAL VISUAL EXAMINATION DATA SHEET
FOR CLASS 1 Pressure Retaining Boltins

Component: 2B32-F0318 Exam Date: 03/18/01

Exam Method: Direct Remote

Check the following applicable examination attributes:

The "as-found" condition was found to be acceptable.

Recordable Conditions:

Localized corrosion and/or pitting that visually appears to have REDUCED the bolt or stud cross-section or REDUCED the material thickness of the affected component. NOTE: General corrosion and light surface pitting are NOT considered abnormal and are NOT required to be recorded

Bent, twisted, fractured, and/or deformed bolts, studs, nuts, or washers.

Missing bolts, studs, nuts, or washers,

Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate degradation of the bolted connection.
NOTE: Conditions, such as fabrication marks, scratches, surface abrasion, material roughness, and any other conditions acceptable by the material, design, and manufacturing specification are NOT considered abnormal and are NOT required to be recorded

Remarks: _____

QC Examiner *[Signature]* / John Campbell



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3/18/01

Attachment 1
Sheet 1 of 1

GENERAL VISUAL EXAMINATION DATA SHEET
For Class 1 Pressure Retaining Bolting

Component: CRD (See Below for Component List) Exam Date: 3-18-01

Exam Method: Direct Remote

Check the following applicable examination attributes:

The "as-found" condition was found to be acceptable.

Recordable Conditions:

Localized corrosion and/or pitting that visually appears to have REDUCED the bolt or stud cross-section or REDUCED the material thickness of the affected component. NOTE: General corrosion and light surface pitting are NOT considered abnormal and are NOT required to be recorded

Bent, twisted, fractured, and/or deformed bolts, studs, nuts, or washers.

Missing bolts, studs, nuts, or washers,

Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate degradation of the bolted connection.

NOTE: Conditions, such as fabrication marks, scratches, surface abrasion, material roughness, and any other conditions acceptable by the material, design, and manufacturing specification are NOT considered abnormal and are NOT required to be recorded

Remarks: BOLTING LEAKS ON CRD 06-19, CRD 06-35, CRD 06-39, CRD* 22-43, CRD* 26-23, CRD* 30-15 *Bolting is new - no degradation. Δ - Light rust film on head on bolting - no degradation.

QC Examiner Kusky 3/18/01



ANTH
R. BUSEW
M
3/2/01

Attachment 1
Sheet 1 of 1

GENERAL VISUAL EXAMINATION DATA SHEET

For Class 1 Pressure Retaining Bolting HB

Component: SEE LIST BELOW Exam Date: 3-18-01 ¹⁹ 3/23/01

Exam Method: Direct Remote

Check the following applicable examination attributes:

The "as-found" condition was found to be acceptable.

Recordable Conditions:

Localized corrosion and/or pitting that visually appears to have REDUCED the bolt or stud cross-section or REDUCED the material thickness of the affected component. NOTE: General corrosion and light surface pitting are NOT considered abnormal and are NOT required to be recorded

Bent, twisted, fractured, and/or deformed bolts, studs, nuts, or washers.

Missing bolts, studs, nuts, or washers,

Other conditions (e.g., gouges, excessive wear, corrosion staining emerging from the connection) which may indicate degradation of the bolted connection.

NOTE: Conditions, such as fabrication marks, scratches, surface abrasion, material roughness, and any other conditions acceptable by the material, design, and manufacturing specification are NOT considered abnormal and are NOT required to be recorded

Remarks: 2-C12 LPRM (28-13, 44-37, 36-45) FLANGE
LEAKAGE 2-C51-N002D IRM FLANGE LEAKAGE

QC Examiner

Samuel W. [Signature]



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ATTACHMENT 2
Sheet 1 of 1
INTEGRITY DISPOSITION DATA SHEET
FOR CLASS 1 PRESSURE RETAINING BOLTING

OPT-80.1 RPV Leakage Test Bolted Connection Leakage Evaluation Data Sheet

Refueling outage: B215R1 Date: 18March2001 OPT-80.1 Attachment 1, Figure 4 page 7

1. Location and description of Bolted Connection Leakage:
2-B32-F031B, Recirc Loop B, Discharge Valve; RB2, EI 015, DW Az 291
The valve was observed leaking 1/8" steady stream from the body to bonnet bolted connection.
(See attach the General Visual Examination Data Sheet)
2. Other References (P&ID, system drawings, vendor foreign prints etc):
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. The number and service age of the bolts
28 studs and nuts greater than 10 years old
4. Bolt and component material
Body to bonnet studs A193 grade B7
Bonnet nuts A194 grade 8
VALVE BODY / BONNET A-351 GRADE CF8 *W/ 2/2/01*
5. Corrosiveness of the process fluid that is leaking:
The corrosiveness of the reactor coolant is described in the Evaluation section of ESR 01-00010.
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 at the connection or other system components
2-B32-F031B body to bonnet leak the last three hydros.

Evaluation:

The 2-B32-F031B valve was observed leaking 120 drops per minute during the RPV leakage test. The bolted connection General Visual Inspection data sheet found no reportable indications. This valve historically has seen a steady 1/8 inch stream of leakage during the last three leakage tests, 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. No corrective actions are required at this time.

Based on the review performed, the leaking bolted connection is not predicted to fail during the next refueling cycle from bolting corrosion resulting in loss of structural integrity of the mechanical joint.

Responsible Engineer: *U.R.P.* Date: 3/21/2001



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ATTACHMENT 2
Sheet 1 of 1
INTEGRITY DISPOSITION DATA SHEET
FOR CLASS 1 PRESSURE RETAINING BOLTING

OPT-80.1 RPV Leakage Test Bolted Connection Leakage Evaluation Data Sheet

Refueling outage: B215R1 Date: 19MARCH2001 OPT-80.1 Figure 58, Page 73 and 74

1. Location and description of Bolted Connection Leakage:

- 2-B11-LPRM(28-13), LPRM Assembly, RB2, E1 023, Undervessel, 25 DPM
- 2-B11-LPRM(44-37), LPRM Assembly, RB2, E1 023, Undervessel, 24 DPM
- 2-B11-LPRM(36-45), LPRM Assembly, RB2, E1 023, Undervessel, 60 DPM
- 2-C51-N002D-IRM, IRM Assembly, RB2, E1 023, Undervessel, 60 DPM

(See attached General Visual Examination Data Sheet)

2. Other References (P&ID, system drawings, vendor foreign prints etc):
GE Dwg 729E946 (FP 5361), OSPP-FH-501

3. The number and service age of the bolts

4 cap screws required for each flanged connection. LPRM 44-37 and 36-45 were replaced during the B215R1 outage; however, the replacement procedure does not require detensioning of the flange bolts.

The service age of the bolts is greater than 10 years, p8d

4. Bolt and component material

Cap screws were SA-193 Grade B7 as originally supplied by GE.

3/23/01

Flange material is SA182, F304.

There are no nuts installed in this designed use of cap screws. The fasteners thread directly into the reactor Vessel Instrument flange housings in a blind threaded hole.

5. Corrosiveness of the process fluid that is leaking:

The corrosiveness of the reactor coolant is described in the Evaluation section of ESR 01-0001079.

*p8d
3/23/01*

6. System function of the leaking bolted connection

Reactor Coolant pressure retaining boundary. LPRM and SRM/IRM assemblies provide continuous neutron monitoring of the reactor core.

7. Leakage history at the connection or other system components

None of the bolted connections listed above have previously exhibited leakage during performance of RPV leak tests since 1991. However, leakage at other similar locations has been observed. Of the 43 total LPRM and SRM/IRM assemblies in Unit 2, only one has been previously observed leaking (in 1991)

Evaluation:

The LPRM and IRM assemblies identified above exhibited leaking at rates of 24 to 60 drops per minute during the RPV leakage test. The General Visual Inspection is limited to only the top of the assembly cap screw since the assembly is fastened to the RPV flange using blind threaded holes. Inspection of the cap screw transition zone between the head and the shank of the bolt which is the most sensitive to pitting and corrosion cannot be performed unless the cap screw is removed. The General Visual Inspection performed indicated no degradation.

Based on the review performed, the leaking bolted connection is not predicted to fail during the next refueling cycle from bolting corrosion resulting in loss of structural integrity of the mechanical joint.

Reviewer: _____

Phillip Gore

Date: _____

3/23/01



ATTACHMENT 3

Attachment 3 Deleted, Not Used

Attachment 6

Sheet 1 of 2

OPT-80.1, B215R1 RPV Hydro Leakage Results Inside Drywell (18March2001)

COMPONENT	NATURE OF LEAK	LEAKAGE RATE (dpm)	CORRECTIVE ACTION
2-B21-F022B	Packing	20 dpm	Adjust packing. (WO 129460)
2-B21-F022D	Packing	50 dpm	Adjust packing. (WO 129460)
2-E11-F050A	Packing	150-200 dpm	Corrective action required. (WO 129460)
2-B32-F031B	Body to Bonnet	1/8" Steady stream	No corrective action required. Should seal on system heatup.
2-E41-V173	Packing	120 dpm	Corrective action required. (WO 129460)
2-E11-F009	Packing	7 dpm	Acceptable leakage per criteria.
Drain Valve pipe cap downstream of 2-E11-V116	Pipe Cap	3 dpm	Tightened under tool pouch.
2-B11-CRD (06-19)	Flange	200 dpm	Corrective action required. (WO129460)
2- B11-CRD (06-35)	Flange	10 dpm	Acceptable leakage per leakage criteria.
2- B11-CRD (06-39)	Flange	Steady stream.	Corrective action required. (WO129460)
2- B11-CRD (22-43)	Flange	200 – 300 dpm	Corrective action required. (WO129460)
2- B11-CRD (26-23)	Flange	120 dpm	Corrective action required. (WO129460)
2- B11-CRD (30-15)	Flange	Steady stream.	Corrective action required. (WO129460)
2-B11-LPRM (44-37)	Flange	30 dpm.	Corrective action required. (WO 130139)

* Recommended prior to Unit 2 startup.

** Re-inspect in accordance with PT 80.2.

*** Insignificant leakage. Expected to seal during plant heatup.

**Attachment 6
Sheet 2 of 2**

OPT-80.1, B215R1 RPV Hydro Leakage Results Outside Drywell (18March2001)

COMPONENT	NATURE OF LEAK	LEAKAGE RATE (dpm)	CORRECTIVE ACTION
2-B21-F028A	Packing	40 dpm	Adjust packing. (WO 129460)
2-B21-F028A	Body to Bonnet	2 dpm	Acceptable leakage per leakage criteria.
2-B21-F028B	Packing	20 dpm	Adjust packing. (WO 129460)
2-B21-F028C	Packing	5 dpm	Acceptable leakage per leakage criteria.
2-B21-F028C	Body to Bonnet	5 dpm	Acceptable leakage per criteria.
2-B21-F028D	Packing	20 dpm	Adjust packing. (WO 129460)
2-B21-V56	Packing	1 dpm	Acceptable leakage per leakage criteria.
2-B21-F025B	Packing	1 dpm	Acceptable leakage per leakage criteria.
2-B21-V107*****	Packing	40 dpm	Adjust packing. (WO 129460)
2-E21-F004B*****	Packing	1 dpm	Acceptable leakage per leakage criteria.

* Recommended prior to Unit 2 startup.

** Re-inspect in accordance with PT 80.2.

*** Insignificant leakage. Expected to seal during plant heatup.

**** Reported as damp. Leakage insignificant.

*****Outside test boundary.

Attachment 1
 Screening Criteria Checklist

Identification No. 01-0207 BNP HNP RNP Revision 0

Implementing Document No. ESR 01-00010 Revision 0

Implementing Activity Description:

The scope of this ESR is to (1) evaluate the pressure retaining bolted connections that have routinely leaked during the last two pressure tests and (2) establish corrective action guidelines for identified leakage at bolted connections during the performance of OPT-80.1 during the B215R1 outage. The purpose of this ESR is to ensure compliance with the applicable requirements specified in the ASME Section XI Code, 10 CFR 50.55a, and Relief Request #17. This evaluation is bounded by a previous evaluation # 00-0544. Evaluation 00-0544 was for Unit 1 and this evaluation is for Unit 2. The references for Unit 2 were checked and found to support the conclusion that 00-0544 bounds ESR 01-00010.

1.a. Is the proposed activity fully bounded by a previously completed screen or evaluation which was performed in accordance with REG-NGGC-0002? YES NO
 If "Yes," obtain an identification number for the previously completed screen, if needed, document the identification number of the screen or evaluation below, attach a copy of the bounding screen/evaluation to this screen, skip the remaining screen questions, and complete document distribution and the required signatures as specified on sheet 3. Ensure the bounding screen/evaluation being utilized is the most current revision of the screen/evaluation.

1.b. Does a previously completed evaluation, performed prior to implementation of REG-NGGC-0002, exist which fully addresses questions 2 and 3 below? YES NO
 If "Yes," obtain an identification number if necessary, document the identification number below, attach a copy of the bounding evaluation to this screen, skip to screen question 4, complete the remaining screen questions, and complete document distribution and the required signatures on sheet 3. Ensure the bounding screen/evaluation being utilized is the most current revision of the screen/evaluation.

1.c. Has the proposed activity been formally approved in an NRC SER or SE? YES NO
 If "Yes" and the proposed activity is described in an NRC SER, SE, or other regulatory correspondence, list the reference below, attach a copy of the reference, skip to screen question 4, complete the remaining screen questions, and complete the Distribution Determination and the required signatures on sheet 3.
 Bounding Evaluation Reference: 00-0544
 If the answers to the above questions are "No", complete the remaining screen questions.

2. Is a change to the Technical Specifications or Operating License necessary to implement the proposed activity? YES NO
 Justification and References:
 If "Yes", this activity shall not be implemented without prior PNSC and NAS reviews, and NRC approval. Complete the screen in addition to processing a TS or OL change. Refer to AP-029 [RNP], OAP-019 [BNP], or AP-009 [HNP], for further processing requirements. If "No", provide justification and references and answer the remaining screen questions.

3. Does the proposed activity constitute one of the following changes: YES NO
 A change to the facility as described in the SAR
 A change to procedures as described in the SAR
 A special test or experiment not described in the SAR
 If the answer provided to any part of question 3 is "Yes", ensure completion of Attachment 3. If the answers to question 3 are "No", provide justification and references. Continue answering the remaining screen questions.

Attachment 1
Screening Criteria Checklist *Rev. 0*

Identification No. 00-0544 BNP HNP RNP Revision 0

Implementing Document No. ESR 99-00418 Revision 0

References: Technical Specifications 3.1.3, 3.4.1, 3.4.4, 3.4.5, 3.6.1.3, 3.10.1, B3.4.4, B3.6.1.3, & B3.10; UFSAR sections 5.2.4; and TRM 3.14 & 5.5.14.

3. Does the proposed activity constitute one of the following changes:
- | | <u>YES</u> | <u>NO</u> |
|---|--------------------------|-------------------------------------|
| A change to the facility as described in the SAR | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| A change to procedures as described in the SAR | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| A special test or experiment not described in the SAR | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If the answer provided to any part of question 3 is "Yes," ensure completion of Attachment 3. If the answers to question 3 are "No," provide justification and references. Continue answering the remaining screen questions.

Justification and references: ESR 99-00418 evaluates the pressure retaining bolted connections that have routinely leaked during the last two Unit 1 OPT-80.1 pressure tests. In addition, this ESR establishes corrective action guidelines for identified leakage at bolted connections during the performance of this pressure test. As such, the issuance of this ESR will not alter the function or configuration of any plant structure, system, or component described in the UFSAR. For this reason, the approval and issuance of this ESR will not involve a change to the facility as described in the UFSAR.

Approval and implementation of this revision will not alter the requirements specified in sections 5.2.4 or 5.2.5 of the UFSAR. As stated earlier, this ESR is written to assure compliance with the applicable requirements specified in the ASME Section XI Code, Relief Request #17, and 10 CFR 50.55a. Therefore, the implementation of this ESR will not alter any existing procedures described in referenced UFSAR sections.

ESR 99-00418 will not direct the performance of any activity that will affect a plant structure, system or component. As such, the implementation of this ESR will not introduce any new testing or experiment not described in the UFSAR.

References: UFSAR sections 5.2, 5.3, 5.2.4, 5.2.5, 5.4.1, & 5.4.5; ASME Section XI Code; 10 CFR 50.55a, Relief Request #17, and Letter from the NRC, Brunswick Steam Electric Plant, Unit Nos. 1 and 2 - In-service Inspection Program - Third 10-Year Interval - Evaluation of Requests for Relief Nos. RR-1 Through RR-25 (TAC Nos. MA2108 and MA2109), Dated February 17, 2000

NOTE: If FSAR/UFSAR changes are needed as a result of the proposed activity, refer to procedures AP-603 [HNP], AP-021 [RNP], OAP-024 [BNP].

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Page 33
Revision 0

Attachment 1
Screening Criteria Checklist

Identification No. 00-0544 BNP HNP RNP Revision 0
Implementing Document No. ESR 99-00418 Revision 0

11. Does the proposed activity involve a change in thermal or chemical effluents or involve a significant change to land use that could impact the environment? YES NO

If "Yes" and a previously completed evaluation does not exist which fully bounds this change, complete Attachment 11 [BNP].

If "Yes" and a previously completed evaluation exists which fully bounds this change, then document the previous evaluation's identification number.

Continue answering the remaining questions.

12. Does the proposed activity involve a major change to a Radwaste Treatment System that could potentially cause a deviation from the type or quantity of radioactive effluent released (ref. OE&RC-2015)? YES NO

If "Yes," refer to the indicated plant procedure for disposition. Continue answering the remaining questions.

13. Does the proposed activity impact, or have the potential to impact, the Technical Specification Bases or the Technical Requirements Manual? YES NO

If "Yes," process a Technical Specification Bases change in accordance with OAP-19 or a TRM change in accordance with the TRM.

The information sources used in determining the answers to the above may be documented in the appropriate spaces provided.

Attach this screen any completed evaluations to the document package for the change or activity being evaluated.

Preparer: Joseph W. Croce / Amy W. Gil (Print/Sign) Date: 3/19/00

Reviewer: (Signature) / (Signature) (Print/Sign) Date: 3/19/00

Interdiscipline Review (if required): _____ Date: _____
Discipline/Print Name/Signature

Interdiscipline Review (if required): _____ Date: _____
Discipline/Print Name/Signature

Interdiscipline Review (if required): _____ Date: _____
Discipline/Print Name/Signature

Supervisor: J. McIntyre / J. McIntyre (Print/Sign) Date: 03/21/00

Distribution Determination: Yes No

If an unreviewed safety question determination will be performed to complete this evaluation or if credit is being taken for a previously approved unreviewed safety question determination, indicate "Yes" in the block provided.

ATTACHMENT 8

ESK 01-00010

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