



Carolina Power & Light Company

Brunswick Nuclear Plant
P.O. Box 10429
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MAR 22 1994

SERIAL: BSEP 94-0115
10 CFR 50.73

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
LICENSEE EVENT REPORT 1-94-005

Gentlemen:

The purpose of this submittal is to provide the NRC staff with a voluntary License Event Report relative to Carolina Power & Light Company's Brunswick Steam Electric Plant, Units 1 and 2. This report is being submitted in accordance with the format set forth in NUREG-1022, September 1983.

Please refer any questions regarding this submittal to Mr. R. Lopriore at (910) 457-2212.

Very truly yours,

J. Cowan
Director-Site Operations (acting)
Brunswick Nuclear Plant

KAH/

Enclosures

1. Licensee Event Report
2. Summary of Commitments

cc: Mr. S. D. Ebnetter, Regional Administrator, Region II
Mr. P. D. Milano, NRR Senior Project Manager - Brunswick Units 1 and 2
Mr. R. L. Prevatte, Brunswick NRC Senior Resident Inspector

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)
Brunswick Steam Electric Plant, Unit 1

DOCKET NUMBER (2)
05000325

PAGE (3)
1 of 4

TITLE (4)
Potential Use of Less-Conservative Pressure-Temperature Limits Curves

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
02	17	94	94	- 05 -	00	03	21	94	BSEP Unit 2	05000324
									BSEP Unit 2	05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)								
		<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)					
POWER LEVEL (10)	100	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)					
		<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER					
		<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	(Specify in Abstract and Text)					
		<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
		<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)						

LICENSEE CONTACT FOR THIS LER (12)

NAME
Tony Harris, Senior Licensing Specialist

TELEPHONE NUMBER
(910) 457-3312

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
			07	01	94

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single space typewritten lines) (16)

This voluntary report is being issued to provide the NRC staff with information relative to apparently switched Technical Specification Pressure-Temperature Limits Curves for Brunswick Units 1 and 2 (Technical Specification Figures 3.4.6.1-1, 3.4.6.1-2, and 3.4.6.1-3b), resulting in the potential use of less-conservative curves on Unit 1 during past heat-up/cooldown evolutions. The issue was raised following removal of a surveillance capsule from the Unit 1 reactor vessel during the recently completed Unit 1 refuel outage. Apparent cause of the switched curves was due to inadequate review of design information during development of the GE NEDO documents used as the basis of the Pressure-Temperature Limits Curves. The preliminary cause classification for this event per the criteria of NUREG-1022 is personnel error. Interim corrective actions include implementing the use of the more conservative Unit 2 curves for both Unit 1 and Unit 2 and reviewing past heat-up/cooldown data. An initial assessment of the switched curves indicates that no significant safety concern exists with past operation using the Technical Specification Unit 1 curves. This voluntary report will be supplemented prior to Unit 2 startup from the upcoming B211R1 refuel outage, following verification of the Unit 2 vessel nameplate data.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20585-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

TITLE

Potential Use of Less-Conservative Pressure-Temperature Limits Curves

INITIAL CONDITIONS

Unit 1 and Unit 2 are currently operating at 100% reactor power.

EVENT NARRATIVE

On August 17, 1993, during the recently completed Unit 1 outage, a surveillance capsule was removed from the Unit 1 reactor pressure vessel (RPV) for metallurgical analysis. This capsule was the first capsule removed for either Brunswick unit. General Electric Company (GE) was contracted to perform the testing on the capsule. GE informed CP&L on February 17, 1994, that they believed the capsule being examined should have been located in the Unit 2 vessel.

CP&L immediately began an investigation of this issue. Preliminary results indicate that the surveillance capsule provided to GE was indeed the correct capsule for the Unit 1 vessel; however, further review of the NEDO documents which form the basis of the Technical Specification Pressure-Temperature Limits (PTL) curves indicates that the Unit 1 PTL curves are based on Unit 2 vessel material data and the Unit 2 PTL curves are based on Unit 1 vessel material data. As a result, Unit 1 may have operated in the past with less-conservative PTL curves.

An Adverse Condition Report (ACR) was initiated to document this potential concern. The ongoing investigation is focusing on three main aspects:

1. Researching reactor vessel fabrication and site turnover records to determine if a documentation error did occur.
2. Reviewing heatup and cooldown records to determine compliance with Technical Specifications. These reviews are focusing on Unit 1 data, since the Unit 2 curves provide more conservative operating parameters.
3. Determining additional corrective actions, if necessary.

Review of reactor fabrication history and site turnover records is continuing. Based on review to date, it appears that the GE NEDO documents are reversed. Review of the heatup and cooldown records is also continuing. Initial reviews indicate one Unit 1 hydrostatic test (conducted January 24, 1991) which would have been outside the more conservative Unit 2 Technical Specification PTL curves. The test exceeded the limits of the more conservative Unit 2 curves by 1 to 2 degrees for a period of two and one-half hours; however, no safety limits were exceeded.

CAUSE OF EVENT

Unit 2 was the first reactor constructed at the Brunswick site. General Electric had designated equipment for this unit as Carolina I. The Unit 1 equipment was designated as Carolina II. These GE "Carolina" designations were employed for designating

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

fabrication/shipping sequences for materials/components at the GE Brunswick project.

Two vessels were constructed for the Brunswick project by Chicago Bridge & Iron (CB&I); Carolina I (CB&I Contract #2471) and Carolina II (CB&I Contract #2472). The Carolina I vessel was originally intended to be installed in Unit 2, and the Carolina II vessel installed in Unit 1. CB&I also fabricated surveillance specimens for each of the vessels. The surveillance specimens were installed into surveillance baskets and designated as G1, G2, and G3 for Carolina I (#2471) vessel and G4, G5, and G6 for the Carolina II (#2472) vessel. The specimens were marked with a binary code representing "38" for Carolina I and "39" for Carolina II.

In 1971, a decision was made to set the Carolina II (#2472) vessel in Brunswick 2 and Carolina I (#2471) vessel in Unit 1. In order to accommodate this change, a Field Disposition Instruction (FDI) was issued, directing site personnel to install the surveillance baskets G1, G2, and G3 into vessel # 2471 and G4, G5, and G6 baskets into vessel #2472, consistent with fabrication records.

The capsule removed from Unit 1 in August, 1993, was G1, with a binary code "38", representing the Carolina I vessel (#2471); however, the GE NEDO documents used as the basis of the current Technical Specification PTL curves incorrectly indicate that Vessel #2471 is in Unit 2 and #2472 is in Unit 1; therefore, GE believed that the G1 capsule, which is associated with vessel #2471, should have come from Unit 2. Preliminary review of this issue indicates that the cause of this event was inadequate review of the design documentation used in the development of the GE NEDO documents.

CORRECTIVE ACTIONS

Immediate corrective actions included the following:

1. Initiation of an ACR to document the concern and identify further corrective actions needed.
2. Issuance of a memorandum on 2/23/94 to the Brunswick Operations Managers from the Technical Support Manager recommending that until the investigation is complete, both Brunswick units be operated to the more conservative Unit 2 Technical Specification PTL curves. A Standing Instruction was issued to implement this recommendation.
3. Performance of an initial safety significance review to ensure that no significant safety issue exists with respect to the potential operation of Unit 1 with less-conservative PTL curves.
4. Development of an Action Plan to ensure the appropriate issues are addressed in a timely manner.

Further corrective actions are being identified as the reviews are completed. These actions include verification of the installed vessels by visual examination of the nameplate data on the Unit 2 vessel and performance of a final safety assessment of the issue following review of plant operating data. The nameplate verification will take place after shutdown of Unit 2 for the upcoming outage, currently planned to begin March 25, 1994. A supplement to this report, including corrective actions and date of completion, will be submitted prior to Unit 2 startup from the upcoming refuel outage.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

SAFETY ASSESSMENT

An initial safety assessment of this issue has been completed by GE. This assessment involved a review of the conservatisms involved in the calculations for the PTL curves, and a comparison of the Unit 1 and Unit 2 PTL curves to determine whether any significant differences exist between the curves. Based on this initial safety assessment, no significant safety issue has resulted from the switched curves.

A final safety assessment will be completed following review of plant operating data.

PREVIOUS SIMILAR EVENTS

No previous similar events involving switched unit design information have been identified at this time; however, the investigation is continuing.

Enclosure 2
Summary of Commitments

The following table identifies those actions committed to by Carolina Power & Light Company in this document. Any other actions discussed in the submittal represent intended or planned actions by Carolina Power & Light Company. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager-Regulatory Affairs at the Brunswick Nuclear Plant of any questions regarding this document or any associated regulatory commitments.

Commitment	Committed date or outage
1. Perform a final safety assessment of the switched PTL curve issue.	B211R1
2. Verify installed reactor pressure vessels by visual examination of the nameplate data on the Unit 2 vessel.	B211R1
3. Submit a supplement to LER 1-94-05 prior to Unit 2 startup from the upcoming refuel outage.	B211R1