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SERIAL: BSEP 96-0051

February 13, 1996

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
RESPONSE TO THE NRC GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL
BINDING OF SAFETY-RELATED POWER-OPERATED GATE VALVES"

Gentlemen:

On August 17, 1995, the NRC issued Generic Letter 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves." In our December 6, 1995, submittal (Serial: BSEP 95-0619), CP&L agreed to provide within 180 days from the date of the generic letter, a summary of the valves identified as susceptible to pressure locking or thermal binding and a schedule for corrective actions. The remainder of the 180 day requested information will be submitted prior to April 26, 1996. The following enclosures, provide CP&L's response.

Please refer any questions regarding this letter to Mr. George Honma at (910) 457-2741.

Sincerely,

William R. Campbell

GMT/gmt

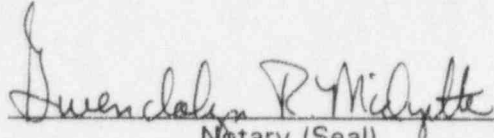
Enclosure:

1. Response
2. Applicability Screen
3. Susceptibility Screen
4. Summary of Proposed Corrective Actions
5. Prior Related Modifications
6. List of Regulatory Commitments

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William R. Campbell, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, and agents of Carolina Power & Light Company.


Notary (Seal)

My commission expires: 8/12/96

cc: Mr. S. D. Ebnetter, NRC Regional Administrator, Region II
Mr. C. A. Patterson, NRC Senior Resident Inspector - Brunswick Plant
Mr. D. C. Trimble, Jr., NRR Project Manager - Brunswick Plant
The Honorable H. Wells, Chairman - North Carolina Utilities Commission

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 NRC DOCKET NOS. 50-325 & 50-324 OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO THE NRC GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL BINDING OF SAFETY-RELATED POWER-OPERATED GATE VALVES "

Requested Actions

NRC 180-Day Requested Information

Generic Letter 95-07 requested that a summary description of the following information be submitted within 180 days of the date of the Generic Letter:

1. *The susceptibility evaluation of operational configurations performed in response to (or consistent with) 180-day Requested Action 1, and the further analysis performed in response to (or consistent with) 180-day Requested Action 2, including the bases or criteria for determining that valves are or are not susceptible to pressure locking or thermal binding;*
2. *The results of the susceptibility evaluation and the further analyses referred to in 1 above, including a listing of the susceptible valves identified;*
3. *The corrective actions, or other dispositioning, for the valves identified as susceptible to pressure locking or thermal binding, including: (a) equipment or procedural modifications completed and planned (including the completion schedule for such actions); and (b) justification for any determination that particular safety-related power-operated gate valves susceptible to pressure locking or thermal binding are acceptable as is.*

CP&L Response

In our December 6, 1995, submittal (Serial: BSEP 95-0619), CP&L agreed to provide within 180 days from the date of the generic letter, a summary of the valves identified as susceptible to pressure locking or thermal binding and a schedule for corrective actions. The remainder of the 180 day requested information will be submitted prior to April 26, 1996.

The criteria for determining susceptibility to pressure locking or thermal binding are provided in CP&L's Nuclear Engineering Department, Chief Engineering Section Program Document MECH-002. They are summarized as follows:

Criteria for Determining Potential Susceptibility to Pressure Locking

1. Solid wedge gate valves are considered not susceptible to pressure locking and no further screening is required.

2. Other types of gate valves, such as double-disc and flex-wedge, are potentially susceptible to pressure locking. If a valve is provided with a pressure locking mitigating feature, such as a hole drilled in the disc, no further screening is required.
3. Valves other than solid wedge gate valves, or those with pressure locking mitigating features, may be susceptible to hydraulically induced pressure locking. This may occur if a mechanism exists to trap high pressure within the bonnet of a valve, followed by de-pressurization of the connected piping. The mechanism of pressure entrapment may be the result of a LOCA, a pump trip, reactor de-pressurization, or a hydrostatic test.
4. Valves other than solid wedge gate valves, or those with pressure locking mitigating features, may be susceptible to thermally induced pressure locking. This may occur if water within the bonnet cavity is heated while the valve is closed. Heating may occur by conduction or convection through connecting piping, or heat may be applied from the environment around the valve. Valves where the process medium is a compressible fluid other than steam are not susceptible to thermally-induced pressure locking.

Criteria for Determining Potential Susceptibility to Thermal Binding

1. Solid wedge gate valves and flex-wedge gate valves are considered potentially susceptible to thermal binding. Double-disc gate valves are not susceptible to thermal binding.
2. If a valve is procedurally controlled to mitigate the effects of thermal binding, no further review is required.
3. If the maximum operating temperature of a valve does not exceed 200°F, it is considered to be not susceptible to thermal binding.
4. If a solid wedge gate valve cools no more than 50°F after closure, or the differential temperature across the valve is no more than 50°F, then the valve is not considered susceptible to thermal binding.
5. If a flex-wedge gate valve cools no more than 100°F after closure, or the differential temperature across the valve is no more than 100°F, then the valve is not considered susceptible to thermal binding.

CP&L's Brunswick Steam Electric Plant, Unit Nos. 1 and 2 has implemented the requested actions of Generic Letter 95-07 as described in the attached enclosures:

ENCLOSURE 2
 BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
 NRC DOCKET NOS. 50-325 & 50-324
 OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO THE NRC GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL BINDING OF
 SAFETY-RELATED POWER-OPERATED GATE VALVES "

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
1-B21-F016 [1]	MSL DRAIN INBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
1-B21-F019 [1]	MSL DRAIN OUTBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
1-B32-F031A	RECIRC PUMP A DISCHARGE VALVE	DOUBLE	28	600	DARLING	MOV	SB-2	LIMITORQUE	CLOSE	NO	NO
1-B32-F031B	RECIRC PUMP B DISCHARGE VALVE	DOUBLE	28	600	DARLING	MOV	SB-2	LIMITORQUE	CLOSE	NO	NO
1-B32-F032A	RECIRC PUMP A DISCHARGE BYPASS VALVE	DOUBLE	4		DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	NO	NO
1-B32-F032B	RECIRC PUMP B DISCHARGE BYPASS VALVE	DOUBLE	4		DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	NO	NO
1-B32-V14	RECIRC PUMP 1A SEAL STAGING VALVE	SOLID	3/4	600	VELAN	AOV	36RN122 SP184	K-M	REMAIN OPEN	NO	NO
1-B32-V17	RECIRC PUMP 1B SEAL STAGING VALVE	SOLID	3/4	600	VELAN	AOV	36RN122 SP184	K-M	REMAIN OPEN	NO	NO
1-E11-F007A	RHR MINIMUM FLOW BYPASS VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/ CLOSE	YES	YES
1-E11-F007B	RHR MINIMUM FLOW BYPASS VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/ CLOSE	YES	YES
1-E11-F008	SHUTDOWN COOLING OUTBOARD SUCTION ISOLATION VALVE	FLEX	20	600	ANCHOR-DARLING	MOV	SB-3	LIMITORQUE	CLOSE	YES	NO
1-E11-F009	SHUTDOWN COOLING INBOARD SUCTION ISOLATION VALVE	FLEX	20	600	ANCHOR-DARLING	MOV	SB-2	LIMITORQUE	CLOSE	YES	NO

[1] These were originally flex-wedge gate valves and were replaced with double-disc gate valves as a result of a prior thermal binding review.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
1-E11-F011A	RHR HEAT EXCHANGER 1A DRAIN TO SUPPRESSION POOL VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
1-E11-F011B	RHR HEAT EXCHANGER 1B DRAIN TO SUPPRESSION POOL VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
1-E11-F015A (2)	LPCI INBOARD INJECTION VALVE	FLEX	24	900	ANCHOR-DARLING	MOV	SB-4	LIMITORQUE	OPEN	YES	YES
1-E11-F015B (2)	LPCI INBOARD INJECTION VALVE	FLEX	24	900	ANCHOR-DARLING	MOV	SB-4	LIMITORQUE	OPEN	YES	YES
1-E11-F028A	SUPPRESSION POOL DISCHARGE ISOLATION VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	OPEN/ CLOSE	YES	YES
1-E11-F028B	SUPPRESSION POOL DISCHARGE ISOLATION VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	OPEN/ CLOSE	YES	YES
1-E11-F040	RHR TO RADWASTE OUTBOARD ISOLATION VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
1-E11-F047A (3)	RHR HEAT EXCHANGER 1A INLET VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	REMAIN OPEN	YES	NO
1-E11-F047B (3)	RHR HEAT EXCHANGER 1B INLET VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	REMAIN OPEN	YES	NO

[2] The high-pressure discs in these valves were drilled as a result of a prior pressure locking review.

[3] These valves are not within the scope of GL 95-07, but were evaluated at the discretion of the PLTB review group.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
1-E21-F004A	CORE SPRAY OUTBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
1-E21-F004B	CORE SPRAY OUTBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
1-E21-F005A [4]	CORE SPRAY INBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
1-E21-F005B [4]	CORE SPRAY INBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
1-E21-F031A	CORE SPRAY MINIMUM FLOW BYPASS VALVE	FLEX	3	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/ CLOSE	YES	YES
1-E21-F031B	CORE SPRAY MINIMUM FLOW BYPASS VALVE	FLEX	3	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/ CLOSE	YES	YES
1-E41-F001 [5]	HPCI TURBINE STEAM SUPPLY VALVE	DOUBLE	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
1-E41-F002 [5]	STEAM SUPPLY INBOARD ISOLATION VALVE	DOUBLE	10	600	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	CLOSE	YES	NO
1-E41-F003 [5]	STEAM SUPPLY OUTBOARD ISOLATION VALVE	DOUBLE	10	600	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	CLOSE	YES	NO
1-E41-F004	CONDENSATE STORAGE TANK SUCTION VALVE	FLEX	16	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
1-E41-F006 [5]	HPCI INJECTION VALVE	DOUBLE	14	900	ANCHOR-DARLING	MOV	SB-2	LIMITORQUE	OPEN	YES	YES
1-E41-F011	REDUNDANT ISOLATION TO CONDENSATE STORAGE TANK VALVE	FLEX	10	900	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	CLOSE	YES	NO

[4] The high-pressure discs in these valves were drilled as a result of a prior pressure locking review.

[5] These were originally flex-wedge gate valves. They were replaced with double-disc gate valves as a result of a prior thermal binding review. Also, holes were drilled in the high-pressure discs of the HPCI Turbine Steam Admission Valve and the HPCI Injection Valve as a result of a prior pressure locking review.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
1-E41-F025	HPCI COND PUMP DISCH OUTBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
1-E41-F026	HPCI COND PUMP DISCH INBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
1-E41-F041	SUPPRESSION POOL SUCTION VALVE	FLEX	16	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES
1-E41-F042	SUPPRESSION POOL SUCTION VALVE	FLEX	16	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES
1-E51-F004	RCIC COND PUMP DISCH INBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
1-E51-F005	RCIC COND PUMP DISCH OUTBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
1-E51-F007	RCIC STEAM SUPPLY INBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
1-E51-F008	RCIC STEAM SUPPLY OUTBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
1-E51-F010	CONDENSATE STORAGE TANK SUCTION VALVE	FLEX	6	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN/CLOSE	YES	YES
1-E51-F013 [6], [7]	RCIC INJECTION VALVE	DOUBLE	4	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN/CLOSE	YES	YES
1-E51-F029 [7]	SUPPRESSION POOL SUCTION VALVE	FLEX	6	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES
1-E51-F031 [7]	SUPPRESSION POOL SUCTION VALVE	FLEX	6	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES

[6] This was originally a flex-wedge gate valve. It was replaced with a double-disc gate valve as a result of a prior thermal binding review. Also, a hole was drilled in the high-pressure disc as a result of a prior pressure locking review.

[7] RCIC is not a safety-related system. However, it has PRA significance, so these valves were included in the scope of the GL 95-07 review.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
1-G16-F003	DRYWELL FLOOR DRAIN INBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO
1-G16-F004	DRYWELL FLOOR DRAIN OUTBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO
1-G16-F019	DRYWELL EQUIPMENT DRAIN INBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO
1-G16-F020	DRYWELL EQUIPMENT DRAIN OUTBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO
1-G31-F001 [8]	RWCU INLET INBOARD ISOLATION VALVE	DOUBLE	6	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
1-G31-F004 [8]	RWCU INLET OUTBOARD ISOLATION VALVE	DOUBLE	6	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
1-RCC-V120 [9]	RBCCW INLET VALVE TO RWCU PRECOAT PUMP	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	NON-SAFETY	NO	NO
1-RCC-V54 [9]	DRYWELL EQUIPMENT DRAIN HX RBCCW INLET VALVE	SOLID	2	600	VELAN	AOV	60RN155 SP174	K-M	NON-SAFETY	NO	NO
1-RCC-V73 [9]	CRD PUMP 1B COOLING WATER INLET VALVE	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	NON-SAFETY	NO	NO
1-RCC-V74 [9]	CRD PUMP 1A COOLING WATER INLET VALVE	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	NON-SAFETY	NO	NO
1-RCC-V76 [9]	REACTOR BUILDING EQUIPMENT DRAIN HX INLET VALVE	SOLID	2	600	VELAN	AOV	60RN155 SP174	K-M	NON-SAFETY	NO	NO

[8] These valves have no safety function to open. However, the original flex-wedge gate valves were replaced with double-disc gate valves during a prior thermal binding review. Additionally, holes were drilled in the high-pressure discs as a result of a prior pressure locking review.

[9] These valves have no safety function to open. However, PLTB evaluations were performed at the discretion of the PLTB review group.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
2-B21-F016 [10]	MSL DRAIN INBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
2-B21-F019 [10]	MSL DRAIN OUTBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
2-B32-F031A	RECIRC PUMP A DISCHARGE VALVE	DOUBLE	28	600	DARLING	MOV	SB-2	LIMITORQUE	CLOSE	NO	NO
2-B32-F031B	RECIRC PUMP B DISCHARGE VALVE	DOUBLE	28	600	DARLING	MOV	SB-2	LIMITORQUE	CLOSE	NO	NO
2-B32-F032A	RECIRC PUMP A DISCHARGE BYPASS VALVE	DOUBLE	4		DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	NO	NO
2-B32-F032B	RECIRC PUMP B DISCHARGE BYPASS VALVE	DOUBLE	4		DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	NO	NO
2-B32-V14	RECIRC PUMP 2A SEAL STAGING VALVE	SOLID	3/4	600	VELAN	AOV	36RN122 SP184	K-M	REMAIN OPEN	NO	NO
2-B32-V17	RECIRC PUMP 2B SEAL STAGING VALVE	SOLID	3/4	600	VELAN	AOV	36RN122 SP184	K-M	REMAIN OPEN	NO	NO

[10] These were originally flex-wedge gate valves. They were replaced with double-disc gate valves as a result of a prior thermal binding review.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
2-CAC-CV-2698 [11]	CAC INERTING LN2 TANK VACUUM LINE VALVE	SOLID	3/4	150	GODDARD	AOV	J255	GODDARD	NON-SAFETY	NO	NO
2-CAC-CV-2713 [11]	CAD VAPORIZER A INLET VALVE	SOLID	3/4	150	GODDARD	AOV	J255	GODDARD	OPEN	YES	YES
2-CAC-CV-2714 [11]	CAD VAPORIZER B INLET VALVE	SOLID	3/4	150	GODDARD	AOV	J255	GODDARD	OPEN	YES	YES
2-CAC-CV-2715 [11]	CAD LOOP A/LOOP B CROSS-TIE VALVE	SOLID	3/4	150	GODDARD	AOV	J255	GODDARD	OPEN	YES	YES
2-CAC-CV-2716 [11]	CAD LOOP A/LOOP B CROSS-TIE VALVE	SOLID	3/4	150	GODDARD	AOV	J255	GODDARD	OPEN	YES	YES
2-CAC-CV-2889 [11]	INSTRUMENT AIR BACKUP FROM CAD SYSTEM ISV	SOLID	3/4	150	GODDARD	AOV	J255	GODDARD	OPEN	YES	YES
2-CAC-CV-2890 [11]	INSTRUMENT AIR BACKUP FROM CAD SYSTEM ISV	SOLID	3/4	150	GODDARD	AOV	J255	GODDARD	OPEN	YES	YES
2-CAC-CV-2981 [11]	AOG PURGE HX INLET VALVE	SOLID	3/4	150	GODDARD	AOV	NA	GODDARD	NON-SAFETY	YES	NO
2-CAC-V22 [12]	OUTBOARD SUPPRESSION POOL 2-INCH PURGE EXHAUST VALVE	SOLID	2	600	VELAN	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-CAC-V23 [12]	OUTBOARD DRYWELL 2-INCH PURGE EXHAUST VALVE	SOLID	2	600	VELAN	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO

[11] These valves are specially designed for cryogenic service. They have soft seats and are not expected to become thermally bound.

[12] These valves are not considered to be within the scope of GL 95-07. However, they were reviewed for PLTB based on their inclusion in EOPs. They are potentially susceptible to thermal binding if they are operated at conditions beyond their design bases.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
2-E11-F007A	RHR MINIMUM FLOW BYPASS VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/CLOSE	YES	YES
2-E11-F007B	RHR MINIMUM FLOW BYPASS VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/CLOSE	YES	YES
2-E11-F008	SHUTDOWN COOLING OUTBOARD SUCTION ISOLATION VALVE	FLEX	20	600	ANCHOR-DARLING	MOV	SB-3	LIMITORQUE	CLOSE	YES	NO
2-E11-F009	SHUTDOWN COOLING INBOARD SUCTION ISOLATION VALVE	FLEX	20	600	ANCHOR-DARLING	MOV	SB-2	LIMITORQUE	CLOSE	YES	NO
2-E11-F011A	RHR HEAT EXCHANGER 2A DRAIN TO SUPPRESSION POOL VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-E11-F011B	RHR HEAT EXCHANGER 2B DRAIN TO SUPPRESSION POOL VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-E11-F015A [13]	LPCI INBOARD INJECTION VALVE	FLEX	24	900	ANCHOR-DARLING	MOV	SB-4	LIMITORQUE	OPEN	YES	YES
2-E11-F015B [13]	LPCI INBOARD INJECTION VALVE	FLEX	24	900	ANCHOR-DARLING	MOV	SB-4	LIMITORQUE	OPEN	YES	YES
2-E11-F028A	SUPPRESSION POOL DISCHARGE ISOLATION VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	OPEN/CLOSE	YES	YES
2-E11-F028B	SUPPRESSION POOL DISCHARGE ISOLATION VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	OPEN/CLOSE	YES	YES
2-E11-F040	RHR TO RADWASTE OUTBOARD ISOLATION VALVE	FLEX	4	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-E11-F047A [14]	RHR HEAT EXCHANGER 2A INLET VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	REMAIN OPEN	YES	NO
2-E11-F047B [14]	RHR HEAT EXCHANGER 2B INLET VALVE	FLEX	16	300	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	REMAIN OPEN	YES	NO

[13] The high-pressure discs in these valves were drilled as a result of a prior pressure locking review.

[14] These valves are not within the scope of GL 95-07, but were evaluated at the discretion of the PLTB review group.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
2-E21-F004A	CORE SPRAY OUTBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
2-E21-F004B	CORE SPRAY OUTBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
2-E21-F005A [15]	CORE SPRAY INBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
2-E21-F005B [15]	CORE SPRAY INBOARD INJECTION VALVE	FLEX	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
2-E21-F031A	CORE SPRAY MINIMUM FLOW BYPASS VALVE	FLEX	3	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/CLOSE	YES	YES
2-E21-F031B	CORE SPRAY MINIMUM FLOW BYPASS VALVE	FLEX	3	300	ANCHOR-DARLING	MOV	SMB-000	LIMITORQUE	OPEN/CLOSE	YES	YES
2-E41-F001 [16]	HPCI TURBINE STEAM SUPPLY VALVE	DOUBLE	10	600	ANCHOR-DARLING	MOV	SB-1	LIMITORQUE	OPEN	YES	YES
2-E41-F002 [16]	STEAM SUPPLY INBOARD ISOLATION VALVE	DOUBLE	10	600	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	CLOSE	YES	NO
2-E41-F003 [16]	STEAM SUPPLY OUTBOARD ISOLATION VALVE	DOUBLE	10	600	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	CLOSE	YES	NO
2-E41-F004	CONDENSATE STORAGE TANK SUCTION VALVE	FLEX	16	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
2-E41-F006 [16]	HPCI INJECTION VALVE	DOUBLE	14	900	ANCHOR-DARLING	MOV	SB-2	LIMITORQUE	OPEN	YES	YES
2-E41-F011	REDUNDANT ISOLATION TO CONDENSATE STORAGE TANK VALVE	FLEX	10	900	ANCHOR-DARLING	MOV	SMB-1	LIMITORQUE	CLOSE	YES	NO

[15] The high-pressure discs in these valves were drilled as a result of a prior pressure locking review.

[16] These were originally flex-wedge gate valves. They were replaced with double-disc gate valves as a result of a prior thermal binding review. Also, holes were drilled in the high-pressure discs of the HPCI Turbine Steam Admission Valve and the HPCI Injection Valve as a result of a prior pressure locking review.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
2-E41-F025	HPCI COND PUMP DISCH OUTBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
2-E41-F026	HPCI COND PUMP DISCH INBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
2-E41-F041	SUPPRESSION POOL SUCTION VALVE	FLEX	16	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES
2-E41-F042	SUPPRESSION POOL SUCTION VALVE	FLEX	16	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES
2-E41-F075	TURBINE EXHAUST VACUUM BREAKER VALVE	SOLID	2	600	VELAN	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-E41-F079	TURBINE EXHAUST VACUUM BREAKER VALVE	SOLID	2	600	VELAN	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-E51-F004	RCIC COND PUMP DISCH INBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
2-E51-F005	RCIC COND PUMP DISCH OUTBOARD ISOL VALVE TO CRW	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	CLOSE	YES	NO
2-E51-F007	STEAM SUPPLY INBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
2-E51-F008	STEAM SUPPLY OUTBOARD ISOLATION VALVE	DOUBLE	3	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
2-E51-F010	CONDENSATE STORAGE TANK SUCTION VALVE	FLEX	6	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN/ CLOSE	YES	YES

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
2-E51-F013 [17], [18]	RCIC INJECTION VALVE	DOUBLE	4	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN/ CLOSE	YES	YES
2-E51-F029 [18]	SUPPRESSION POOL SUCTION VALVE	FLEX	6	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES
2-E51-F031 [18]	SUPPRESSION POOL SUCTION VALVE	FLEX	6	150	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	OPEN	YES	YES
2-E51-F062	TURBINE EXHAUST VACUUM BREAKER VALVE	SOLID	2	600	VELAN	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-E51-F066	TURBINE EXHAUST VACUUM BREAKER VALVE	SOLID	2	600	VELAN	MOV	SMB-000	LIMITORQUE	CLOSE	YES	NO
2-G16-F003	DRYWELL FLOOR DRAIN INBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO
2-G16-F004	DRYWELL FLOOR DRAIN OUTBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO
2-G16-F019	DRYWELL EQUIPMENT DRAIN INBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO
2-G16-F020	DRYWELL EQUIPMENT DRAIN OUTBOARD ISOLATION VALVE	FLEX	3	150	ANCHOR	AOV	A61B	MILLER	CLOSE	YES	NO

- [17] This was originally a flex-wedge gate valve. It was replaced with double-disc gate valve as a result of a prior thermal binding review. Also, a hole was drilled in the high-pressure disc as a result of a prior pressure locking review.
- [18] RCIC is not a safety-related system. However, it has PRA significance, so these valves were included in the scope of the GL 95-07 review.

GL 95-07 APPLICABILITY SCREEN

VALVE TAG	VALVE FUNCTION	VALVE DESCRIPTION				ACTUATOR DESCRIPTION			GL 95-07 APPLICABILITY		
		DISC TYPE	SIZE	CLASS	VENDOR	TYPE	SIZE	VENDOR	DESIGN BASIS SAFETY FUNCTION	NORMALLY OR OCCASIONALLY CLOSED?	GL 95-07 APPLICABLE?
2-G31-F001 [19]	RWCU INLET INBOARD ISOLATION VALVE	DOUBLE	6	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
2-G31-F004 [19]	RWCU INLET OUTBOARD ISOLATION VALVE	DOUBLE	6	900	ANCHOR-DARLING	MOV	SMB-00	LIMITORQUE	CLOSE	YES	NO
2-RCC-V120 [20]	RBCCW INLET VALVE TO RWCU PRECOAT PUMP	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	NON-SAFETY	NO	NO
2-RCC-V54 [20]	DRYWELL EQUIPMENT DRAIN HX RBCCW INLET VALVE	SOLID	2	600	VELAN	AOV	60RN155 SP174	K-M	NON-SAFETY	NO	NO
2-RCC-V73 [20]	CRD PUMP 1B COOLING WATER INLET VALVE	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	NON-SAFETY	NO	NO
2-RCC-V74 [20]	CRD PUMP 1A COOLING WATER INLET VALVE	SOLID	1	600	VELAN	AOV	37RN122 SP236	K-M	NON-SAFETY	NO	NO
2-RCC-V76 [20]	REACTOR BUILDING EQUIPMENT DRAIN HX INLET VALVE	SOLID	2	600	VELAN	AOV	60RN155 SP174	K-M	NON-SAFETY	NO	NO

[19] These valves have no safety function to open. However, the original flex-wedge gate valves were replaced with double-disc gate valves during a prior PLTB review. Additionally, holes were drilled in the high-pressure discs.

[20] These valves have no safety function to open. However, PLTB evaluations were performed at the discretion of the PLTB review group.

ENCLOSURE 3
 BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
 NRC DOCKET NOS. 50-325 & 50-324
 OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO THE NRC GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL BINDING OF SAFETY-RELATED POWER-
 OPERATED GATE VALVES "
 GL 95-07 SUSCEPTIBILITY SCREEN

VALVE TAG	PRESSURE LOCKING SCREEN			THERMAL BINDING SCREEN			SUSCEPTIBLE TO PRESSURE LOCKING?	SUSCEPTIBLE TO THERMAL BINDING?	DISPOSITION	SCHEDULE FOR LONG-TERM DISPOSITION
	SUSCEPTIBLE TO HYDRAULICALLY INDUCED DOUBLE DISC DRAG FORCES?	SUSCEPTIBLE TO THERMALLY INDUCED DOUBLE DISC DRAG FORCES?	PROVIDED WITH PL MITIGATING FEATURE?	MAXIMUM OPERATING TEMP > 200°F?	MAXIMUM ΔT > 50°F FOR SOLID OR > 100°F FOR FLEX?	PROCEDURAL CONTROLS TO MITIGATE TB?				
1-E11-F007A	NO	NO	NO	YES	YES	NO	NO	NO	NA	NA
1-E11-F007B			[1]	[1]	[2]					
2-E11-F007A										
2-E11-F007B										
1-E11-F008	YES	NO	NO	YES	YES	NO	YES	YES	[3]	NA
1-E11-F009			[2]	[2]	[2]					
2-E11-F008										
2-E11-F009										
1-E11-F015A	NO	NO	YES	YES	YES	NO	NO	YES	SHORT-TERM: EVALUATION DETERMINED THAT THESE VALVES ARE OPERABLE	8/96
1-E11-F015B			[4]	[2]	[2]					
2-E11-F015A										
2-E11-F015B										

[1] 1/2-E11-F011A/B are identical valves. They are periodically closed at temperatures which are greater than the maximum expected accident temperatures for 1/2-E11-F007A/B. Thermal binding has not been observed at bounding conditions.

[2] The present Operating Procedures contain precautions about PLTB conditions.

[3] Evaluated for commercial considerations but not within the scope of GL 95-07.

[4] Holes have been drilled in the high-pressure discs as a result of a prior pressure locking review.

GL 95-07 SUSCEPTIBILITY SCREEN

VALVE TAG	PRESSURE LOCKING SCREEN			THERMAL BINDING SCREEN			SUSCEPTIBLE TO PRESSURE LOCKING?	SUSCEPTIBLE TO THERMAL BINDING?	DISPOSITION	SCHEDULE FOR LONG-TERM DISPOSITION
	SUSCEPTIBLE TO HYDRAULICALLY-INDUCED DOUBLE DISC DRAG FORCES?	SUSCEPTIBLE TO THERMALLY INDUCED DOUBLE DISC DRAG FORCES?	PROVIDED WITH PL MITIGATING FEATURE?	MAXIMUM OPERATING TEMP > 200°F?	MAXIMUM ΔT > 50°F FOR SOLID OR > 100°F FOR FLEX?	PROCEDURAL CONTROLS TO MITIGATE TB?				
1-E11-F028A	YES	NO	NO	NO	NO	NO	YES	NO	SHORT-TERM: EVALUATION DETERMINED THAT THE VALVES ARE OPERABLE	8/96
1-E11-F028B			[5]							
2-E11-F028A										
2-E11-F028B										
1-E11-F047A	NO	NO	NO	YES	NO	NO	NO	NO	[7]	NA
1-E11-F047B			[6]							
2-E11-F047A										
2-E11-F047B										

[5] The present Operating Procedures contain precautions about PLTB conditions.

[6] A potential susceptibility to thermally-induced pressure locking was identified in the initial screening review. However, the RHR System and valves are warmed up prior to closure of 1/2-E11-F047A/B, so pressure locking is not expected.

[7] GL 95-07 is not applicable to these valves. They were evaluated for PLTB at the discretion of the PLTB review group.

GL 95-07 SUSCEPTIBILITY SCREEN

VALVE TAG	PRESSURE LOCKING SCREEN			THERMAL BINDING SCREEN			SUSCEPTIBLE TO PRESSURE LOCKING?	SUSCEPTIBLE TO THERMAL BINDING?	DISPOSITION	SCHEDULE FOR LONG-TERM DISPOSITION
	SUSCEPTIBLE TO HYDRAULICALLY INDUCED DOUBLE DISC DRAG FORCES?	SUSCEPTIBLE TO THERMALLY INDUCED DOUBLE DISC DRAG FORCES?	PROVIDED WITH PL MITIGATING FEATURE?	MAXIMUM OPERATING TEMPERATURE > 200°F?	MAXIMUM ΔT > 50°F FOR SOLID OR > 100°F FOR FLEX?	PROCEDURAL CONTROLS TO MITIGATE TB?				
1-E21-F004A	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA
1-E21-F004B	[8]	NO	NO	NO	NO	NO	NO	NO	NA	NA
2-E21-F004A										
2-E21-F004B										
1-E21-F005A										
1-E21-F005B	NO	NO	YES	NO	NO	NO	NO	NO	NA	NA
2-E21-F005A	NO	NO	YES	NO	NO	NO	NO	NO	NA	NA
2-E21-F005B										
1-E21-F031A										
1-E21-F031B										
2-E21-F031A	NO	NO	NO	YES	NO	NO	NO	NO	NA	NA
2-E21-F031B	NO	NO	NO	YES	NO	NO	NO	NO	NA	NA
1-E21-F031B										
2-E21-F031A										
2-E21-F031B										

[8] These valves are closed approximately 1 minute every 92 days. The circumstances which could lead to hydraulically induced pressure locking are considered to be not credible.

[9] Holes were drilled in the high-pressure discs of these valves as a result of a prior pressure locking review.

[10] These are the Core Spray Minimum Flow Valves. They have a maximum possible closing temperature of 203°F during a LOCA. However, it is anticipated that the area temperature will be great enough so that the expected temperature change will be < 100°F.

GL 95-07 SUSCEPTIBILITY SCREEN

VALVE TAG	PRESSURE LOCKING SCREEN			THERMAL BINDING SCREEN			SUSCEPTIBLE TO PRESSURE LOCKING?	SUSCEPTIBLE TO THERMAL BINDING?	DISPOSITION	SCHEDULE FOR LONG-TERM DISPOSITION
	SUSCEPTIBLE TO HYDRAULICALLY INDUCED DOUBLE DISC DRAG FORCES?	SUSCEPTIBLE TO THERMALLY INDUCED DOUBLE DISC DRAG FORCES?	PROVIDED WITH PL MITIGATING FEATURE?	MAXIMUM OPERATING TEMP > 200°F?	MAXIMUM ΔT > 50°F FOR SOLID OR > 100°F FOR FLEX?	PROCEDURAL CONTROLS TO MITIGATE TB?				
1-E41-F001	NO	NO	YES	NA	NA	NA	NO	NO	NA	NA
2-E41-F001			[11]							
1-E41-F006	NO	NO	YES	NA	NA	NA	NO	NO	NA	NA
2-E41-F006			[11]							
1-E41-F041	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA
2-E41-F041										
1-E41-F042	NO	YES	NO	NO	NO	NO	YES	NO	SHORT TERM: EVALUATION DETERMINED THAT THESE VALVES ARE OPERABLE	4/26/96
2-E41-F042									LONG TERM: PERFORM DETAILED ANALYSIS, EVALUATING THE NEED FOR MODIFICATION	

[11] These were originally flex-wedge gate valves. They were replaced with double-disc gate valves with holes drilled in their discs as a result of a prior review.

GL 95-07 SUSCEPTIBILITY SCREEN

VALVE TAG	PRESSURE LOCKING SCREEN			THERMAL BINDING SCREEN			SUSCEPTIBLE TO PRESSURE LOCKING?	SUSCEPTIBLE TO THERMAL BINDING?	DISPOSITION	SCHEDULE FOR LONG-TERM DISPOSITION	
	SUSCEPTIBLE TO HYDRAULICALLY INDUCED DOUBLE DISC DRAG FORCES?	SUSCEPTIBLE TO THERMALLY INDUCED DOUBLE DISC DRAG FORCES?	PROVIDED WITH PL MITIGATING FEATURE?	MAXIMUM OPERATING TEMP > 200°F?	MAXIMUM ΔT > 50°F FOR SOLID OR > 100°F FOR FLEX?	PROCEDURAL CONTROLS TO MITIGATE TB?					
1-E51-F010	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	
2-E51-F010											
1-E51-F013	NO	NO	YES	NA	NA	NA	NO	NO	NA	NA	
2-E51-F013			[12]								[12]
1-E51-F029	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	
1-E51-F031											
2-E51-F029											
2-E51-F031											
1-G31-F001	NO	NO	YES	NA	NA	NA	NO	NO	[13]	NA	
1-G31-F004			[12]								[12]
2-G31-F001											
2-G31-F004											

[12] These were originally flex-wedge gate valves. They were replaced with double-disc gate valves with holes drilled in their discs as a result of a prior PLTB review.

[13] These valves are not strictly within the scope of GL 95-07. However, during a prior PLTB review, the original flex-wedge gate valves were replaced with double-disc gate valves and holes were drilled in the discs.

GL 95-07 SUSCEPTIBILITY SCREEN

VALVE TAG	PRESSURE LOCKING SCREEN			THERMAL BINDING SCREEN			SUSCEPTIBLE TO PRESSURE LOCKING?	SUSCEPTIBLE TO THERMAL BINDING?	DISPOSITION	SCHEDULE FOR LONG-TERM DISPOSITION
	SUSCEPTIBLE TO HYDRAULICALLY INDUCED DOUBLE DISC DRAG FORCES?	SUSCEPTIBLE TO THERMALLY INDUCED DOUBLE DISC DRAG FORCES?	PROVIDED WITH PL MITIGATING FEATURE?	MAXIMUM OPERATING TEMPERATURE > 200°F?	MAXIMUM dT > 50°F FOR SOLID OR > 100°F FOR FLEX?	PROCEDURAL CONTROLS TO MITIGATE TB?				
1-RCC-V120	NA	NA	NA	NO	NO	NO	NO	NO	NA	NA
1-RCC-V54										
1-RCC-V73										
1-RCC-V74										
1-RCC-V76										
2-RCC-V120										
2-RCC-V54										
2-RCC-V73										
2-RCC-V74										
2-RCC-V76										

[14] These valves are not safety-related and are not within the scope of GL 95-07. They were evaluated at the discretion of the PLTB review group because their proper operation ensures adequate cooling (hence long-term reliability) for equipment serviced by RBCCW. They were determined to not be susceptible to PLTB.

GL 95-07 SUSCEPTIBILITY SCREEN

VALVE TAG	PRESSURE LOCKING SCREEN			THERMAL BINDING SCREEN			SUSCEPTIBLE TO PRESSURE LOCKING?	SUSCEPTIBLE TO THERMAL BINDING?	DISPOSITION	SCHEDULE FOR LONG-TERM DISPOSITION
	SUSCEPTIBLE TO HYDRAULICALLY INDUCED DOUBLE DISC DRAG FORCES?	SUSCEPTIBLE TO THERMALLY INDUCED DOUBLE DISC DRAG FORCES?	PROVIDED WITH PL MITIGATING FEATURE?	MAXIMUM OPERATING TEMP > 200°F?	MAXIMUM ΔT > 50°F FOR SOLID OR > 100°F FOR FLEX?	PROCEDURAL CONTROLS TO MITIGATE TB?				
2-CAC-CV-2713	NA	NA	NA	NO	YES	NO	NO	NO	NA	NA
2-CAC-CV-2714				[15]	[15]	[15]		[15]		
2-CAC-CV-2715										
2-CAC-CV-2716										
2-CAC-CV-2889										
2-CAC-CV-2890										
2-CAC-V22	NA	NA	NA	NO	NO	NO	NO	NO	[16]	NA
2-CAC-V23										

[15] These valves have solid wedges, but are equipped with soft seats. They have been specifically designed to operate in a cryogenic system, where significant temperature changes are expected to occur.

[16] These valves are not strictly within the scope of GL 95-07. However, they have been reviewed for PLTB based on their inclusion in EOPs. They are potentially susceptible to PLTB if they are operated at temperatures beyond their design basis.

ENCLOSURE 4
 BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
 NRC DOCKET NOS. 50-325 & 50-324
 OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO THE NRC GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL BINDING OF SAFETY-RELATED POWER-OPERATED GATE VALVES "

SUMMARY SCHEDULE OF PROPOSED CORRECTIVE ACTIONS

VALVE	FUNCTION	SUSCEPTIBILITY	PROPOSED CORRECTIVE ACTION	PROPOSED COMPLETION DATE
1-E11-F015A 1-E11-F015B 2-E11-F015A 2-E11-F015B	RHR LPCI INJECTION VALVES	THERMAL BINDING MAY OCCUR IF A VALVE IS CLOSED AT AN ELEVATED TEMPERATURE	PROCEDURAL CONTROLS/PRECAUTIONS	8/15/96
1-E11-F028A 1-E11-F028B 2-E11-F028A 2-E11-F028B	RHR SUPPRESSION POOL DISCHARGE ISOLATION VALVES	PRESSURE LOCKING MAY OCCUR IF RHR PUMP DISCHARGE PRESSURE BECOMES TRAPPED IN THE BONNET REGION	PROCEDURAL CONTROLS/PRECAUTIONS	8/15/96
1-E41-F042 2-E41-F042	HPCI SUPPRESSION POOL SUCTION VALVES	PRESSURE LOCKING MAY OCCUR IF A VALVE BONNET IS HEATED AND THE WATER IN THE BONNET REGION CANNOT LEAK OUT	ANALYZE THERMAL ENVIRONMENT FOR IMPACT ON EXISTING VALVE CONFIGURATION	4/26/96

ENCLOSURE 5
 BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
 NRC DOCKET NOS. 50-325 & 50-324
 OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO THE NRC GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL BINDING OF
 SAFETY-RELATED POWER-OPERATED GATE VALVES "

A number of prior modifications have been performed at BNP to mitigate the effects of PL/TB. This enclosure provides a list of the significant changes.

VALVE	VALVE FUNCTION	MODIFICATIONS & REVISIONS
1-B21-F016	MAIN STEAM LINE DRAIN ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
1-B21-F019	MAIN STEAM LINE DRAIN ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
1-E11-F004A	RHR PUMP TORUS SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
1-E11-F004B	RHR PUMP TORUS SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
1-E11-F004C	RHR PUMP TORUS SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
1-E11-F004D	RHR PUMP TORUS SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
1-E11-F015A	RHR LPCI INJECTION	Drilled Hole in High-Pressure Disc
1-E11-F015B	RHR LPCI INJECTION	Drilled Hole in High-Pressure Disc
1-E21-F005A	CORE SPRAY INJECTION	Drilled Hole in High-Pressure Disc
1-E21-F005B	CORE SPRAY INJECTION	Drilled Hole in High-Pressure Disc

VALVE	VALVE FUNCTION	MODIFICATIONS & REVISIONS
1-E41-F001	HPCI TURBINE STEAM ADMISSION	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in High Pressure Disc, Installed a Ball-Screw Actuator
1-E41-F002	HPCI INBOARD STEAM ISOLATION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
1-E41-F003	HPCI OUTBOARD STEAM ISOLATION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
1-E41-F006	HPCI INJECTION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Feedwater-Side Disc, Installed Ball-Screw Actuator
1-E51-F007	RCIC INBOARD STEAM ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
1-E51-F008	RCIC OUTBOARD STEAM ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
1-E51-F013	RCIC INJECTION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Feedwater Side Disc
1-G31-F001	RWCU INBOARD SUCTION ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Reactor Side Disc
1-G31-F004	RWCU OUTBOARD SUCTION ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Reactor Side Disc

VALVE	VALVE FUNCTION	MODIFICATIONS & REVISIONS
2-B21-F016	MAIN STEAM LINE DRAIN ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
2-B21-F019	MAIN STEAM LINE DRAIN ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
2-E11-F004A	RHR PUMP SHUTDOWN COOLING SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
2-E11-F004B	RHR PUMP SHUTDOWN COOLING SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
2-E11-F004C	RHR PUMP SHUTDOWN COOLING SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
2-E11-F004D	RHR PUMP SHUTDOWN COOLING SUCTION	Drilled Hole in Disc, Added Precaution in Operating Procedure
2-E11-F015A	RHR LPCI INJECTION	Drilled Hole in High-Pressure Disc
2-E11-F015B	RHR LPCI INJECTION	Drilled Hole in High-Pressure Disc
2-E21-F005A	CORE SPRAY INJECTION	Drilled Hole in High-Pressure Disc
2-E21-F005B	CORE SPRAY INJECTION	Drilled Hole in High-Pressure Disc

VALVE	VALVE FUNCTION	MODIFICATIONS & REVISIONS
2-E41-F001	HPCI TURBINE STEAM ADMISSION	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in High Pressure Disc, Installed a Ball-Screw Actuator
2-E41-F002	HPCI INBOARD STEAM ISOLATION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
2-E41-F003	HPCI OUTBOARD STEAM ISOLATION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
2-E41-F006	HPCI INJECTION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Feedwater-Side Disc, Installed Ball-Screw Actuator
2-E51-F007	RCIC INBOARD STEAM ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
2-E51-F008	RCIC OUTBOARD STEAM ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve. Added Bonnet Pressure Equalizing Valves.
2-E51-F013	RCIC INJECTION VALVE	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Feedwater Side Disc
2-G31-F001	RWCU INBOARD SUCTION ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Reactor Side Disc
2-G31-F004	RWCU OUTBOARD SUCTION ISOLATION	Replaced Flex-Wedge Valve with Double-Disc Valve, Drilled Hole in Reactor Side Disc

ENCLOSURE 6
BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO THE NRC GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL
BINDING OF SAFETY-RELATED POWER-OPERATED GATE VALVES "

LIST OF REGULATORY 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. Procedural controls are being established for the potential thermal binding of the RHR LPCI Injection valves.	8/15/96
2. Procedural controls are being established for the potential pressure locking of the RHR Suppression Pool Discharge Isolation valves.	8/15/96
3. Analyze the thermal environment for impact on the existing HPCI Inboard Suppression pool suction valve configuration.	4/26/96