



FEB 20 2002

SERIAL: BSEP 02-0047

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
SUBMITTAL OF TECHNICAL SPECIFICATION BASES CHANGES FOR
REVISION 20

Ladies and Gentlemen:

In accordance with Technical Specification (TS) 5.5.10.d for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2, Carolina Power & Light (CP&L) Company is submitting Revision 20 to the BSEP Unit 1 and Unit 2 TS Bases. Enclosure 1 provides a description of the revision, the date of implementation, and the BSEP units affected. Instructions for replacing the pages contained in the TS Bases books are provided in Enclosure 2. Enclosure 3 provides replacement TS Bases pages for both BSEP units.

Please refer any questions regarding this submittal to Mr. Steven F. Tabor, Supervisor - Licensing/Regulatory Programs, at (910) 457-2178.

Sincerely,

Leonard R. Beller
Manager - Regulatory Affairs
Brunswick Steam Electric Plant

KMN/kmn

Enclosures:

1. Summary of Revision to Technical Specification Bases
2. Technical Specification Bases Pages Replacement Instructions
3. Replacement Bases Pages – Units 1 and 2

cc (with enclosures):

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BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
SUBMITTAL OF TECHNICAL SPECIFICATION BASES CHANGES
FOR REVISION 20

Summary of Revision to Technical Specification Bases

Summary of Revision to Technical Specification Bases			
Revision	Affected Units	Date Implemented	Title/Description
20	1 and 2	January 30, 2002	Title: Control Room Emergency Ventilation System Description: This Bases revision changed the number of control room supply fans required to maintain pressure positive from two to one.

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
SUBMITTAL OF TECHNICAL SPECIFICATION BASES CHANGES
FOR REVISION 20

Technical Specification Bases Pages Replacement Instructions

Unit 1	
Remove	Insert
Bases Book 1	
Title Page, Revision 19	Title Page, Revision 20
LOEP-1, Revision 19	LOEP-1, Revision 20
Bases Book 2	
LOEP-1, Revision 19	LOEP-1, Revision 20
LOEP-3, Revision 18	LOEP-3, Revision 20
B 3.7-21, Revision 9	B 3.7-21, Revision 20
B 3.7-23, Revision 9	B 3.7-23, Revision 20
B 3.7-27, Revision 11	B 3.7-27, Revision 20

Unit 2	
Remove	Insert
Bases Book 1	
Title Page, Revision 19	Title Page, Revision 20
LOEP-1, Revision 19	LOEP-1, Revision 20
Bases Book 2	
LOEP-1, Revision 19	LOEP-1, Revision 20
LOEP-3, Revision 18	LOEP-3, Revision 20
B 3.7-21, Revision 10	B 3.7-21, Revision 20
B 3.7-23, Revision 10	B 3.7-23, Revision 20
B 3.7-27, Revision 11	B 3.7-27, Revision 20

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
SUBMITTAL OF TECHNICAL SPECIFICATION BASES CHANGES
FOR REVISION 20

Replacement Bases Pages – Units 1 and 2

Unit 1
Bases Book 1 Replacement Pages

BASES
TO
THE FACILITY OPERATING LICENSE DPR-71
TECHNICAL SPECIFICATIONS
FOR
BRUNSWICK STEAM ELECTRIC PLANT
UNIT 1
CAROLINA POWER & LIGHT COMPANY

REVISION 20

LIST OF EFFECTIVE PAGES - BASES

<u>Page No.</u>	<u>Revision No.</u>	<u>Page No.</u>	<u>Revision No.</u>
Title Page	20	B 3.1-7	0
		B 3.1-8	0
List of Effective Pages - Book 1		B 3.1-9	0
		B 3.1-10	0
LOEP-1	20	B 3.1-11	0
LOEP-2	3	B 3.1-12	0
LOEP-3	12	B 3.1-13	0
LOEP-4	12	B 3.1-14	0
		B 3.1-15	0
i	0	B 3.1-16	0
ii	0	B 3.1-17	0
		B 3.1-18	0
B 2.0-1	0	B 3.1-19	0
B 2.0-2	0	B 3.1-20	0
B 2.0-3	0	B 3.1-21	0
B 2.0-4	10	B 3.1-22	0
B 2.0-5	0	B 3.1-23	0
B 2.0-6	0	B 3.1-24	0
B 2.0-7	0	B 3.1-25	0
B 2.0-8	0	B 3.1-26	0
		B 3.1-27	0
B 3.0-1	0	B 3.1-28	0
B 3.0-2	0	B 3.1-29	0
B 3.0-3	0	B 3.1-30	0
B 3.0-4	0	B 3.1-31	0
B 3.0-5	0	B 3.1-32	0
B 3.0-6	0	B 3.1-33	0
B 3.0-7	0	B 3.1-34	0
B 3.0-8	0	B 3.1-35	0
B 3.0-9	0	B 3.1-36	0
B 3.0-10	0	B 3.1-37	0
B 3.0-11	0	B 3.1-38	0
B 3.0-12	0	B 3.1-39	0
B 3.0-13	0	B 3.1-40	0
B 3.0-14	0	B 3.1-41	0
B 3.0-15	0	B 3.1-42	0
		B 3.1-43	0
B 3.1-1	0	B 3.1-44	0
B 3.1-2	0	B 3.1-45	0
B 3.1-3	0	B 3.1-46	0
B 3.1-4	0	B 3.1-47	0
B 3.1-5	0	B 3.1-48	0
B 3.1-6	0		

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Unit 1
Bases Book 2 Replacement Pages

LIST OF EFFECTIVE PAGES - BASES

<u>Page No.</u>	<u>Revision No.</u>	<u>Page No.</u>	<u>Revision No.</u>
List of Effective Pages - Book 2		B 3.4-33	0
		B 3.4-34	0
LOEP-1	20	B 3.4-35	0
LOEP-2	18	B 3.4-36	0
LOEP-3	20	B 3.4-37	0
LOEP-4	13	B 3.4-38	0
LOEP-5	6	B 3.4-39	17
		B 3.4-40	17
i	18	B 3.4-41	17
ii	7	B 3.4-42	17
		B 3.4-43	17
B 3.4-1	0	B 3.4-44	17
B 3.4-2	0	B 3.4-45	17
B 3.4-3	1	B 3.4-46	17
B 3.4-4	1	B 3.4-47	17
B 3.4-5	1	B 3.4-48	0
B 3.4-6	1	B 3.4-49	0
B 3.4-7	0		
B 3.4-8	0	B 3.5-1	0
B 3.4-9	0	B 3.5-2	0
B 3.4-10	0	B 3.5-3	0
B 3.4-11	0	B 3.5-4	0
B 3.4-12	0	B 3.5-5	0
B 3.4-13	0	B 3.5-6	0
B 3.4-14	9	B 3.5-7	0
B 3.4-15	0	B 3.5-8	0
B 3.4-16	0	B 3.5-9	0
B 3.4-17	0	B 3.5-10	0
B 3.4-18	0	B 3.5-11	0
B 3.4-19	0	B 3.5-12	0
B 3.4-20	19	B 3.5-13	0
B 3.4-21	19	B 3.5-14	0
B 3.4-22	19	B 3.5-15	0
B 3.4-23	19	B 3.5-16	9
B 3.4-24	19	B 3.5-17	0
B 3.4-25	0	B 3.5-18	0
B 3.4-26	0	B 3.5-19	0
B 3.4-27	0	B 3.5-20	0
B 3.4-28	0	B 3.5-21	0
B 3.4-29	0	B 3.5-22	0
B 3.4-30	0	B 3.5-23	0
B 3.4-31	0	B 3.5-24	0
B 3.4-32	0	B 3.5-25	0

(continued)

LIST OF EFFECTIVE PAGES - BASES (continued)

<u>Page No.</u>	<u>Revision No.</u>	<u>Page No.</u>	<u>Revision No.</u>
B 3.6-83	18	B 3.7-40	9
B 3.6-84	18	B 3.7-41	9
B 3.6-85	18	B 3.7-42	9
B 3.7-1	0	B 3.8-1	0
B 3.7-2	0	B 3.8-2	0
B 3.7-3	0	B 3.8-3	0
B 3.7-4	0	B 3.8-4	0
B 3.7-5	0	B 3.8-5	14
B 3.7-6	0	B 3.8-6	6
B 3.7-7	0	B 3.8-7	6
B 3.7-8	0	B 3.8-8	6
B 3.7-9	15	B 3.8-9	6
B 3.7-10	15	B 3.8-10	6
B 3.7-11	15	B 3.8-11	6
B 3.7-12	15	B 3.8-12	6
B 3.7-13	15	B 3.8-13	6
B 3.7-14	15	B 3.8-14	6
B 3.7-15	15	B 3.8-15	6
B 3.7-16	15	B 3.8-16	6
B 3.7-17	15	B 3.8-17	6
B 3.7-18	15	B 3.8-18	6
B 3.7-19	15	B 3.8-19	6
B 3.7-20	15	B 3.8-20	6
B 3.7-21	20	B 3.8-21	6
B 3.7-22	9	B 3.8-22	6
B 3.7-23	20	B 3.8-23	6
B 3.7-24	9	B 3.8-24	6
B 3.7-25	9	B 3.8-25	6
B 3.7-26	11	B 3.8-26	6
B 3.7-27	20	B 3.8-27	6
B 3.7-28	9	B 3.8-28	6
B 3.7-29	9	B 3.8-29	6
B 3.7-30	9	B 3.8-30	6
B 3.7-31	9	B 3.8-31	6
B 3.7-32	9	B 3.8-32	6
B 3.7-33	9	B 3.8-33	6
B 3.7-34	9	B 3.8-34	6
B 3.7-35	9	B 3.8-35	6
B 3.7-36	9	B 3.8-36	6
B 3.7-37	9	B 3.8-37	6
B 3.7-38	9	B 3.8-38	6
B 3.7-39	9	B 3.8-39	6

(continued)

B 3.7 PLANT SYSTEMS

B 3.7.3 Control Room Emergency Ventilation (CREV) System

BASES

BACKGROUND

The CREV System provides a radiologically controlled environment from which the unit can be safely operated following a Design Basis Accident (DBA).

The safety related function of CREV System is the radiation protection portion of the radiation/smoke protection mode and includes two redundant high efficiency air filtration subsystems for emergency treatment of recirculated air or outside supply air. Each subsystem consists of a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber bank, an emergency recirculation fan, and the associated ductwork and dampers. HEPA filters remove particulate matter, which may be radioactive. The charcoal adsorber banks provide a holdup period for gaseous iodine, allowing time for decay. One control room supply fan provides the required flow to maintain the pressure of the control room positive with respect to the outside atmosphere.

The CREV System is a standby system that is common to both Unit 1 and Unit 2, parts of which also operate during normal unit operations to maintain the control room environment. The two CREV subsystems must be OPERABLE if conditions requiring CREV System OPERABILITY exist in either Unit 1 or Unit 2. Upon receipt of the initiation signal(s) (indicative of conditions that could result in radiation exposure to control room personnel), the CREV System automatically switches to the radiation/smoke protection mode of operation to prevent infiltration of contaminated air into the control room. A system of dampers isolates the control room, and a part of the recirculated air is routed through either of the two filter subsystems. Outside air is taken in at the normal ventilation intake and is mixed with the recirculated air before being passed through one of the CREV subsystems for removal of airborne radioactive particles.

(continued)

BASES

LCO
(continued)

- c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

Also, two control room supply fans must be OPERABLE to ensure positive pressure can be maintained in the control room with respect to the outside atmosphere and to meet single failure criteria.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors, such that SR 3.7.3.3 can be met. However, it is acceptable for access doors to be opened for normal control room entry and exit and not consider it to be a failure to meet the LCO.

APPLICABILITY

In MODES 1, 2, and 3, the CREV System must be OPERABLE to control operator exposure during and following a DBA, since the DBA could lead to a fission product release.

In MODES 4 and 5, the probability and consequences of a DBA are reduced because of the pressure and temperature limitations in these MODES. Therefore, maintaining the CREV System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

- a. During movement of irradiated fuel assemblies in the secondary containment;
 - b. During CORE ALTERATIONS; and
 - c. During operations with potential for draining the reactor vessel (OPDRVs).
-

ACTIONS

A.1

With one CREV subsystem inoperable, the inoperable CREV subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE CREV subsystem is adequate to perform control room radiation protection. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced CREV System capability. The 7 day

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.3.3 (continued)

CREV System is designed to maintain this positive pressure at a flow rate of ≤ 2200 cfm to the control room in the radiation/smoke protection mode. To adequately demonstrate the capability of a CREV subsystem to maintain positive pressure, no more than one control room supply fan may be in operation during performance of this test. The Frequency of 18 months on a STAGGERED TEST BASIS is based on the low probability of significant degradation of the control room boundary occurring between surveillances.

SR 3.7.3.4

This SR verifies that on an actual or simulated initiation signal, each CREV subsystem starts and operates. This SR includes ensuring outside air flow is diverted to the HEPA filter and charcoal adsorber bank of each CREV subsystem. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.7.1 overlaps this SR to provide complete testing of the safety function. Operating experience has demonstrated that the components will usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. UFSAR, Section 6.4.
 2. UFSAR, Section 9.4.
 3. UFSAR, Section 15.6.4.5.5.
 4. 10 CFR 50.36(c)(2)(ii).
 5. ESR 99-00055, SBGT and CBEAF Technical Specification Surveillance Flow Measurement.
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Unit 2
Bases Book 1 Replacement Pages

BASES
TO
THE FACILITY OPERATING LICENSE DPR-62
TECHNICAL SPECIFICATIONS
FOR
BRUNSWICK STEAM ELECTRIC PLANT
UNIT 2
CAROLINA POWER & LIGHT COMPANY

REVISION 20

LIST OF EFFECTIVE PAGES - BASES

<u>Page No.</u>	<u>Revision No.</u>	<u>Page No.</u>	<u>Revision No.</u>
Title Page	20	B 3.1-7	0
		B 3.1-8	0
List of Effective Pages - Book 1		B 3.1-9	0
		B 3.1-10	0
LOEP-1	20	B 3.1-11	0
LOEP-2	3	B 3.1-12	0
LOEP-3	12	B 3.1-13	0
LOEP-4	12	B 3.1-14	0
		B 3.1-15	0
i	0	B 3.1-16	0
ii	0	B 3.1-17	0
		B 3.1-18	0
B 2.0-1	0	B 3.1-19	0
B 2.0-2	0	B 3.1-20	0
B 2.0-3	0	B 3.1-21	0
B 2.0-4	0	B 3.1-22	0
B 2.0-5	0	B 3.1-23	0
B 2.0-6	0	B 3.1-24	0
B 2.0-7	0	B 3.1-25	0
B 2.0-8	0	B 3.1-26	0
		B 3.1-27	0
B 3.0-1	0	B 3.1-28	0
B 3.0-2	0	B 3.1-29	0
B 3.0-3	0	B 3.1-30	0
B 3.0-4	0	B 3.1-31	0
B 3.0-5	0	B 3.1-32	0
B 3.0-6	0	B 3.1-33	0
B 3.0-7	0	B 3.1-34	0
B 3.0-8	0	B 3.1-35	0
B 3.0-9	0	B 3.1-36	0
B 3.0-10	0	B 3.1-37	0
B 3.0-11	0	B 3.1-38	0
B 3.0-12	0	B 3.1-39	0
B 3.0-13	0	B 3.1-40	0
B 3.0-14	0	B 3.1-41	0
B 3.0-15	0	B 3.1-42	0
		B 3.1-43	0
B 3.1-1	0	B 3.1-44	0
B 3.1-2	0	B 3.1-45	0
B 3.1-3	0	B 3.1-46	0
B 3.1-4	0	B 3.1-47	0
B 3.1-5	0	B 3.1-48	0
B 3.1-6	0		

(continued)

Unit 2
Bases Book 2 Replacement Pages

LIST OF EFFECTIVE PAGES - BASES

<u>Page No.</u>	<u>Revision No.</u>	<u>Page No.</u>	<u>Revision No.</u>
Title Page	N/A	B 3.4-32	0
		B 3.4-33	0
List of Effective Pages - Book 2		B 3.4-34	0
		B 3.4-35	0
LOEP-1	20	B 3.4-36	0
LOEP-2	18	B 3.4-37	0
LOEP-3	20	B 3.4-38	0
LOEP-4	13	B 3.4-39	17
LOEP-5	6	B 3.4-40	17
		B 3.4-41	17
i	18	B 3.4-42	17
ii	7	B 3.4-43	17
		B 3.4-44	17
B 3.4-1	0	B 3.4-45	17
B 3.4-2	0	B 3.4-46	17
B 3.4-3	1	B 3.4-47	17
B 3.4-4	1	B 3.4-48	0
B 3.4-5	1	B 3.4-49	0
B 3.4-6	1		
B 3.4-7	0	B 3.5-1	0
B 3.4-8	0	B 3.5-2	0
B 3.4-9	0	B 3.5-3	0
B 3.4-10	0	B 3.5-4	0
B 3.4-11	0	B 3.5-5	0
B 3.4-12	0	B 3.5-6	0
B 3.4-13	0	B 3.5-7	0
B 3.4-14	10	B 3.5-8	0
B 3.4-15	0	B 3.5-9	0
B 3.4-16	0	B 3.5-10	0
B 3.4-17	0	B 3.5-11	0
B 3.4-18	0	B 3.5-12	0
B 3.4-19	0	B 3.5-13	0
B 3.4-20	19	B 3.5-14	0
B 3.4-21	19	B 3.5-15	0
B 3.4-22	19	B 3.5-16	10
B 3.4-23	19	B 3.5-17	0
B 3.4-24	19	B 3.5-18	0
B 3.4-25	0	B 3.5-19	0
B 3.4-26	0	B 3.5-20	0
B 3.4-27	0	B 3.5-21	0
B 3.4-28	0	B 3.5-22	0
B 3.4-29	0	B 3.5-23	0
B 3.4-30	0	B 3.5-24	0
B 3.4-31	0	B 3.5-25	0

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LIST OF EFFECTIVE PAGES - BASES (continued)

<u>Page No.</u>	<u>Revision No.</u>	<u>Page No.</u>	<u>Revision No.</u>
B 3.6-83	18	B 3.7-40	10
B 3.6-84	18	B 3.7-41	10
B 3.6-85	18	B 3.7-42	10
B 3.7-1	0	B 3.8-1	0
B 3.7-2	0	B 3.8-2	0
B 3.7-3	0	B 3.8-3	0
B 3.7-4	0	B 3.8-4	0
B 3.7-5	0	B 3.8-5	14
B 3.7-6	0	B 3.8-6	6
B 3.7-7	0	B 3.8-7	6
B 3.7-8	0	B 3.8-8	6
B 3.7-9	15	B 3.8-9	6
B 3.7-10	15	B 3.8-10	6
B 3.7-11	15	B 3.8-11	6
B 3.7-12	15	B 3.8-12	6
B 3.7-13	15	B 3.8-13	6
B 3.7-14	15	B 3.8-14	6
B 3.7-15	15	B 3.8-15	6
B 3.7-16	15	B 3.8-16	6
B 3.7-17	15	B 3.8-17	6
B 3.7-18	15	B 3.8-18	6
B 3.7-19	15	B 3.8-19	6
B 3.7-20	15	B 3.8-20	6
B 3.7-21	20	B 3.8-21	6
B 3.7-22	10	B 3.8-22	6
B 3.7-23	20	B 3.8-23	6
B 3.7-24	10	B 3.8-24	6
B 3.7-25	10	B 3.8-25	6
B 3.7-26	11	B 3.8-26	6
B 3.7-27	20	B 3.8-27	6
B 3.7-28	10	B 3.8-28	6
B 3.7-29	10	B 3.8-29	6
B 3.7-30	10	B 3.8-30	6
B 3.7-31	10	B 3.8-31	6
B 3.7-32	10	B 3.8-32	6
B 3.7-33	10	B 3.8-33	6
B 3.7-34	10	B 3.8-34	6
B 3.7-35	10	B 3.8-35	6
B 3.7-36	10	B 3.8-36	6
B 3.7-37	10	B 3.8-37	6
B 3.7-38	10	B 3.8-38	6
B 3.7-39	10	B 3.8-39	6

(continued)

B 3.7 PLANT SYSTEMS

B 3.7.3 Control Room Emergency Ventilation (CREV) System

BASES

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(continued)

BASES

LCO
(continued)

- c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

Also, two control room supply fans must be OPERABLE to ensure positive pressure can be maintained in the control room with respect to the outside atmosphere and to meet single failure criteria.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors, such that SR 3.7.3.3 can be met. However, it is acceptable for access doors to be opened for normal control room entry and exit and not consider it to be a failure to meet the LCO.

APPLICABILITY

In MODES 1, 2, and 3, the CREV System must be OPERABLE to control operator exposure during and following a DBA, since the DBA could lead to a fission product release.

In MODES 4 and 5, the probability and consequences of a DBA are reduced because of the pressure and temperature limitations in these MODES. Therefore, maintaining the CREV System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

- a. During movement of irradiated fuel assemblies in the secondary containment;
 - b. During CORE ALTERATIONS; and
 - c. During operations with potential for draining the reactor vessel (OPDRVs).
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ACTIONS

A.1

With one CREV subsystem inoperable, the inoperable CREV subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE CREV subsystem is adequate to perform control room radiation protection. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced CREV System capability. The 7 day

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.3.3 (continued)

CREV System is designed to maintain this positive pressure at a flow rate of ≤ 2200 cfm to the control room in the radiation/smoke protection mode. To adequately demonstrate the capability of a CREV subsystem to maintain positive pressure, no more than one control room supply fans may be in operation during performance of this test. The Frequency of 18 months on a STAGGERED TEST BASIS is based on the low probability of significant degradation of the control room boundary occurring between surveillances.

SR 3.7.3.4

This SR verifies that on an actual or simulated initiation signal, each CREV subsystem starts and operates. This SR includes ensuring outside air flow is diverted to the HEPA filter and charcoal adsorber bank of each CREV subsystem. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.7.1 overlaps this SR to provide complete testing of the safety function. Operating experience has demonstrated that the components will usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. UFSAR, Section 6.4.
 2. UFSAR, Section 9.4.
 3. UFSAR, Section 15.6.4.5.5.
 4. 10 CFR 50.36(c)(2)(ii).
 5. ESR 99-00055, SGBT and CBEAF Technical Specification Surveillance Flow Measurement.
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