NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Brunswick Steam Electric Plant Unit 1	0 5 0 0 0 3 2 5	1 OF 0 2

TITLE (4)

Automatic Actuation of Control Building Emergency Air Filtration Train A

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 NAMES	DOCKET NUMBER(S)
0 7	2 8	8 4	8 4	— 0 1 2	— 0 0	0 8	2 7	8 4		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
1		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
9 7		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
M. J. Pastva, Jr., Regulatory Technician	9 1 9 — 4 5 7 — 9 5 2 1

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	
X	I L	I M O D	G 0 8 0	No							
X	I L	R J X	G 0 8 0	No							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On 7-28-84 at 0852, Control Building Emergency Air Filtration (CBEAF) System Train A automatically started due to an instrument downscale failure of Control Building area radiation monitor trip module 1-D22-RM-K600 1-3. This resulted from a failure of the high voltage transformer, T2, in the module's power supply, 1-D22-ES-K603A. At the time, Unit 1 was at 97% power and Unit 2 was in a refuel/maintenance outage. The redundant CBEAF Train B was in standby.

Appropriate repairs to K603A, including replacement of T2, were performed, and the monitor was returned to service. CBEAF Train A was secured and returned to standby within 70 hours of the event.

The 7-28-84 failure of T2 is attributed to suspected weakening of the transformer, which occurred during preplanned routine maintenance to K600 1-3 on 7-23-84. Prior to the maintenance, both CBEAF System trains had been manually placed into service. On 7-23-84, input power to K600 1-3 and K603A was lost due to electrical shorting of the signal input/power supply lead to K600 1-3. The weakening of T2 was not evident during repairs to K603A following the 7-23-84 event.

As a result of the 7-23-84 event, a memorandum was distributed to plant I&C Maintenance Foreman on 8-22-84. This memorandum requests instructing plant I&C personnel to ensure component tightness integrity of module hardware prior to returning involved equipment to service after corrective or preventive maintenance.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Brunswick Steam Electric Plant Unit 1	0 5 0 0 0 3 2 5	8 4	— 0 1 2	— 0 0	0 2 OF 0 2

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

On July 23, 1984, at 1455, during the performance of routine preventive maintenance on Control Building area radiation monitors, area radiation monitor indicator/trip unit 1-D22-RM-K600 1-3, GE Part No. 129B2802G11, experienced an instrument downscale failure when it was reconnected into the monitor instrumentation loop. As per design, the Control Building Emergency Air Filtration (CBEAF) System received an automatic start signal. At the time, both CBEAF System Trains A and B were in service as they had been manually started prior to performance of the subject preventive maintenance. This was done to avoid possible automatic starting of the trains due to performance of the subject maintenance. At the time, Unit 1 was operating at 99.4% power and Unit 2 was in a refuel/maintenance outage.

An investigation of this event revealed the screw associated with the electrical plug of the K600 1-3 signal input/power supply lead had, at some indeterminate time, become loose. The lock washer associated with the screw had become displaced and had lodged within the K600 1-3 instrument circuitry. The location of the lock washer was such that it was not detected prior to reconnection of K600 1-3 into the monitor instrument loop. When K600 1-3 was reconnected, input power to the instrument electrically shorted to ground. As a result, the monitor dc high voltage power supply, 1-D22-RM-K603A, GE Part No. 112C2235G004, electrically shorted to ground. The grounding and subsequent failure of K603A caused K600 1-3 to experience the encountered instrument downscale failure.

Following this event, K600 1-3 was replaced, K603A was repaired, and the monitor was returned to service. Within approximately 47 hours of this event, both CBEAF System trains were returned to their normal standby configuration.

As a result of this event, a memorandum dated August 22, 1984, was issued to the plant I&C Maintenance Foremen directing them to instruct plant I&C personnel to ensure the tightness integrity of plant hardware associated with instrumentation modules prior to returning the involved plant equipment to service after corrective or preventive maintenance.

On July 28, 1984, at 0352, CBEAF System Train A automatically started due to an instrument downscale failure of K600 1-3. At the time, Unit 1 was operating at 97% power and Unit 2 was in a refuel/maintenance outage. In addition, the redundant CBEAF System Train B was in standby.

The investigation of this event revealed K600 1-3 failed due to a deficient output from the high voltage transformer, T2, of K603A. The deficient output from T2 is attributed to a debilitation of the component encountered during the July 23, 1984, failure of K603A. Following the July 23, 1984, event, involved troubleshooting and repairs to K603A had not detected a problem with the output of T2.

Appropriate repairs to K603A, including replacement of T2, were performed. K600 1-3 and the monitor were returned to service. CBEAF System Train A was secured and returned to normal standby configuration within 70 hours of this event.

Actuation of a CBEAF System train places the involved train in its design mode of operation.

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

On July 23, 1984, at 1455, during the performance of routine preventive maintenance on Control Building area radiation monitors, area radiation monitor indicator/trip unit 1-D22-RM-K600 1-3, GE Part No. 129B2802G11, experienced an instrument downscale failure when it was reconnected into the monitor instrumentation loop. As per design, the Control Building Emergency Air Filtration (CBEAF) System received an automatic start signal. At the time, both CBEAF System Trains A and B were in service as they had been manually started prior to performance of the subject preventive maintenance. This was done to avoid possible automatic starting of the trains due to performance of the subject maintenance. At the time, Unit 1 was operating at 99.4% power and Unit 2 was in a refuel/maintenance outage.

An investigation of this event revealed the screw associated with the electrical plug of the K600 1-3 signal input/power supply lead had, at some indeterminate time, become loose. The lock washer associated with the screw had become displaced and had lodged within the K600 1-3 instrument circuitry. The location of the lock washer was such that it was not detected prior to reconnection of K600 1-3 into the monitor instrument loop. When K600 1-3 was reconnected, input power to the instrument electrically shorted to ground. As a result, the monitor dc high voltage power supply, 1-D22-RM-K603A, GE Part No. 11LC2235G004, electrically shorted to ground. The grounding and subsequent failure of K603A caused K600 1-3 to experience the encountered instrument downscale failure.

Following this event, K600 1-3 was replaced, K603A was repaired, and the monitor was returned to service. Within approximately 47 hours of this event, both CBEAF System trains were returned to their normal standby configuration.

As a result of this event, a memorandum dated August 22, 1984, was issued to the plant I&C Maintenance Foremen directing them to instruct plant I&C personnel to ensure the tightness integrity of plant hardware associated with instrumentation modules prior to returning the involved plant equipment to service after corrective or preventive maintenance.

On July 28, 1984, at 0852, CBEAF System Train A automatically started due to an instrument downscale failure of K600 1-3. At the time, Unit 1 was operating at 97% power and Unit 2 was in a refuel/maintenance outage. In addition, the redundant CBEAF System Train B was in standby.

The investigation of this event revealed K600 1-3 failed due to a deficient output from the high voltage transformer, T2, of K603A. The deficient output from T2 is attributed to a debilitation of the component encountered during the July 23, 1984, failure of K603A. Following the July 23, 1984, event, involved troubleshooting and repairs to K603A had not detected a problem with the output of T2.

Appropriate repairs to K603A, including replacement of T2, were performed. K600 1-3 and the monitor were returned to service. CBEAF System Train A was secured and returned to normal standby configuration within 70 hours of this event.

Actuation of a CBEAF System train places the involved train in its design mode of operation.

CP&L
Carolina Power & Light Company

Brunswick Steam Electric Plant
P. O. Box 10429
Southport, NC 28461-0429

August 27, 1984

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SERIAL: BSEP/84-1840

NRC Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT UNIT 1
DOCKET NO. 50-325
LICENSE NO. DPR-71
LICENSEE EVENT REPORT 1-84-12

Gentlemen:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence and is in accordance with the format set forth in NUREG-1022, September 1983.

Very truly yours,

C. R. Dietz, General Manager
Brunswick Steam Electric Plant

MJP/kal/LETCG2

Enclosure

cc: Mr. J. P. O'Reilly

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