NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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 3

TITLE (4) Failure of Service Water (SW) System Nuclear Header Supply Isolation Valve SW-117 to Open Due to Oxidation of the Valve Geared Limit Switch Electrical Contacts

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 4	2 4	8 8	8 8	0 1 3	0 0	0 5	2 3	8 8		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 9 7	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
		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
M. J. Pastva Jr., Regulatory Compliance Specialist	AREA CODE 9 1 9 — 4 5 7 - 2 3 1 5

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	B I	C N T R	L 2 0 0	Y							
X	B I	C N T R	L 2 0 0	Y							

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)

During Unit 1 power operation at 97%, it was discovered at approximately 1800 hours on 4/24/88, that the Service Water (SW) System nuclear header supply isolation valve to the SW vital header, SW-V117, would not open. This was found while cycling various SW System valves in order to facilitate the temporary repair of a pinhole leak on the SW vital header. The consequences of this event were minimal.

SW-V117 would not open as the result of oxidation buildup on the No. 4 electrical contacts, Limitorque Corp. Part No. 34534-E, of the valve opening permissive geared limit switch rotor No. 1.

The oxidation of the subject SW-V117 electrical contacts was removed and the valve was satisfactorily stroked and returned to service within 72 hours of the event. Appropriate procedure revisions will be implemented to provide for periodic cleaning of these type contacts in Limitorque actuator torque switches. The subject temporary repairs to the SW vital header were completed at approximately 0000 hours on 4/25/88.

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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 8	— 0 1 3	— 0 0	0 2 OF 0 3

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

Initial Conditions

Unit 1 was operating at 97% power. Maintenance activities were in progress for the temporary repair (temporary patch) of a pinhole leak on the unit Service Water (SW) System vital header line 1-SW-110-6-157 (EIIS/BI/PSX), located at the piping flange connecting header line 1-SW-304-3/4-17A (EIIS/BI/PSX), downstream of the SW System conventional header supply isolation valve to the vital header, SW-V111 (EIIS/BI/ISV).

Event Description

At approximately 1800 hours on April 23, 1988, while the Unit 1 Control Operator (CO) was cycling various valves on the SW System vital header to facilitate the repair of the subject system leak, it was discovered that the SW System nuclear header supply isolation valve to the vital header, SW-V117 (EIIS/BI/ISV), would not open. This was made known to the CO through closed indication of the valve on the Control Room Reactor/Turbine Gauge Board (EIIS/NA/MCBD). An Auxiliary Operator (AO) was dispatched to the valve motor operator breaker compartment DP2 (EIIS/EC/BKR), which is located on motor control center (MCC) 1XB (EIIS/EC/MCC), and attempted to reset the breaker thermal overloads. Shortly thereafter, a second attempt by the CO to open the valve was unsuccessful. Failure of the SW-V117 to open with the motor operator rendered the SW nuclear header incapable of supplying the SW vital header; however, the valve could have been opened using the manual operator.

Event Investigation

Troubleshooting of the problem affecting SW-V117, that included an inspection and a bridge and meggering of the valve motor (EIIS/BI/MO), revealed an oxidation buildup on the number 4 electrical contacts, Limitorque Corp. Part No. 345341-E, (EIIS/BI/CNTR) of the valve geared limit switch rotor number 1 (EIIS/BI/*). Opening of these contacts provides the opening permissive for the valve. As plant conditions did not allow the valve to be placed in the failed position for troubleshooting, actual electrical resistance measurements could not be made. Based upon results of the troubleshooting, it was determined the failure of the valve to open resulted from the observed oxidation buildup on the subject electrical contacts.

A review of past plant maintenance history revealed only one similar event, which occurred on the low pressure coolant injection of the Residual Heat Removal (RHR) (E11) System B loop heat exchange outlet valve, E11-F003 (EIIS/BO). This event, also resulted from oxidation of the number 4 electrical contacts, Limitorque Corp. Part No. 345341-E, in rotor number 1 of the valve geared limit switch.

*EIIS component description unavailable.

Corrective Action

The subject electrical contacts were cleaned to remove the oxidation buildup and the valve was satisfactorily stroked and returned to service within 72 hours of the event. As a result of this event, the maintenance instruction (MI) for cleaning the electrical contacts of Limitorque actuator torque switches, MI-10-25, will be revised to provide for periodic cleaning of the actuator geared limit switch contacts. The expected date for implementation of this procedure revision is June 1, 1988.

At approximately 0000 hours on April 25, 1988, the subject temporary repairs involving the pinhole in the SW vital header were completed.

Event Assessment

An assesment of this event has determined that this event would not have been more severe under other reasonable and credible alternative conditions. In addition, service water can be supplied to the loads downstream of SW-117 by cross-tieing the vital header to the conventional service water system. This system is designed and built to the same specification as the nuclear water system. A review of documentation of reportable plant events shows the incurred failure was an isolated occurrence.

CP&L
Carolina Power & Light Company

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

May 23, 1988

FILE: B09-13510C
SERIAL: BSEP/88-0514

10CFR50.73

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

BRUNSWICK STEAM ELECTRIC PLANT UNIT 1
DOCKET NO. 50-325
LICENSE NO. DPR-71
LICENSEE EVENT REPORT 1-88-013

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/mcg

Enclosure

cc: Dr. J. N. Grace
Mr. E. D. Sylvester
BSEP NRC Resident Office

IE22
1/1