



Carolina Power & Light Company

Brunswick Nuclear Project
P. O. Box 10429
Southport, NC 28461-0429
September 15, 1989

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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 1-89-018

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,

J. L. Harness, General Manager
Brunswick Nuclear Project

MJP/mcg

Enclosure

cc: Mr. S. D. Ebnetter
Mr. E. G. Tourigny
BSEP NRC Resident Office

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Brunswick Steam Electric Plant Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 2 5 1 OF 0 4										PAGE (3) 1 OF 0 4																																																		
TITLE (4) Exceeded Technical Specification 3.6.5.2 Required Action As Result of Unrecognized Design Logic Interface With the Standby Gas Treatment System																																																																						
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)																																																								
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OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																																																																			
POWER LEVEL (10)			20.402(b)																	20.405(c)																	50.73(a)(2)(iv)																	73.71(b)																
1			20.405(a)(1)(i)																	50.36(c)(1)																	50.73(a)(2)(v)																	73.71(c)																
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M. J. Pastva Jr., Regulatory Compliance Specialist														9 1 9 4 5 7 1 - 2 3 1 5																																																								
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Units 1 and 2 were synchronized to the main power grid with Unit 1 at 100% and Unit 2 at 86%, while in a fuel depletion coast down to a scheduled September 1989 refuel/maintenance outage.

On 8/17/89, it was determined that deenergizing the starter circuitry of a Standby Gas Treatment (SBGT) train will cause inoperability of selected isolation logic (Division I or II) to the secondary containment isolation dampers. These dampers are designed to isolate on a Drywell High Pressure/Reactor Low Level No. 2 signal. This condition is a previously unrecognized design concern from original plant construction. Caution tags were placed on the involved power supply breakers. Subsequent review determined, on 8/30/89, that the isolation logic will also be lost due to positioning the SBGT train inlet/outlet valves in other than full open, selection of a SBGT train control switch to other than "PREFERRED" or "ON", and a high temperature isolation of the train. On 8/17/89 and 8/30/89, memorandums were distributed to plant Operations advising them of these findings.

Project Identification No. G0098A was initiated on 8/24/89 to resolve the identified design concern. This event will be reviewed by appropriate personnel. Prior similar events have been reported in LERs 1-88-032 and 034.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 6/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Brunswick Steam Electric Plant Unit 1	0500032589	—	018	—010	02	OF	04

TEXT (If more space is required, use additional NRC Form 305A's) (17)

Event

Secondary Containment isolation dampers exceeding Technical Specifications Limiting Conditions for Operation time frame due to failure to adequately recognize the design logic interface of the dampers with the control logic of the Standby Gas Treatment trains on each unit.

Initial Conditions

Both units were synchronized to the main power grid with Unit 1 at 100%, and Unit 2 at 86%, while in a fuel depletion coastdown approaching a scheduled unit refueling/maintenance outage in September 1989. Plans for Unit 1 included hanging equipment clearance #1-1140 to remove Standby Gas Treatment (SBGT) System train 1A (EIIS/BH/FLT) from service to permit an operability verification of the train Fire Protection Deluge/Sprinkler system (EIIS/KP) flow path in accordance with Periodic Test (PT)-34.5.1.3.

Event Discovery/Description

On August 5, 1989, during an Operations technical review of equipment clearance #1-1140, the Unit 1 Shift Foreman (SF) questioned the effect of deactivating power supply circuit breaker EA3 (EIIS/BH/BKR) to the SBGT train 1A starter circuit as review of plant drawing LL-92041 sheets 16, 17, and 17A showed that power to the circuit also powers Secondary Containment Division I isolation logic relay A-CRMX (EIIS/JM/RLY). This relay initiates automatic closure of the Secondary Containment ventilation isolation dampers (EIIS/VA/DMP). Following additional review and consultation with the Shift Technical Advisor (STA), the Senior Reactor Operator (SRO), and the Shift Operating Supervisor (SOS), on August 5 and 6, it was determined that deenergizing the subject circuit breaker prevents A-CRMX from energizing to effect automatic closure of the dampers in response to a Drywell High Pressure/Reactor Low Level No. 2 signal. Following this determination, on August 7, 1989, equipment caution tags were hung on the starter circuit power supplies of the SBGT trains on both Units 1 and 2 to advise that deenergizing the power supplies prevents the respective Division I or II logic to the dampers from functioning to isolate the dampers upon Drywell High Pressure/Reactor Low Level No. 2.

On August 17, 1989, it was concluded deenergization of EA3 places the unit into an eight-hour Limiting Condition for Operation (LCO) in accordance with Technical Specification (T/S) 3.6.5.2. Likewise, it was determined that deenergizing the respective power supply to the starter circuit of SBGT train 1B, ED3 (EIIS/BH/BKR), renders the Division II logic to the dampers from functioning inoperable. Either logic train will isolate the dampers.

On August 17, 1989, a memorandum was distributed to the Operations group to ensure their awareness of the concern. In addition, on August 29, 1989, this concern was further highlighted through issuance of Standing Instruction 89-55.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 5/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
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NOTE: If more space is required, use additional NRC Form 300a's (17)

Subsequent review of plant drawings determined on August 30, 1989, that power to the CRMX relay will also be lost through any of the following occurrences:

1. Positioning the SBTG train inlet or outlet valve, C-BFV-RB (EIIS/BH/ISV) and B-BFV-RB (EIIS/BH/ISV) (train A) and G-BFV-RB (EIIS/BH/ISV) and E-BFV-RB (EIIS/BH/ISV) (train B) to other than "FULL OPEN."
2. Selection of a SBTG train control switch (EIIS/BH/CS) to other than "PREFERRED" or "ON".
3. A SBTG train high temperature isolation.

On August 30, 1989, a memorandum was distributed to the Operations group to ensure their awareness of these additional findings and Standing Instruction 89-56 was then issued to highlight this concern.

Event Investigation

A review of plant documentation shows the subject design interface of the SBTG System and the Secondary Containment dampers initiation logic had existed unrecognized since original plant construction. Consequently, whenever power to a subject CRMX relay is interrupted through one of the aforementioned occurrences, the Secondary Containment isolation dampers' respective isolation logic was unknowingly rendered inoperable. Prior to the discovery of this condition, a recent occurrence involved planned maintenance of SBTG train 1B on July 11, 1989.

In late December 1988 or early January 1989, initial discovery of this concern was made by the involved SF during preinstallation reviews of plant modifications to correct a SBTG valve indication problem on both units, which was reported in LER 1-88-032. The SF conveyed his finding to the responsible plant modification engineer who, in turn, then discussed it with the Operations Engineer. However, the plant design and resulting T/S implications of the concern were not fully recognized and it was incorrectly concluded that the concern was covered by the SBTG T/S action statement.

Corrective Action

In order to resolve the subject design concern, Project Identification No. (PID) G0098A was initiated on August 24, 1989. This event will be reviewed by appropriate members of the Operations, Technical Support, and Nuclear Engineering Department groups to emphasize that applicability of an appropriate LCO must be considered for a T/S component which is rendered inoperable by loss of a power source, even if that power source is addressed separately by T/S.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)

DOCKET NUMBER (2)

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Brunswick Steam Electric Plant Unit 1

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

Event Assessment

Review of this event has determined that a loss of automatic isolation function of the secondary containment isolation dampers from a Drywell High Pressure/Reactor Low Level No. 2 signal could have occurred under reasonable and credible alternative conditions. Secondary Containment isolation from these signals is an anticipatory function. The design basis/function of Secondary Containment is to prevent the release of radioactive material. The redundancy for this function would have been provided by the Reactor Building Ventilation Exhaust radiation monitors.

Events involving previously unrecognized design concerns have been reported in LERs 1-88-032 and 034.