



**PSEG**

Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038

**Salem Generating Station**

December 3, 1993

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

Dear Sir:

SALEM GENERATING STATION  
LICENSE NO. DPR-70  
DOCKET NO. 50-272  
UNIT NO. 1

LICENSEE EVENT REPORT 93-017-00

This Licensee Event Report is being submitted pursuant to the requirements of Code of Federal Regulation 10CFR50.73(a)(2)(iv). This report is required to be issued within thirty (30) days of event discovery.

Sincerely yours,

C. A. Vondra  
General Manager -  
Salem Operations

MJPJ:pc

Distribution

100035

9312130423 931203  
PDR ADOCK 05000272  
S PDR

The power is in your hands.

**LICENSEE EVENT REPORT (LER)**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) <b>Salem Generating Station - Unit 1</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 2 7 2</b>	PAGE (3) <b>1 OF 0 5</b>
---	---	-----------------------------

TITLE (4)  
**ESF Actuation; Diesel Generator Blackout Signal Loading of 1B 4KV Vital Bus.**

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		
11	06	93	93	017	00	12	03	93			
									DOCKET NUMBER(S) <b>0 5 0 0 0</b>		

OPERATING MODE (9) <b>6</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) <b>0 0 0</b>	20.402(b)		20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)		73.71(b)			
	20.405(a)(1)(i)		50.36(c)(1)		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 <b>M. J. Pastva, Jr. - LER Coordinantor</b>	TELEPHONE NUMBER AREA CODE <b>6 0 9 3 3 ; 9 - 5 1 6 5</b>
---	---

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
--	--	-------------------------------	-------	-----	------

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

On 11/6/93, at 0859 hours, while attempting to transfer offsite power to 1B 4 Kilo Volt (KV) Vital Bus from 12 Station Power Transformer (SPT) to 13 SPT for testing, 13BSD (infeed breaker from 13 SPT) failed to close. This resulted in automatic starting and "blackout signal" loading of the bus from 1B Diesel Generator (D/G). 11th refueling outage was in progress with the Reactor defueled. Equipment functioned as required and spent fuel pit cooling was maintained during this event. At 0943 hours (same day), 13 BSD was closed to establish infeed power to the bus from 13 SPT and 1B D/G was secured and returned to standby. 13BSD had failed to close because the breaker control power was turned off. Root causes of this event are personnel error, inadequate communication, and procedure inadequacy due to insufficient detail in the test procedure. Discipline, in accordance with our Positive Discipline Program, has been conducted concerning the personnel error. An Information Directive will be provided to all appropriate personnel. The test procedure will be revised to provide adequate detail prior to implementation for Unit 2.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Salem Generating Station	DOCKET NUMBER	LER NUMBER	PAGE
Unit 1	5000272	93-017-00	2 of 5

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as {xx}

IDENTIFICATION OF OCCURRENCE:

Engineered Safety Feature Actuation; Diesel Generator Blackout Signal Loading of 1B 4 Kilo-Volt (KV) Vital Bus

Event Date: 11/6/93

Report Date: 12/3/93

This report was initiated by Incident Report No. 93-454.  
This event is reportable per 10CFR50.73(a)(2)(iv)

CONDITIONS PRIOR TO OCCURRENCE:

11th Refueling in progress; Reactor defueled.

4KV Vital Bus protective relay testing was in progress, which required aligning offsite power to the 4KV Vital Buses from newly installed 13 Station Power Transformer (SPT). This testing was complete for 1C 4KV Vital Bus {EB} and steps were in progress to align offsite power to 1B Vital Bus from 13 SPT. In addition, Diesel Generator (D/G) 1A {EK} was cleared and tagged for maintenance.

DESCRIPTION OF OCCURRENCE:

On November 6, 1993, at 0859 hours, while attempting to transfer offsite power to 1B 4KV Vital Bus from 12 SPT to 13 SPT, 13BSD (infeed breaker from 13 SPT) failed to close. This resulted in automatic starting and "blackout signal" loading of the bus from D/G 1B. At 0924 hours (same day) the Nuclear Regulatory Commission (NRC) was notified of this event, in accordance with 10CFR50.72(b)(2)(ii). At 0943 hours (same day), 13 BSD was closed to establish infeed power to the bus from 13 SPT and 1B D/G was secured and returned to standby.

ANALYSIS OF OCCURRENCE:

The Salem Safeguards Systems design basis includes the requirement that the station must be safely shutdown during a loss of coolant accident (LOCA) and a coincident loss of offsite power (Blackout). All electrical equipment needed during a LOCA is powered from the vital buses, which can be powered from the standby alternating current diesel generators. Safeguards Equipment Control (SEC) is a logic

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Salem Generating Station	DOCKET NUMBER	LER NUMBER	PAGE
Unit 1	5000272	93-017-00	3 of 5

ANALYSIS OF OCCURRENCE: (cont'd)

system, comprised of three control systems, that provide proper actions in response to any accident and/or blackout condition. Each SEC (A, B, or C) is physically and electrically isolated from the other, is associated with its own D/G and vital bus, and responds to accident (safety injection) and vital bus UV input signals. Based upon the combination of these signals, the respective SEC will actuate to strip the vital buses, start the D/Gs, and reload the vital buses.

The Unit 1 11th Refueling Outage was in progress with the Reactor defueled. In addition, Diesel Generator (D/G) 1A {EK} was cleared and tagged for maintenance. 4KV vital bus protective relay testing for newly installed 13 SPT was in progress, which required transferring offsite power to the 4KV Vital Buses (A, B, and C) from 12 SPT to 13 SPT in accordance with Operations procedures. Prior to the test, the 13 SPT 4KV infeed breakers (13ASD, 13BSD, and 13CSD) to the vital buses had been racked out and tagged. In preparation for transfer of 1C 4KV Vital Bus for testing, the tags on 13ASD, 13BSD, and 13CSD were pulled and the breakers were racked in and made ready. Following discussion between the Operating shift supervision and the Project Engineer, breakers 13ASD and 13BSD were left in the racked-in position with the control power turned off. 125VDC control power to 13ASD and 13BSD breakers was left turned off to ensure that a trip of 12 SPT would not result in automatic transfer of 4KV infeed power to 13 SPT before completion of testing on the 1A and 1B 4KV Vital buses. Verbalized plans, as a result of the aforementioned discussion, were to restore control power to each 13 SPT infeed breaker before testing the remaining 1A and 1B 4KV Vital Buses.

Following the above referenced bus alignment, testing recommenced at approximately 0700 hours on November 6, 1993, and 1C Vital Bus was successfully tested. Shortly before 0859 hours (same day), while attempting to transfer offsite power to 1B 4KV Vital Bus from 12 SPT to 13 SPT for testing the bus, 13BSD failed to close. This resulted in automatic starting and "blackout signal" loading of the bus from D/G 1B and appropriate entry into the abnormal operating procedures was made. The appropriate loads were automatically sequenced on by the SEC and spent fuel pit cooling remained in service.

Investigation determined that 13BSD had failed to close because the 125VDC control power to the breaker was turned off (125VDC breaker open).

Root causes of this event are personnel error, inadequate communication, and procedure inadequacy due to insufficient detail in the test procedure. Personnel error occurred when involved Operations supervision chose to rely upon verbal communication of the off normal

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Salem Generating Station	DOCKET NUMBER	LER NUMBER	PAGE
Unit 1	5000272	93-017-00	4 of 5

ANALYSIS OF OCCURRENCE: (cont'd)

control power status in place of administrative controls. The control power status was not communicated to the subsequent shift by the involved Operations Supervision and by the project team during shift turnovers. The test procedure did not provide specific instruction regarding the status of the individual infeed breakers from 13 SPT during the 4KV vital bus testing.

As a result of this event discipline, in accordance with our Positive Discipline Program, has been conducted concerning the personnel error. An Information Directive will be provided to all appropriate personnel, detailing this event. Additionally, the information directive will be reviewed with appropriate Engineering & Plant Betterment (E&PB) personnel. This LER will be reviewed as part of annual Operator training in 1994. In addition, this event will be included in the lesson plan for the Operator re-qualification cycle. The test procedure will be revised to provide adequate detail prior to implementation for Unit 2.

APPARENT CAUSE OF OCCURRENCE:

Root causes of this event are personnel error, inadequate communication, and procedure inadequacy due to insufficient detail in the test procedure.

PREVIOUS OCCURRENCES:

Review of documentation did not reveal a prior similar occurrence.

SAFETY SIGNIFICANCE:

This event did not affect the health and safety of the public. Equipment functioned as required and spent fuel pit cooling was maintained during this event.

CORRECTIVE ACTION:

Discipline in accordance with our Positive Discipline Program, has been conducted concerning the personnel error.

An Information Directive will be provided to all appropriate personnel, detailing this event. Additionally, the information directive will be reviewed with appropriate Engineering & Plant Betterment (E&PB) personnel.

This LER will be reviewed as part of annual Operator training in 1994. In addition, this event will be included in the lesson plan


LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Salem Generating Station	DOCKET NUMBER	LER NUMBER	PAGE
Unit 1	5000272	93-017-00	5 of 5

CORRECTIVE ACTION: (cont'd)

for the Operator re-qualification cycle.

The test procedure will be revised to provide adequate detail prior to implementation for Unit 2.

  
General Manager -  
Salem Operations

MJPJ:pc

SORC Mtg. 93-104