

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Shoreham Nuclear Power Station Unit #1	DOCKET NUMBER (2) 0 5 0 0 0 0 3 2 2	PAGE (3) 1 OF 0 5
---	--	----------------------

TITLE (4) Emergency Bus 101 deenergized due to personnel error during I&C surveillance test resulting in EDG start and load and numerous ESF actuations

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		
0 4	3 0	8 8	8 8	0 0 6	0 0	0 5	2 7	8 8	DOCKET NUMBER(S) 0 5 0 0 0 0		
									DOCKET NUMBER(S) 0 5 0 0 0 0		

OPERATING MODE (9) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)									
POWER LEVEL (10) 0 1 0 1 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	<input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 365A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER
NAME Robert W. Grunseich, Operational Compliance Engineer		AREA CODE 5 1 6 9 2 9 - 8 3 0 0

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	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

On April 30, 1988, at 1245, a loss of Emergency Bus 101 occurred with a subsequent start of EDG 101 and numerous ESF actuations due to personnel error. The plant was in Operational Condition 4 (Cold Shutdown) with the mode switch in Shutdown and all rods inserted in the core. An Instrument and Controls (I&C) technician was performing a surveillance test on the Emergency Bus Load Program (SP 44.309.04). By procedure, he lifted a lead to prevent the emergency bus 101 from becoming completely de-energized. Before going to lunch, the technician re-landed this lead to restore the Emergency Bus Program to normal. Following lunch, the technician forgot he had re-landed the lifted lead and proceeded as if the lead was lifted. At 1245, through relay actuation due to testing, the Emergency bus was de-energized. This resulted in the actuation of the Emergency Bus Program. The Emergency Diesel Generator (101) started and its output breaker closed on the de-energized emergency bus. Numerous ESF actuations also occurred. The diesel started and ran without incident for 45 minutes. The bus was returned to its normal power supply, all the affected systems returned to normal and the EDG shut down. The technician who performed this test was prohibited from any further testing pending further training and disciplinary action. Procedural revisions to SP 44.309.04 will be implemented to emphasize the operational impact of certain key steps in the procedure along with caution statements placed strategically throughout the procedure.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME:	DOCKET NUMBER:	LER NUMBER:			PAGE:	
		YEAR	SIGNIFICANCE	REVISION	OF	
Shoreham Nuclear Power Station Unit #1	0 6 0 0 0 3 2 2	8 8	- 0 0 6	- 0 0 0	2	OF 5

FILE IF PART OF A REPORT OR REPORTING PART: April 2004 (11)

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as [xx].

IDENTIFICATION OF THE EVENT

An Emergency Diesel Generator [DG] inadvertently started, along with numerous ESF actuations, during Emergency bus load sequences program testing [EK] due to personnel error. The bus was down powered and the emergency bus program started, which caused the diesel to start.

Event Date: 4/30/88

Report Date: 5/27/88

CONDITIONS PRIOR TO THE EVENT

Operational Condition - 4 (Cold Shutdown)

Mode Switch - Shutdown

RPV Pressure = 0 psig RPV Temperature = 107 degrees F

POWER LEVEL - 0

DESCRIPTION OF THE EVENT

On April 30, 1988 an I&C (Instrument and Control) Technician was performing Station Procedure (SP) 44.309.04 (4160 Volt Emergency Bus Load Sequence Program Calibration and Functional Check). He had performed a step in the procedure in which he lifted a lead to disable the 27/86 relay (a lock-out relay). When energized, this relay prevents any offsite power from supplying power to Bus 101. Rather than go to lunch and leave the Emergency Bus Program disabled, the technician re-landed the lifted lead, restoring power to the 27/86 relay and making the 101 Bus Emergency Bus Program operable. This step was performed out of sequence and he did not inform anyone that he had done this.

After lunch, the technician forgot that he had re-landed the lifted lead. He then placed a jumper to energize the 27 TDL relay which then actuated the undervoltage lock-out (27/86) relay, resulting in the de-energization of the Emergency Bus 101.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (4)		
		YEAR	SEQUENT. NUMBER	FILE NO.			
Shoreham Nuclear Power Station Unit #1	05000322	88	006	00	03	OF	05

*LF if more space is required use additional NRC Form 204's (17)

When the undervoltage lockout relay was energized, it moved to the lockout position. This caused a trip and lockout of the Normal Station Service transformer and Reserve Station Service transformer supply breakers to Bus 101. This resulted in a de-energized bus which actuated all the other associated undervoltage relays. These undervoltage relays actuated the Emergency bus program, which started EDG 101 and caused a half scram of the reactor and certain ESF actuations.

The lack of supply power to the Emergency Bus 101 caused the 'A'RPS MG set to trip. This caused a half scram and the following ESF actuations:

Half of an NS4 (Nuclear Steam Supply Shutoff System) [JM] isolation, RWCU (Reactor Water Clean Up) [CE] isolation, 'A' RBSVS (Reactor Building Standby Ventilation System) [VA] initiation, 'A' CRAC (Control Room Air Conditioning) [BH] initiation, 'A' RBCLCW (Reactor Building Closed Loop Cooling Water) [CC] split, RBSW (Reactor Building Service Water [B1]) split.

All of the ESF actuations occurred as designed and without any problems. The bus de-energization also caused EDG 101 to start and its associated output breaker to close on the bus. It then picked up minimal load (<500 KW), due to loads being tripped off and various supply breakers being open because of lack of bus voltage and ran without incident.

When the Control Room was notified by the technician what had happened, the alternate power supply to the 'A' RPS bus was energized. The 1/2 scram was reset at 1247, and the ESFs returned to normal.

At 1323, 38 minutes after the incident the NSST started supplying normal power to the emergency bus. The EDG was shutdown at 1331. Plant Management was notified at 1351 and the NRC was notified per 10CFR50.72 at 1357.

CAUSE OF THE EVENT

The cause of the event was personnel error. The technician deviated from the procedure and forgot work that he had done prior to going to lunch. Instead of relifting the lead to the 27/86 relay, he resumed his place where the lead should have been lifted. He re-performed a part of the test which caused, through relay actuation, the entire bus to have an unplanned de-energization.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME:	DOCKET NUMBER:	LER NUMBER IS:			PAGE IS:		
		YEAR	SIGNIFICANCE NUMBER	PRECEDENCE NUMBER			
		0 5 0 0 0 3 2 2 8 8	- 0 0 6	- 0 0 0 4	OF	0 5	

Shoreham Nuclear Power Station Unit #1

NOTE: If more space is required use additional NRC Form 200A (11).

The technician had initialled that he had lifted the lead and when he re-landed it prior to going to lunch, he was performing a step out of sequence. When he returned from lunch, he resumed the surveillance from where he had left off, not accounting for the step that was performed out of sequence. He never notified the Watch Engineer that he landed the lead (or performed a step out of sequence) or that the emergency bus program was operable. The precaution section of the procedure requires that the steps are to be performed in sequence and to notify the Watch Engineer if any problem develops during the performance of the test.

He was fully qualified to perform this surveillance and others like it.

ANALYSIS OF THE EVENT

This event resulted in an unplanned diesel start and numerous ESF actuations and is reportable per 10CFR50.73(b)(2)(iv). There was minimal safety significance to the event. The Emergency Diesel Generator operated as designed. All other Safety systems that initiated performed as designed. Operators carried out all the required actions utilizing the appropriate procedures. Had this event occurred under a more severe set of circumstances (5% power) there would still be minimal safety significance.

CORRECTIVE ACTIONS

1. The Technicians' Surveillance Testing Qualification was revoked until successful completion of remedial training.
2. Recommendations for appropriate disciplinary action against the Technician will be made by members of Plant Management.
3. The discussion section of SP 44.309.04 (4160 Volt Emergency Bus Load Sequence Program Cal & Funct) will be expanded to emphasize the operational impact (and potential) of certain key procedural steps. The overall test methodology will be explained.
4. CAUTION statements will be placed strategically throughout the procedure, just prior to certain steps that have potential operational impact.
5. The procedure and basic procedural methodology will be re-evaluated to consider disabling the emergency bus program at the beginning of the procedure.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER NO.			PAGE (3)		
		YEAR	SIGNIFICANT NUMBER	SEQUENCE NUMBER			
Shoreham Nuclear Power Station Unit #1	05000322	88	-006	-00	05	OF	05

1. If more space is required use additional NRC Form 204 (1/84).

ADDITIONAL INFORMATION

a. Manufacturer & model number of failed component (s)

None

b. LER numbers of previous similar events

87-026



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION • P.O. BOX 628 • WADING RIVER, NEW YORK 11792

TEL. (516) 929-8300

May 27, 1988

PM-88-155

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

Dear Sir:

In accordance with 10CFR50.73, enclosed is Shoreham Nuclear Power Station's Licensee Event Report LER 88-006.

Sincerely yours,

William E. Steiger, Jr.
Plant Manager

WES/pz

Enclosure

cc: William T. Russell, Regional Administrator
Frank Crescenzo, Resident Inspector
Institute of Nuclear Power Operations, Records Center
American Nuclear Insurers

SR.A21.0200

IE22
11