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)
Shoreham Nuclear Power Station Unit #1	0 5 0 0 0 3 2 2	1 OF 0 2

TITLE (4)
High Pressure Coolant Injection/Circuit Inverter Failure

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	0 7	8 5	8 5	0 1 3	0 0	0 4	3 0	8 5		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)											
4		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)				
POWER LEVEL (10)		20.405(a)(1)(i)		50.36(c)(1)	X	50.73(a)(2)(v)		73.71(c)				
0 0 0		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
Gary G. Rhoads, 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	
X	B J	I N V T	T 2 4 8	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 April 7, 1985 at 1735, a failure of the High Pressure Coolant Injection (HPCI) Circuit Inverter caused a loss of power to the HPCI system controls, making the system inoperable. In addition, the Safety Relief Valve (SRV) tailpipe indicators also experienced a loss of power. The plant was in Operational Condition 4, a condition not requiring the HPCI system or the SRVs to be operational. The inverter (E41*K603) supplies power to various HPCI controls and the SRV tailpipe pressure indicators. The probable cause of the event was the failure of a cooling fan located on the inverter causing the inverter cabinet to overheat. This resulted in the overheating of a resistor and a capacitor in the inverter circuitry. An approved Maintenance Work Request (MWR) was issued to investigate and correct the problem. The fan, capacitor and the resistor were replaced and the inverter was placed back into service on April 10. To prevent recurrence, an Instrument and Controls (I&C) procedure, SP 46.007.01 (Topaz Electronic Static Inverter Calibration), will be revised to incorporate the periodic inspection of all cooling fans in the plant associated with Topaz Inverters.

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(9-83)

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Shoreham Nuclear Power Station Unit #1	0 5 0 0 0 3 2 2	8 5	— 0 1 3	— 0 0	0 2 OF 0 2

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

On April 7, 1985 at 1735, a failure of the High Pressure Coolant Injection (HPCI) Circuit Inverter caused a loss of power to the HPCI system controls, rendering the HPCI system inoperable. In addition, the Safety Relief Valve (SRV) tailpipe pressure indicators also experienced a loss of power. The plant was in Operational Condition 4, a condition not requiring the HPCI system or the SRVs to be operational. The" HPCI System Inop" alarm was sealed in due to the reactor pressure being below 150 psig.

The HPCI Circuit Inverter (E41*K603) is a Topaz Inverter and is located in the Control Room in the back of panel H11*P601. The purpose of the inverter is to take 125 VDC power from the Emergency Battery Supply (Bus "B") and convert this power to 120 VAC. The output of the inverter is then rectified to 24 VDC and 48 VDC and powers the HPCI turbine speed controls, HPCI logic unit, HPCI manual control unit, HPCI flow controls and the SRV pressure indicators.

Control Room Operators received a "HPCI Circuit Inverter Power Failure" alarm and upon investigating, smelled an acrid odor emanating from the back of panel H11*P601. The panel was opened and the operator noticed that the inverter was too hot to touch. The operator opened the circuit breaker to deenergize the inverter.

An approved Maintenance Work Request (MWR), issued to investigate the cause, determined that the apparent cause of the Inverter failure was a failure of a cooling fan physically located on the side of the inverter. The fan is used to circulate air through the cabinet to cool the inverter and its circuitry. The heat buildup was sufficient enough to allow a capacitor to fail and cause a resistor in the circuit to burn. This resulted in the failure of the Inverter. The components were replaced (fan, capacitor, and resistor), the inverter was tested, and was placed back into service on April 10, 1985.

During a meeting with the Instrument and Controls (I&C) section on April 7, 1985, the incident was discussed in detail. To prevent recurrence, the following action will be taken;

* Procedure SP 46.007.01(Topaz Electronic Static Inverter Calibration) will be revised to incorporate the periodic inspection of all cooling fans associated with Topaz Inverters in the plant. These changes will be completed by June 14, 1985.

LONG ISLAND LIGHTING COMPANY

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

TEL. (516) 929-8300

April 30, 1985

PM 85-066

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

Dear Sir:

In accordance with 10CFR50.73, enclosed is a copy of Shoreham Nuclear Power Station Unit 1's License Event Report 85-013.

Sincerely yours,

William E. Steiger, Jr.
Plant Manager

WES/gr

Enclosure

cc: Dr. Thomas E. Murley, Regional Administrator
Peter Eselgroth, Senior Resident Inspector
Institute of Nuclear Power Operations, Records Center
American Nuclear Insurers

SR.A21.0200

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