

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Indian Point, Unit 3										DOCKET NUMBER (2) 05000286										PAGE (3) 1 OF 2							
TITLE (4) Inadvertent Subcritical Safety Injection Actuation While Trouble Shooting Inverter																											
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									
09		03		87		87		010		00		10		05		87		DOCKET NUMBER (S) 050000									
09		03		87		87		010		00		10		05		87		DOCKET NUMBER (S) 050000									
OPERATING MODE (9)		N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																							
POWER LEVEL (10)		000		20.402(b)						20.406(c)						X 80.73(a)(2)(iv)						73.71(b)					
				20.406(a)(1)(i)						80.36(c)(1)						80.73(a)(2)(iv)						73.71(c)					
				20.406(a)(1)(ii)						80.36(c)(2)						80.73(a)(2)(vii)						OTHER (Specify in Abstract below and in Text, NRC Form 365A)					
				20.406(a)(1)(iii)						80.73(a)(2)(iii)						80.73(a)(2)(viii)(A)											
				20.406(a)(1)(iv)						80.73(a)(2)(iv)						80.73(a)(2)(viii)(B)											
				20.406(a)(1)(v)						80.73(a)(2)(iii)						80.73(a)(2)(i)											
LICENSEE CONTACT FOR THIS LER (12)																											
NAME Maryanne F. Paluck - Assistant Plant Engineer														TELEPHONE NUMBER AREA CODE 914 736-8344													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC			
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)

At 2336 hours on September 3, 1987, with the reactor subcritical, the Reactor Operator was in the process of manually inserting control rods in order to shutdown for turbine maintenance. During the course of this shutdown a reactor trip and Safety Injection (SI) actuation occurred automatically and all equipment functioned properly. No water was injected into the reactor because the Reactor Coolant System (RCS) was at normal operating pressure. Investigation revealed that, while trouble shooting No. 32 static inverter, an operator inadvertently interrupted the power supply to instrument bus 32 (Protection Channel I), causing its voltage to drop to zero. The loss of power to instrument bus 32 (Protection Channel I) caused associated reactor protection relays to de-energize and initiated a reactor trip via the Nuclear Instrumentation System (NIS) Intermediate Range 35 High Flux Signal. Due to the de-energization of Protection Channel I, all SI relays associated with Protection Channel I steam flow transmitters and low Taverage for RCS loop 1 also de-energized. The remaining portion of the SI logic was made up when the actual RCS loop 2 Taverage decreased below the low set-point (542°F) for SI actuation. In order to preclude recurrence, a discussion of this event will be incorporated into the Licensed Operator requalification program. Instrument bus power supplies (normal and backup) and inverter operations will also be emphasized at this time.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Indian Point, Unit 3	0500028687	—	010	—	00	02	OF 02

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

At 2336 hours on September 3, 1987, with the reactor subcritical, the Reactor Operator was in the process of manually inserting control rods in order to shutdown for turbine maintenance. During the course of this shutdown a reactor trip and Safety Injection (SI) actuation occurred automatically. Just prior to 2336 hours, No. 32 static inverter was taken out of service by opening its output breaker to diagnose an instability problem. No. 32 static inverter normally supplies power to instrument bus No. 32. At this time, however, power was being supplied to instrument bus 32 through the No. 32 static inverter maintenance bypass switch. An operator, while troubleshooting No. 32 static inverter, did not recognize that the output breaker on No. 32 static inverter was opened when he opened the maintenance bypass switch to take final voltage readings. This action caused instrument bus 32 voltage to drop to zero.

The loss of power to instrument bus 32 (Protection Channel I) caused associated reactor protection relays to de-energize and initiated a reactor trip via the Nuclear Instrumentation System (NIS) Intermediate Range 35 High Flux signal. All equipment functioned properly for the reactor trip. Approximately three minutes after the reactor trip a "High Steam Flow" SI actuation occurred and all equipment functioned properly for the SI. No water was injected into the reactor because the Reactor Coolant System (RCS) was at normal operating pressure.

This "High Steam Flow" SI actuation signal requires that steam flow be greater than a programmed set-point for steam flow on at least one of two transmitters in at least two of four steam lines, concurrent with either low steam generator pressure (less than 616 psig in at least two of four steam generators) or low Taverage (less than 542°F in at least two of four RCS loops). The first half of the logic was satisfied when the loss of power to instrument bus 32 caused all SI relays associated with Protection Channel I steam flow transmitters to de-energize. The remaining half of the logic was satisfied when the loss of power to instrument bus 32 caused the SI logic relay associated with low Taverage for loop 1 to de-energize coincident with actual RCS loop 2 Taverage decreasing below the low set-point of 542°F. Power was restored to instrument bus 32 by reclosing the maintenance bypass switch on No. 32 static inverter at approximately 2353 hours.

In order to preclude recurrence, a discussion of this event will be incorporated into the Licensed Operator requalification program. Instrument bus power supplies (normal and backup) and inverter operations will also be emphasized at this time.

No similar events have been reported in an LER to date. After turbine repairs were made, the generator was synchronized to the bus on September 5, 1987 at 1125 hours. This event is reportable under 10CFR50.73 (a)(2)(iv) as an engineered safety feature actuation.

Indian Point 3
Nuclear Power Plant
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October 5, 1987
IP3-87-059Z
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Docket No. 50-286
License No. DPR-64

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

Dear Sir:

The attached Licensee Event Report LER 87-010-00 is hereby submitted in accordance with the requirements of 10CFR50.73. This event is of the type defined in Paragraph 50.73 (a) (2) (iv).

Very truly yours,

A handwritten signature in black ink, appearing to read 'William A. Josiger', written over the typed name.

William A. Josiger
Resident Manager
Indian Point 3 Nuclear Power Plant

JJA:sn:LER3:10
Attachment

cc: Mr. William Russell
Regional Administrator
Region 1
U.S. Nuclear Regulatory Commission
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