

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914.739.8200



**New York Power
Authority**

February 24, 1992
IP3-NRC-92-013

Docket No. 50-286
License No. DPR-64

Document Control Desk
Mail Station PI-137
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Sir:

The attached Licensee Event Report LER 92-002-00 is hereby submitted in accordance with the requirements of 10CFR50.73. This event is of the type defined in the requirements per 10CFR50.73(a)(2)(i).

Very truly yours,

A handwritten signature in dark ink, appearing to read 'J. E. Russell', written over the typed name.

Joseph E. Russell
Resident Manager
Indian Point Three Nuclear Power Plant

jer/ed/rj
Attachment

cc: Mr. Thomas T. Martin
Regional Administrator
Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

200053

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Handwritten initials/signature

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Indian Point Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6	PAGE (3) 1 OF 0 5
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TITLE (4)
Inoperable Safeguards Components Due to Faulted Indicating Lamp

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 1	2 3	9 1 2	9 2	0 0 2		0 0	2 4	9 2			0 5 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)											

OPERATING MODE (9) N	POWER LEVEL (10) 1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.406(a)(1)(i)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.406(a)(1)(ii)	50.38(c)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.406(a)(1)(iii)	X 60.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Edward Diamond, Senior Plant Engineer	TELEPHONE NUMBER
	AREA CODE: 9 1 4 7 3 1 6 8 1 0 4 5

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
X	B-A	I L		N					

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

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

On January 23, 1991, with the reactor operating at 100 percent power, an indicating lamp on the auxiliary boiler feed pump local control panel electrically faulted. As a result, a six and one-quarter ampere control power fuse blew, rendering the automatic initiation feature of safeguards equipment on 480 volt vital bus 5A inoperable. The Technical Specification limiting conditions for operation action statement for containment cooling and iodine removal systems was entered. A plant shutdown was started and an unusual event declared. The faulted lamp socket leads were lifted via a temporary modification, clearing the electrical fault. The fuse was replaced. The plant shutdown and unusual event were terminated. Corrective actions include replacing the lamp socket during the next refueling outage, re-evaluating qualified fuse inventories, and considering use of lamp sockets with current limiters or bulb replacement with LEDs.

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

DESCRIPTION OF THE EVENT

On January 23, 1992 at 1045 hours, with the reactor at 100 percent power, technicians were performing surveillance procedure 3PT-M13B, "Reactor Protection Logic Channel Functional Test Train B." The technicians were performing the steam generator low-low level portion of the test. In accordance with the procedure, a control room operator placed the control switch for valve PCV-1139, the steam supply pressure regulating valve to #32 auxiliary boiler feed pump (ABFP), in the "trip" position following the start of the pump. An annunciator window, "safeguards initiation racks or 480V switchgear sequence DC power failure" alarmed and control room operators noticed that the run and trip indicating lights for #32 ABFP were not illuminated. The operators also noted that the normally illuminated "non-SI blackout logic defeated" light associated with #33 emergency diesel generator (EDG) had extinguished. No safeguards equipment actuated. The control room operators entered alarm response procedure ARP-4, "Supervisory Panel SB-1" to address the "safeguards initiation racks or 480V switchgear sequence DC power failure" alarm. In accordance with ARP-4, Instrumentation and Controls (I&C) Department personnel were summoned to investigate the cause of the alarm.

At about 1130 hours the I&C investigation determined that the six and one-quarter ampere fuse on the positive leg of the DC control power circuit associated with the 480 volt vital bus 5A safeguards sequencing circuitry had blown. Further investigation revealed that the automatic safeguards initiation sequence for 480 volt vital bus 5A was inoperable. All equipment on 480 volt vital bus 5A that comprise the automatic safeguards initiation sequence on that bus were also considered inoperable because of the absence of their automatic start capability. All equipment on 480 volt vital bus 5A was capable of being manually started from the control room throughout the event. The affected equipment consisted of:

- o 31 safety injection pump
- o 31 containment spray pump
- o 31 containment fan cooler unit
- o 33 containment fan cooler unit
- o 34 essential service water pump
- o 31 component cooling water pump

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The continuing investigation by I&C and operations personnel located the cause of the blown fuse. The lamp and socket for the #32 ABFP "off" indicating lamp and socket at the ABFP room local control station had electrically faulted.

At 1240 hours the staff determined that the plant was required to be brought to hot shutdown within four hours because Technical Specifications for containment cooling and iodine removal systems were not satisfied. At 1256 hours the plant shutdown was started and a notification of unusual event (NUE) declared in accordance with the Site Emergency Plan. All required notifications were made.

The faulted lamp socket leads were lifted via a temporary modification, clearing the electrical fault. An equivalent fuse with Cat I qualification was unavailable. The Procurement Engineering Group completed the documentation and analysis to dedicate a replacement fuse as category I. Operators replaced the fuse at 1403 hours to restore the automatic safeguards initiation sequence for 480 volt vital bus 5A. The system was successfully retested, and at 1430 hours the related safeguards equipment was declared operable. The NUE and the plant shutdown were terminated at 77% reactor power, 760 MWe. A load ascension to full power was initiated.

CAUSE OF THE EVENT

The cause of the event was the electrical fault that developed at the lamp socket for the #32 ABFP "off" indicating lamp at the ABFP room local control station.

CORRECTIVE ACTIONS

I&C technicians lifted the leads from the faulted lamp socket via a temporary modification, clearing the electrical fault.

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

Operators installed a qualified replacement fuse at 1403 hours. The system was successfully retested, and at 1430 hours the related safeguards equipment was declared operable.

Long term corrective actions include the following:

- o Technicians will replace the damaged lamp socket during the upcoming refueling outage (April 1992).
- o The Power Authority will re-evaluate qualified fuse availability.
- o The plant staff will investigate the feasibility of using current limiting indicator lamp assemblies or replacing the light bulbs with light emitting diodes (LEDs) in the safeguards initiation racks. (Current limiting lamp assemblies or the use of LEDs both would limit short circuit current in a fault.)

ANALYSIS OF THE EVENT

This event is reportable under 10CFR50.73(a)(2)(i)(B), the plant was operated in a condition prohibited by the facility's Technical Specifications. Technical Specification 3.3.B.1. lists containment cooling and iodine removal systems' components required to be operable before bringing the plant above the cold shutdown condition. Specification 3.3.B.2 allows modification of that specification by permitting any one component of five containment recirculation fans and two containment spray pumps to be inoperable. During the one hour and fifty minutes that the 480 volt vital bus 5A safeguards sequencing circuitry was inoperable, 31 containment spray pump, 31 containment fan cooler unit, and 33 containment fan cooler unit did not have automatic start capability and did not satisfy the "operable" definition.

During the one hour and fifty minute period that the 480 volt vital bus 5A safeguards sequencing circuitry was inoperable, the safeguards sequencing circuitry was operable for the other, redundant 480 volt vital buses 2A, 3A, and 6A. Loss of a single vital bus is a postulated single failure considered in the Final Safety Analysis Report and is within the design bases of the plant. The loss of the automatic start capability for the 480 volt vital bus 5A safeguards equipment is equivalent to the loss

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of a vital bus. Manual, remote operation of the above components was unaffected by the event. Had an accident occurred during the period that the 480 volt vital bus 5A safeguards sequencing circuitry was inoperable, Emergency Operating Procedures would have directed operators to manually operate these components to mitigate the severity of the accident.

A similar event was reported in LER 50-286-91-11.

SECURING FROM THE EVENT

Instrumentation and controls technicians lifted the faulted lamp socket leads via a temporary modification, clearing the electrical fault. Operators replaced the blown fuse at 1403 hours on January 23, 1992 to restore the automatic safeguards initiation sequence for 480 volt vital bus 5A. The system was successfully retested, and at 1430 hours the related safeguards equipment was declared operable. The NUC and the plant shutdown were terminated. Power had been reduced to 77%, 760 MWe when the shutdown was terminated. A load ascension to full power was initiated. Reactor power was returned to 100% at 2020 hours on January 23, 1992.