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April 17, 1995

Re: Indian Point Unit No. 2  
Docket No. 50-247  
LER 95-09-00

Document Control Desk  
US Nuclear Regulatory Commission  
Mail Station P1-137  
Washington, DC 20555

The attached Licensee Event Report LER 95-09-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,



Attachment

cc: Mr. Thomas T. Martin  
Regional Administrator - Region I  
US Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

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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) Indian Point Unit No. 2						DOCKET NUMBER (2) 0 5 0 0 0 2 4 7 1				PAGE (3) 0 4	
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TITLE (4)  
Auto-Start of Emergency Diesels

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)
03	17	95	95	009	00	04	17	95			05000

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)	20.405(c)	XX	60.73(a)(2)(iv)	73.71(b)						
	20.405(a)(1)(i)	60.38(c)(1)		60.73(a)(2)(v)	73.71(c)						
	20.405(a)(1)(ii)	60.38(c)(2)		60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.405(a)(1)(iii)	60.73(a)(2)(i)		60.73(a)(2)(viii)(A)							
	20.405(a)(1)(iv)	60.73(a)(2)(iii)		60.73(a)(2)(viii)(B)							
20.405(a)(1)(v)	60.73(a)(2)(iii)		60.73(a)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)						TELEPHONE NUMBER					
NAME James Maylath, Senior Engineer						AREA CODE 9 1 4 7 3 4 - 5 3 5 6					

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 March 17, 1995, during a refueling outage with the reactor at cold shutdown and all fuel out of the reactor, a 6.9kV bus feed breaker tripped open causing a loss of power to two 6.9kV buses. This resulted in a loss of power to two 480V buses that were being supplied by the 6.9kV buses. At this time the normal source of offsite power, the 138/6.9kV Station Auxiliary Transformer, was out of service for scheduled maintenance. Offsite power was being supplied from an alternate source through a 13.8/6.9kV transformer. The loss of power to the 480V buses initiated the start up of the emergency diesels. A diesel was manually tied into each of the 480V buses that had lost power. Spent fuel pool cooling capability was temporarily lost with the loss of power to the 480V buses, but power and capability were restored within a few minutes. Service water and component cooling water flow were maintained during this event. Offsite power was restored approximately three hours later. The two diesels which were supplying the two 480V buses were then secured.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

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0 5 0 0 0 2 4 7

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95	009	00	02	OF	04

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

**PLANT AND SYSTEM IDENTIFICATION:**

Westinghouse 4-Loop Pressurized Water Reactor

**IDENTIFICATION OF OCCURRENCE:**

Auto-Start of Emergency Diesels

**EVENT DATE:**

March 17, 1995

**REPORT DUE DATE:**

April 17, 1995

**REFERENCES:**

Significant Occurrence Report (SOR) 95-203 and follow-up review.

**PAST SIMILAR OCCURRENCE:**

LER 91-005 and 93-008

**DESCRIPTION OF OCCURRENCE:**

On March 17, 1995 at approximately 2210 with the unit in cold shutdown for refueling and all fuel out of the reactor, 6.9kV bus breaker GT26 tripped open. This resulted in the temporary loss of power to 6.9kV Buses 3 and 6 and 480V Buses 3A and 6A which were being supplied by Buses 3 and 6 respectively. At this time the 138/6.9kV Station Auxiliary Transformer, which is the normal source of offsite power, was out of service for scheduled maintenance. 13.8kV offsite power from Buchanan Substation was being supplied through the 13.8/6.9kV transformer at the Gas Turbine No. 1 Substation. The gas turbines were not being used during the time of the event. This offsite power was being fed to 6.9kV Buses 2 and 5 through breaker GT25 and to 6.9kV Buses 3 and 6 through breaker GT26 which tripped. Power to 480V Buses 2A and 5A remained from 6.9kV Buses 2 and 5. The loss of power to 480V Buses 3A and 6A resulted in the automatic starting of the three Emergency Diesel Generators (EDG's). Within a few minutes, EDG 22 was manually connected to 480V Bus 3A and EDG 23 was manually connected to 480V Bus 6A. Spent fuel pool cooling capability was temporarily lost with the loss of power to 480V Bus 6A, but it was restored when its associated motor control center was reset a few minutes after power was restored to Bus 6A from EDG 23. Service water and component cooling water flow were maintained during this event.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 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.

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

**DESCRIPTION OF OCCURRENCE:** (Continued)

At approximately 0015 hours on March 18, 1995, EDG 21 was secured as offsite power continued to supply 480V Buses 2A and 5A through breaker GT25 which remained closed. At approximately 0120 hours, breaker GT26 was reclosed restoring the 13.8kV offsite power supply to 6.9kV Bus 6. Also, 6.9kV Bus 3 was energized with the closing of the 6.9kV bus tie breaker. The station service breakers from Buses 3 and 6 were then closed. Approximately 15 minutes later, the normal supply breaker (6A) to 480V Bus 6A was synchronized to EDG 23 and closed. EDG 23 was subsequently secured. At approximately 0150 hours, the normal supply breaker (3A) to 480V Bus 3A was synchronized to EDG 22 and closed. EDG 22 was subsequently secured.

**ANALYSIS OF OCCURRENCE:**

This report is being made because actuation of an Engineered Safety Features System (ESF) occurred. Any manual or automatic actuation of an ESF is reportable under 10 CFR 50.73(a)(2)(iv). There were no adverse safety implications as a result of this event. All ESF performed as expected. No measurable increase in the spent fuel pool temperature was detected during the course of this event. Service water and component cooling water flow were not impacted by this event. This event did not result in any personnel injury or damage to equipment.

**CAUSE OF OCCURRENCE:**

When breaker GT26 tripped, there were no lock-out relay actuations which indicated the cause of the trip. There was no indication of a disturbance on the 13.8kV System. Maintenance, which included trip checks, had just been completed in the 6.9kV switchgear alleyway at the time of the trip. None of this work was on the GT26 breaker. The GT26 breaker can be automatically tripped from lock-out relays at Gas Turbine No. 1 or by a latching relay which is actuated by a lock-out relay which in turn is tripped by protective relays associated with 6.9kV Bus 6 (no manual actions had been taken which would have tripped the breaker). Any operation of the lock-out relays at Gas Turbine No. 1 would have sent a trip signal to breakers GT25 and GT26 to protect the gas turbine. Only breaker GT26 tripped, and there was no indication that these lock-out relays had operated (the gas turbines were not running at the time of the event). Any operation of the other lock-out relay, 86/ST6, would have actuated the latching relay, 86X/ST6, which would have tripped breaker GT26. There was no indication of any operation of the 86/ST6 lock-out relay or of any of the protective relays that would cause an operation of the 86/ST6 relay.

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TEXT CONTINUATION**

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

**CAUSE OF OCCURRENCE:** (Continued)

We do not have conclusive evidence for the cause of the tripping of breaker GT26, but we believe the most probable cause to be a momentary actuation of the 86X/ST6 latching relay. Since the 86/ST6 relay was not in the tripped position, the latching relay would have reset upon actuation because there is a normally closed contact of the 86/ST6 relay in the 86X/ST6 latching relay reset circuit. The cause of any momentary actuation of the 86X/ST6 latching relay is not yet known. An inadvertent bumping of the breaker cubicle could cause a momentary actuation of the latching relay. At the time of the event, work had just been completed in the 6.9kV switchgear area, and personnel were leaving the area.

**CORRECTIVE ACTION:**

Upon the loss of power to 6.9kV Buses 3 and 6 and 480V Buses 3A and 6A, EDG 22 was manually connected to 480V Bus 3A and EDG 23 manually was connected to 480V Bus 6A restoring power to the buses. Following the trip, an investigation was made on breaker GT26 and its associated control and protective relay circuits. Upon verification that there was no fault in the 6.9kV, 13.8kV or Gas Turbine Systems, breaker GT26 was reclosed restoring offsite power to 6.9kV Buses 3 and 6 and 480V Buses 3A and 6A. The EDG's were then secured.

Investigation of the event determined that there was no fault or disturbance on the 6.9kV, 13.8kV or Gas Turbine Systems which could have caused the breaker to open (there had been no protective relay targets or indication of lock-out relay actuations). Additional investigation of the 86X/ST6 latching relay and associated lock-out and protective relays was made but was still inconclusive. This included repeating the trip checks which were done just prior to the event. This time all equipment operated as expected.

The possibility of the breaker cubicle having been bumped remains, although no one was aware of that having occurred. Following a similar event in 1991 on a 6.9kV breaker, the General Employee Training Program was revised to address the consequences of bumping into plant components. Since then the STAR Program (STOP-THINK-ACT-REVIEW - this is a work practice which uses self-checking as a personal tool to reduce the potential for inappropriate actions) has been implemented, and emphasis of the possible adverse consequences of bumping into plant equipment has continued through the present refueling outage.