

LICENSEE EVENT REPORT (LER)

APPROVED OMS NO. 3160-0104 EXPIRES - 8/31/85

FACILITY NAME (1) Indian Point Unit No. 2		DOCKET NUMBER (2) 0 5 0 0 0 2 4 7	PAGE (3) 1 OF 0 4
TITLE (4) Potential Loss of EDG Building Ventilation System			

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)									
1	1	0	2	8	8	8	8	8	8	8	8	8	8	0	5	0	0	0		
														0	5	0	0	0		

OPERATING MODE (9) N

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10-CFR 5: (Check one or more of the following) (11)

20.402(b)	<input type="checkbox"/>	20.406(c)	<input 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(a)(1)	<input checked="" type="checkbox"/>	50.73(a)(2)(v)	<input checked="" type="checkbox"/>	73.71(c)	<input type="checkbox"/>
20.406(a)(1)(ii)	<input type="checkbox"/>	50.36(a)(2)	<input checked="" type="checkbox"/>	50.73(a)(2)(vi)	<input type="checkbox"/>	OTHER (Specify in Abstract below and in Text, NRC Form 306A)	<input type="checkbox"/>
20.406(a)(1)(iii)	<input type="checkbox"/>	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(vii)(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)(A)	<input type="checkbox"/>		
20.406(a)(1)(v)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)(B)	<input type="checkbox"/>		
20.406(a)(1)(vi)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)(C)	<input type="checkbox"/>		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Jude G. Del Percio, Manager, Regulatory Affairs	AREA CODE: 9 1 4 5 2 6 T 5 1 2 7

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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (16)

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 words, i.e., approximately fifteen single-space typewritten lines) (18)

As a result of questions raised at an NRC Inspection during the week of October 17, 1988 it has been determined that a single failure could cause a loss of air supply to the pneumatic controls of the Emergency Diesel Generator (EDG) Building Ventilation System. This loss of air supply could disable the entire ventilation system. With high outdoor temperatures during the summer months, a loss of ventilation coincident with the operation of the EDGs could cause high internal temperatures in the EDG Building which could degrade EDG components and render the EDGs inoperable. Due to the cooler outdoor temperatures now existing, the EDGs are presently operable and would remain so following loss of air supply to the pneumatic controls. Administrative controls are now in effect and hardware modifications are being developed to correct this condition. There was no adverse impact on public health and safety.

Handwritten initials/signature

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Indian Point Unit No. 2	0500024788	88	017	00	02	04

TEXT (if more space is required, use additional NRC Form 366a) (17)

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse Four Loop Pressurized Water Reactor
Emergency Diesel Generator (EDG) Building Ventilation System

IDENTIFICATION OF OCCURRENCE:

Potential degradation of EDGs during hot weather due to loss of ventilation system function

REPORTABILITY DETERMINATION DATE:

November 2, 1988

REPORT DUE DATE:

December 1, 1988

REFERENCES:

Information Notice 87-09, Inspection Report 247/87-32 (Issue 247/87-32-07), Inspection 247/88-30 and SOR 88-573 (dated November 2, 1988)

PAST SIMILAR OCCURRENCES:

None

DESCRIPTION OF OCCURRENCE:

EDG ventilation is discussed in NRC Information Notice 87-09. In a 1987 NRC Inspection Report (247/87-32) our review of Notice 87-09 was left as an unresolved matter.

Then, based on questions raised by the NRC during an Inspection (88-30) carried out during the week of October 17, 1988, we performed an engineering analysis of the capability of the ventilation system to maintain the EDG building internal temperature at or below the continuous rated temperature of the electronic equipment associated with EDG operation. The ventilation system is pneumatic operated (i.e., the intake and exhaust dampers are operated by pneumatic actuators and the fans are energized via pneumatic switches). Due to

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TEXT (if more space is required, use additional NRC Form 366A (17))

DESCRIPTION OF OCCURRENCE: (continued)

the two pressure regulator valves in the supply line from the safety-related air supply to the pneumatic controls, it has been postulated that failure of one of these valves could prevent the ventilation system from operating as intended. Therefore, this analysis resulted in hotline notification of the NRC pursuant to 10CFR50.72.

CAUSE OF INITIATING EVENT:

The EDG Building Ventilation System, designed by the plant architect/engineer United Engineers and Constructors in the 1960s, is inadequate under present NRC criteria. This design could potentially degrade EDG operation during summer hot weather as a result of the potential for the intake and exhaust damper pneumatic actuators to fail in the closed position and the potential for the fan pneumatic switches to fail in the open position.

ANALYSIS OF OCCURRENCE:

During an NRC Inspection the week of October 17, 1988, the NRC reviewed the EDG Building Ventilation System and postulated a scenario in which the three EDGs have the potential of becoming degraded due to failure of the air supply to the pneumatic controls of the ventilation system.

The five fans are on two safety-related busses (three on one bus, two on the other bus) and equipped with interlocked low-voltage relays to have all five fans on one of the busses if necessary. The thermostatic switches to actuate the fans are pneumatically controlled. In addition, the supply and exhaust dampers all have "fail-close" pneumatic actuators. The intake dampers always remain partially open to provide sufficient combustion air to the EDGs, which take air from inside the building.

Therefore, it is postulated that during hot weather, the EDGs would start and run. However, if due to the loss of air supply, the ventilation system does not operate (either initially or sometime during EDG operation), the EDG building may reach an internal temperature that, over time, could cause degradation of electrical and electronic components in the control panels. Thus high outdoor temperatures could potentially affect EDG operability.

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TEXT (If more space is required, use additional NRC Form 366A (1/71))

CORRECTIVE ACTION:

In the short term, a Temporary Procedure Change (TPC-88-177) has been issued against SOP 11.1, Revision 7 (Ventilation System Operation) and a Jumper Log Entry (Jumper-88-163) has been issued for the dampers. These Administrative Controls, which require manually blocking open the dampers and manually jumpering the fans, provide for a staged response (i.e., the number of dampers/fans manually opened/started) that is dependent on:

- a) Outside air temperature.
- b) Inside air temperature.
- c) EDG operation.
- d) Failure of pneumatic controls.

We are developing a proposed long term modification in which the following are being considered:

- 1) Installation of a back-up pneumatic supply. This would be considered an operational enhancement to the present pneumatic supply.
- 2) Replacement of the existing pneumatic controlled exhaust dampers with gravity or "fail open" exhaust dampers.
- 3) Controlling the five exhaust fans with individual electric thermostats (i.e., no pneumatic control of fans).
- 4) Installation of an alarm monitoring the pneumatic supply.
- 5) Changing the intake damper pneumatic actuators to a "fail-open" configuration or a combination "fail-open" and "fail-close" configuration, as determined by analysis.

The final modification is scheduled to be installed and operational prior to the summer of 1989.

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Vice President

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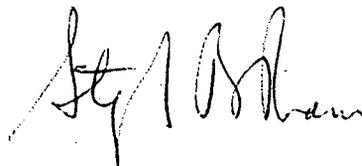
December 1, 1988

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 88-017-00

Document Control Desk
U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

The attached Licensee Event Report LER 88-017-00 is hereby submitted in accordance with the requirements of 10CFR50.73.

Very truly yours,



Attachment

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