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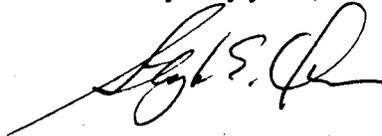
August 26, 1996

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 96-14-00

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

The attached Licensee Event Report LER 96-14-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,



Attachment

cc: Mr. Hubert J. Miller
Regional Administrator - Region I
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

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

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	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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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:

For assumed fires in certain locations, the potential exists for particular normal safe shutdown instrumentation and alternate safe shutdown instrumentation to be rendered inoperable.

EVENT DATE:

July 26, 1996

REPORT DUE DATE:

August 26, 1996

REFERENCES:

CITRS (Condition Identification and Tracking System) No. 96-E01785
LER 96-13

PAST SIMILAR OCCURRENCES:

None

DESCRIPTION OF OCCURRENCE:

On July 26, 1996, with the plant operating at 100% power, Con Edison notified the NRC pursuant to 10 CFR 50.72(b)(ii)(B) of a potential for a fire to disable both the normal instrument air supply and the backup nitrogen supply to several alternate safe shutdown instruments (pressurizer pressure and level and steam generator level). Discovery of this deficiency resulted from a detailed review of UFSAR Table 5.2-1, Technical Specification Table 3.6-1, and plant operating procedures for reasons unrelated to fire protection. The results of that review are reported in LER 96-13.

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ANALYSIS OF OCCURRENCE:

10 CFR 50, Appendix R, Paragraph III.L.2.d requires that the process monitoring function shall be capable of providing direct readings of the process variables necessary to perform and control the safe shutdown functions. At Indian Point Unit No. 2, these process variables include pressurizer pressure, pressurizer level, and steam generator level. The redundant channels for these three variables all transit through the same fire areas and do not meet the separation criteria of Appendix R. In order to meet the requirement above, it was necessary to install additional channels of indication for these three variables.

The normal instrumentation channels are electrical devices which rely on 120 VAC power to provide indication. The additional instrumentation, which is part of the plant Alternate Safe Shutdown System (ASSS), is pneumatic with air/nitrogen pressure providing the motive force for the indication. The indicators themselves, therefore, do not rely on electrical power. The ASSS instruments are routed separately from the normal instruments, except in one fire zone where they are protected with a fire wrap material.

Instrument air for the pneumatic instruments is provided to containment through a normally open air-operated containment isolation valve. In the event of the loss of the instrument air system, nitrogen backup from the nitrogen system is provided to the instruments through an air-operated containment isolation valve. The position of each containment isolation valve is controlled by its own solenoid valve which operates on DC power. Venting of the instrument air from each solenoid valve closes each containment isolation valve. A loss of DC power to each solenoid valve will cause it to vent the instrument air. The DC power cables for both solenoid valves are located within the same fire area as the cables for the normal instruments. A postulated fire in this fire area could potentially damage the cables for the normal instruments which disables the variable indication. Further, the same fire could potentially damage the DC power cables for the solenoid valves which control the instrument air containment isolation valve and the nitrogen backup containment isolation valve. Although the instruments are not directly affected, with no air or nitrogen as motive force, the ASSS instruments also would not provide variable indication. A calculation has demonstrated that there would be sufficient nitrogen in the piping after closure of the containment isolation valve to provide motive force for the instruments for approximately one hour. This is a conservative estimate as it assumes a constant leakage rate of nitrogen from the pressure regulator at the instrument rack, the nitrogen line pressure is initially assumed to be at the lower end of its range, and it does not account for the instrument air remaining in the piping to the instrument rack after the closure of the instrument air containment isolation valve.

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CAUSE OF OCCURRENCE:

The pneumatic instruments were installed inside the containment building in 1981 under a plant modification which was subject to a 10 CFR 50.59 review. The intent was to provide a backup to the electrical transmitters in the event of an electrical fire that disabled the electrical transmitters. The vulnerability of the motive force for the instruments to the same fire as the normal instruments was not a design requirement at that time. In 1982, a modification was developed to provide redundant indication from these pneumatic instruments outside the containment building in order to reduce the major contributors to core melt frequencies from fire related risks. Although a safety evaluation was performed, a review for the vulnerability of the motive force for the instruments to the same fire as the normal instruments was not performed at that time, most likely due to the perception that the instruments were a non-electrical backup which required no electrical power to provide indication. With the requirements of 10 CFR 50, Appendix R to ensure process variables for safe shutdown were available, these instruments were incorporated into the ASSS. An associated circuits analysis was not performed at that time, again most likely due to the perception that the instruments were a non-electrical backup which required no electrical power to provide indication. The pressurizer pressure pneumatic transmitter was replaced in 1986 using the same safety evaluation which installed the original pneumatic transmitter.

CORRECTIVE ACTIONS:

Upon discovery, a 72-hour allowed outage time was entered per the requirements of the Fire Protection Program Plan. Within that time period, a temporary procedure change to procedure AOI 27.1.9, "Control Room Inaccessibility, Safe Shutdown Control", was implemented to provide a backup source of nitrogen to be connected at the time of use to open the nitrogen containment isolation valve in order to provide backup nitrogen to the ASSS instruments. Assuming that the backup nitrogen supply is connected to the nitrogen containment isolation valve soon after the onset of the fire, the one hour supply of nitrogen in the piping determined in the calculation should provide adequate time to establish the connection. Further review of the event is ongoing and additional corrective actions will be implemented as required.