CENTERIOR ENERGY

PERRY NUCLEAR POWER PLANT
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Michael D. Lyster
VICE PRESIDENT - NUCLEAR

October 2, 1992
PY-CEI/NRR-1556 L

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

Perry Nuclear Power Plant
Docket No. 50-440
LERs 92-016

Dear Sir:

Enclosed is Licensee Event Report 92-016 for the Perry Nuclear Power Plant.

Sincerely,

Frank R Stead for
Michael D. Lyster

MDL:DWC:ss

Enclosure: LER 92-016

cc: NRC Project Manager
NRC Sr. Resident Inspector
NRC Region III

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Perry Nuclear Power Plant, Unit 1	05000440	1 OF 3

TITLE (4) Instrumentation Drift of a Differential Pressure Switch Results in an Unexpected Trip of the Fuel Handling HVAC Supply Fan "B"

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
09	06	92	92	-- 016 --	00				FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	80	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Henry L. Hegrat, Compliance Engineer, Extension 5185	(216) 259-3737

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
X	VG	PDX	S254	Y						

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 15 single-spaced typewritten lines) (16)

On September 6, 1992 at 0044, the Fuel Handling Building (FHB) HVAC Supply Fan "B" [FAN] unexpectedly tripped. Control room personnel immediately entered the appropriate operating instruction and verified that no high radiation condition existed in the FHB which could have contributed to the trip of this supply fan. An investigation was commenced to determine why the FHB HVAC Supply Fan "B" had tripped.

The cause of this event was equipment failure. The differential pressure switch [PDS] (Solon Manufacturing Company, Model Number 7PS2DW) drifted out-of-calibration such that on September 6, 1992, this switch initiated a trip of the FHB HVAC Supply Fan "B".

To prevent recurrence, the differential pressure switch was re-calibrated, and surveillance frequencies for both the "A" and "B" FHB exhaust differential pressure switches will be shortened from 24 to 3 months. Additionally, engineering personnel are evaluating recent design changes on other systems with similar differential pressure switch applications to determine if these changes would be suitable for replacement of the FHB exhaust differential pressure switch. As part of the established requalification training program, all plant licensed operators will be instructed on the lessons learned from this event.

I. Introduction

On September 6, 1992 at 0044, the Fuel Handling Building (FHB) HVAC Supply Fan "B" [FAN] unexpectedly tripped. At the time of the event, the plant was in Operational Condition 1 (Power Operation) at 30 percent of rated thermal power, with the Reactor Pressure Vessel [RPV] at saturated conditions. The NRC Operations Center was informed of the event via the Emergency Notification System at 0537 on September 6, 1992, pursuant to notification requirements identified in 10CFR50.72(b)(2)(ii). This event is being reported under the requirements of 10CFR50.73(a)(2)(iv).

II. Event Description

On September 6, 1992 at 0044, control room personnel received the "FHB HVAC Supply Fan B Flow Low" alarm. Control room personnel immediately identified that the Fuel Handling Building (FHB) HVAC Supply Fan "B" had tripped and entered the appropriate operating instruction. Control room personnel verified that no high radiation condition existed in the FHB which could have contributed to trip of this supply fan. In accordance with plant procedures, the FHB HVAC "A" Supply Fan was started and an investigation was commenced to determine why the FHB HVAC Supply Fan "B" had tripped.

Investigation determined that the FHB HVAC Supply Fan "B" had tripped on a low sensed differential pressure in the FHB HVAC Exhaust Ductwork. Control Room personnel verified that exhaust flow was within design parameters and that the FHB HVAC Supply Fan "B" had tripped due to instrument drift of a differential pressure switch.

This event was not initially identified as an Engineering Safety Feature (ESF) actuation. Upon further review of reporting guidance, control room operators identified this event to be an ESF actuation at approximately 0500 on September 6, 1992. The NRC was notified of this event at 0537. The switch was successfully re-calibrated on September 9, 1992.

III. Cause Analysis

The cause of this event was equipment failure. The differential pressure switch [PDS] (Solon Manufacturing Company, Model Number 7PS2DW) setpoint drifted out-of-calibration such that on September 6, 1992, this switch initiated a trip of the FHB HVAC Supply Fan "B".

A review of the calibration history of this particular switch identified that it had been calibrated on March 17, 1992. It was also determined that, in certain applications, this model of differential pressure switch had previous erratic setpoint drift and calibration difficulties. Although NPRDS data shows very few

industry failures for the differential pressure switch, Perry's experience with this switch indicates a poor calibration history. Previous problems with similar safety-related switches on the Annulus Exhaust Gas Treatment (AEGTS) system had resulted in a change to the calibration frequency from 18 to 2 months; however, the frequency of calibration for the non-safety switches in the FHB HVAC had not been changed. The switch was being calibrated on a 24 month frequency.

IV. Safety Analysis

The Fuel Handling Building Ventilation system continuously supplies clean, filtered and heated outside air to the various areas of the Fuel Handling Building. Additionally, the system removes and processes potentially contaminated air, thus providing adequate ventilation and limiting the release of radioactive isotopes to the outside air. During an accident in the Fuel Handling Building, high radiation will provide an alarm in the control room and shuts down the supply fan, while the exhaust units continue to run exhausting air through the charcoal filter units. This effectively maintains a negative pressure in the Fuel Handling Building. The supply fans also designed to trip on loss of FHB HVAC exhaust flow, to maintain negative pressure. During this event, the supply fan tripped, as designed to ensure adequate differential pressure was maintained; therefore, this event is not considered to be safety significant.

Previous failures of similar differential pressure switches in the AEGTS have been documented by LERs 87-043, 89-016, and 91-007. Corrective actions previously completed as a result of these events are described in their respective LERs.

V. Corrective Action

To prevent recurrence, the differential pressure switch was re-calibrated, and surveillance frequencies for both the "A" and "B" FHB exhaust differential pressure switches will be shortened from 24 to 3 months. Additionally, engineering personnel are evaluating recent design changes on other systems with similar differential pressure switch applications to determine if these changes would be suitable for replacement of the FHB exhaust differential pressure switch. As part of the established requalification training program, all plant licensed operators will be instructed on the lessons learned from this event.

Energy Industry Identification System Codes are identified in the text as [XX].