



**CENTERIOR
ENERGY**

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VICE PRESIDENT - NUCLEAR

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


Perry Nuclear Power Plant
Docket No. 50-440
LER 94-001

Gentlemen:

Enclosed is Licensee Event Report 94-001, "Reactor Water Cleanup Isolation Due To Loss Of Auxiliary Building Ventilation."

If you have questions or require additional information, please contact Henry Hegrat - Regulatory Affairs, at (216) 280-5606.

Very truly yours,

for 
Robert A. Stratman

RAS:DHL:sc

Enclosure: LER 94-001

cc: NRC Project Manager
NRC Resident Inspector
NRC Region III

220021

Operating Companies
Cleveland Electric Illuminating
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S PDR

JEH

LICENSEE EVENT REPORT (LER)

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

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.

FACILITY NAME (1) Perry Nuclear Power Plant, Unit 1	DOCKET NUMBER (2) 05000 440	PAGE (3) 1 OF 3
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TITLE (4)
Reactor Water Cleanup Isolation Due To Loss Of Auxiliary Building Ventilation

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
01	18	94	94	001	0					05000
										05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)										
POWER LEVEL (10) 100%	20.402(b)			20.405(c)			<input checked="" type="checkbox"/> 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 David H. Lockwood, Compliance Engineer Extension 7539	TELEPHONE NUMBER (include Area Code) (216) 259-3737
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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
YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO						

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On January 18, 1994 at 0737 and 0738 system containment isolations occurred due to Reactor water Cleanup (RWCU) system valve nest room high differential temperatures. The high differential temperature occurred as a result of tripping of the Auxiliary Building (AB) Ventilation system supply fans due to low inlet air temperature. The loss of cooling air to the valve nest room resulted in the high differential temperature. At the time of these events outside air temperature was approximately minus 20 degrees Fahrenheit. The RWCU system was isolated at 0736 by plant operators in anticipation of the isolation signal. Plant operators verified that no leakage existed and the RWCU system was returned to service on January 21, 1994.

Corrective actions were to replace the AB Ventilation system supply fans inlet temperature switches and relocate the associated capillary tubing.

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

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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
Perry Nuclear Power Plant, Unit 1		05000440		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	OF 2 3
				94	001	0	

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

I. Introduction

On January 18, 1994 at 0737 and 0738 Reactor Water Cleanup (RWCU) [CE] system containment isolations occurred due to valve nest room high differential temperature. At the time of these events the plant was in Operational Condition 1 (Power Operation) with reactor thermal power approximately 100 percent of rated and reactor vessel pressure approximately 1018 psig.

Notification was made in accordance with 10CFR50.72(b)(2)(ii). This event is being reported in accordance 10CFR50.73(a)(2)(iv).

II. Description of Event

On January 18, 1994 at 0736 the RWCU system was shutdown with all containment isolation valves closed in anticipation of an isolation signal due to valve nest room high differential temperature. The valve nest room high differential temperature alarm was received at 0735. Prior to receiving this alarm the Auxiliary Building (AB) [VF] Ventilation system supply fans [FAN] had tripped due to low inlet air temperature. Attempts to restart the supply fans were unsuccessful. At 0737 a Division 2 RWCU isolation signal was received due to RWCU valve nest room differential temperature. At 0738 a Division 1 RWCU containment isolation signal was also received. Plant operators verified that no leak existed and the RWCU system was returned to service on January 21, 1994.

Investigation of the supply fans tripping indicated that one of three inlet air temperature switches [TS] in the common supply plenum had failed and that the associated capillary tubing for the switches required relocation to provide a more representative sample of inlet air temperature at the heating coils. At the time of the event outside air temperature was approximately minus 20 degrees Fahrenheit.

III. Cause of Event

These events are attributed to the failure of one of three inlet air temperature switches in the common supply fan plenum and a non-representative temperature indication at the inlet air heating coils.

The purpose of the temperature switches and associated capillary tubing is to protect the inlet air heating coils from freezing. The associated tubing was located in areas which sensed unheated supply air bypassing the heating coils. The tubing was relocated to areas which ensured that air exiting the heating coils was properly mixed and heated prior to reaching the sensor.

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Investigation of the fan tripping determined that the failed switch could not be calibrated. A work order, W.O. 94-0345, was generated and the switch replaced and calibrated successfully.

IV. Safety Analysis

The RWCU system is used to control reactor chemistry, reduce reactor water inventory during startup and shutdown, minimize temperature gradients when recirculation pumps are not operating. A RWCU containment isolation at high reactor power may cause reactor coolant conductivity to slowly increase until the system is returned to service. In this event, RWCU was returned to service before Technical Specification action requirements were exceeded. The RWCU system valve nest room differential temperature detection is part of the Leak Detection system, designed to isolate the RWCU system containment penetrations should a RWCU system leak develop. Since no system leakage existed and the RWCU system was not challenged due to being manually isolated prior to the isolation signal, this event had no safety significant consequence.

V. Similar Events

Previous RWCU isolations as a result of AB Ventilation problems are documented on LER's 88-010, 88-016, and 89-004. However, none of these events involved problems with the inlet air temperature switches and associated capillary tubing. The RWCU system was not manually isolated prior to the isolation signal being generated for any of the previous events.

VI. Corrective Actions

At the time of the AB Ventilation fans tripping investigation was initiated to determine the cause. Replacement of the temperature switch and relocation of the associated capillary tubing was completed and the AB Ventilation system returned to service on January 19, 1994. Similar capillary tubing location problems were identified in the Intermediate Building Ventilation [VE] system and corrected.

Four other plant ventilation systems utilizing similar switches and tubing did not experience tripping due to low inlet air temperature and therefore relocation of the tubing for these systems was not performed.

Further corrective actions are addressed on Condition Report 94-032.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].