



**CENTERIOR
ENERGY**

PERRY NUCLEAR POWER PLANT

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VICE PRESIDENT - NUCLEAR

March 20, 1992
PY-CEI/NRR-1470 L

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

Perry Nuclear Power Plant
Docket No. 50-440
LER 91-024-01

Dear Sir:

Enclosed is Licensee Event Report 91-024-01 for the Perry Nuclear Power Plant.

This revision is submitted to address comments which originated from a post-submittal review of LER 91-024. Revised sections are indicated by a revision bar in the right hand margin of the text.

Sincerely,

Michael D. Lyster

MDL:RWG:sc

Enclosure: LER 91-024-01

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

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PDR ADDCK 05000440
S PDR

Operating Companies
Cleveland Electric Illuminating
Toledo Edison

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (7-530); 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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Loss of Emergency Service Water System Loop Due to Inadvertent Isolation of Keepfill System

OPERATING MODE (B)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (1)					
1		20.402(g)		20.405(e)		50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	1100	20.405(a)(1)(i)		50.38(e)(1)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(c)
		20.405(a)(1)(ii)		50.38(e)(2)		50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text) NRC Form 366A)
		20.405(a)(1)(iii)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	
		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)	

LISCENEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER	
	AREA CODE	
Henry L. Hegrat, Compliance Engineer, Extension 5185	2116	21591-13171317

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

MONTH	DAY	YEAR
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YES (If yes, complete EXPECTED SUBMISSION DATE)

Y NO

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single space typewritten lines) (16)

On December 4, 1991, a Perry Plant Operator (PPO) performing a weekly check of the Emergency Service Water (ESW) keepfill system discovered the keepfill system pressure reading approximately 3.5 psig. The keepfill system pressure is required to be > 13 psig when the ESW A loop is in standby. The PPO checked the position of keepfill isolation valve 1P45-F720A and found it closed. The ESW A loop and associated loads were declared inoperable in accordance with the applicable Technical Specification Action Statements.

The mispositioning of valve 1P45-F720A was attributed to personnel error. The last authorized repositioning of 1P45-F720A occurred on November 21, 1991. Interviews of personnel performing work in the vicinity of the keepfill isolation valve did not reveal the source of the error. It was therefore assumed that the valve mispositioning was an unintentional error by an unidentified person.

To prevent recurrence of a similar incident involving the keepfill isolation valve, the required valve position will be changed from normally open to locked open. Additionally, all licensed and non-licensed plant operators will receive training on this event as part of requalification training.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-30), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555. AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Perry Nuclear Power Plant, Unit 1	0500044091	—	024	—	01	02	OF 04

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

I. Introduction

On December 4, 1991, at 2115, the Emergency Service Water (ESW) [BI] A loop was declared inoperable due to a mispositioned valve. At the time of the event, the plant was in Operational Condition 1 (Power Operation) at 100 percent of rated thermal power with the Reactor Pressure Vessel [RPV] at approximately 1025 psig and saturated conditions.

II. Description of the Event

On December 4, 1991, at 2115, a Perry Plant Operator (PPO) performing a weekly check of the Emergency Service Water (ESW) keepfill system discovered the keepfill system pressure reading approximately 3.5 psig. At the time of the event the ESW A loop was thought to be in the standby mode. In this configuration, the required pressure for the keepfill system is greater than or equal to 13 psig. Upon discovery of the abnormal reading the PPO immediately notified the Control Room. The PPO subsequently checked the position of ESW keepfill isolation valve 1P45-F720A and found it closed. At the direction of the Control Room 1P45-F720A was opened and flow was heard through the valve. The PPO opened downstream sample collection isolation valve 1P45-F723A and vented a steady flow of air for approximately five minutes. The ESW A loop was then filled and vented in accordance with System Operating Instruction (SOI) P45/P49, Emergency Service Water and Screen Wash Systems (Unit 1).

Concurrent with these activities, the Control Room declared ESW A loop inoperable and took the appropriate actions required by applicable Technical Specifications sections. The Control Complex Chilled Water System (P47) loop A and Control Room HVAC/Emergency Recirculation System (M25/M26) train A were made inoperable as a result of the ESW A loop inoperability. Train B of M25/M26 was out of service due to a scheduled outage. The inoperability of both trains of M25/M26 required entry into the Technical Specification 3.0.3 action statement.

At 2330 hours on December 4, 1991, a four-hour notification was made to the NRC pursuant to the requirements of 10CFR50.72(b)(2)(iii)(D). This event is additionally being reported under the corollary reporting requirements of 10CFR50.73(a)(2)(v)(D) and 10CFR50.73(a)(2)(i)(B). The ESW A loop operability was restored when the fill and vent operation was completed.

III. Cause Analysis

The mispositioning of valve 1P45-F720A, which resulted in the ESW A loop inoperability was attributed to personnel error. The last authorized repositioning of the ESW keepfill isolation valve was performed on November 21, 1991, during a quarterly surveillance test. Interviews with personnel who performed work in or near the area of the valve did not reveal the source of the apparent error. It was therefore assumed that the valve mispositioning was an unintentional error by an unidentified person. The last weekly check of the ESW

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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91	024	01

Perry Nuclear Power Plant, Unit 1

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TEXT IF THIS LER IS REQUIRED, USE ADDITIONAL NRC Form 366A (11/77)

keepfill system pressure was performed on November 27, 1991, with satisfactory results.

All manipulations of valve 1P45-F720A required completion of a Verification Form, except with the exception of repositionings covered by test procedures. Valve repositioning for 1P45-F720A for the above referenced testing required independent verification of the valve's position for restoration. No other documentary evidence could be found to justify repositioning the subject valve after the testing completed on November 21, 1991.

After that date, the ESW A loop was operated on the following dates:

- 11/28/91 - to support a storage tank discharge
- 11/29/91 - to support a Division 1 Diesel run
- 12/01/91 - to support a storage tank discharge
- 12/03/91 - to support a storage tank discharge

Valve 1P45-F720A was not required to be operated for any of the above activities.

IV. Safety Analysis

The primary function of the ESW keepfill system is to prevent water hammer during ESW system startup from a standby or secured status. The ESW system is comprised of three independent loops. The system is designed such that the occurrence of any single active or passive failure will not reduce the safety-related functional performance of the Emergency Core Cooling System (ECCS). The ESW system is capable of supplying cooling water to the equipment on two of the three ESW loops following a single failure. The ESW A loop supplies the following loads:

- RHR Heat Exchanger A
- Division 1 Diesel Generator Heat Exchanger
- Emergency Closed Cooling Heat Exchanger A
- Unit 2 Fuel Pool Cooling and Cleanup Heat Exchanger A (normally isolated)

An automatic start signal for the ESW A loop in the configuration which existed at the time of discovery on December 4, 1991, could have resulted in damage to the A loop due to water hammer. The ESW system safety function would not have been compromised in the event that the ESW A loop was lost if damage had occurred. However, this event is considered safety significant due to the effect on the Control Room Heating, Ventilation, and Cooling (CRHVAC) system.

The CRHVAC/Emergency Recirculation System (M25/M26) system provides two independent trains of cooling, heating, and ventilation for the Control Room and equipment areas during normal plant operation and emergency conditions. The loss of the ESW A loop and resulting loss of the P47 (Control Complex Chilled Water) system affected the design function of the CRHVAC system to maintain the Control Room temperature below 90 degrees Fahrenheit during all modes of operation.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN FOR RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-520), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, 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 388A's (17))

Availability of the P47 System is required for M25/M26 system operability. Since the B train of M25/M26 was out of service for maintenance, the inadvertent loss of the A train resulted in the functional loss of both trains of the CRHVAC/Emergency Recirculation System, thereby making this a safety significant event. The ESW A loop is conservatively considered to have been inoperable during the period between 2045 hours on December 3, 1991, when the loop was last secured from operation until 0203 hours on December 5, 1991, when the ESW A loop operability was restored. The maximum design Control Room temperature was not exceeded during that period. Additional design features for the CRHVAC A train were functional during the event.

V. Similar Events

Several occurrences of mispositioned valves have been documented over the last two years in LERs 89-24, 90-34, 90-38, and 90-41. The latter three LERs involved mispositionings attributed to unintentional personnel errors. None of these events resulted in the inoperability of the ESW system.

VI. Corrective Actions

The required position for the ESW keepfill isolation valves 1P45-F720A(B) have been changed from normally open to locked open to prevent future occurrences of this event. Additionally, all license and non-licensed plant operators will receive training on this event as part of requalification training.

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