



**CENTERIOR
ENERGY**

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VICE PRESIDENT - NUCLEAR

June 12, 1992
PY-CEI/NRR-1513 L

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

Perry Nuclear Power Plant
Docket No. 50-440
LER 92-013

Dear Sir:

Enclosed is Licensee Event Report 92-013 for the Perry Nuclear Power Plant.

Sincerely,

Michael D. Lyster

MDL:CRE:ss

Enclosure: LER 92-013

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

9206150369 920612
PDR ADOCK 05000340
S PDR

Operating Companies
Cleveland Electric Illuminating
Toledo Edison

150034

LICENSEE EVENT REPORT (LER)

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-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): **Perry Nuclear Power Plant, Unit 1** DOCKET NUMBER (2): **0 5 0 0 0 4 4 0 1** PAGE (3): **1 OF 0 3**

TITLE (4): **Main Steam Line Isolation on Low Condenser Vacuum While Troubleshooting Turbine Stop Valves**

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)
05	14	92	92	013	00	06	12	92			05000
											05000

OPERATING MODE (9): **4** THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)

20.402(e)	<input type="checkbox"/>	20.405(e)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	<input type="checkbox"/>	73.71(b)	<input type="checkbox"/>
20.406(a)(1)(i)(v)	<input type="checkbox"/>	50.73(a)(1)	<input type="checkbox"/>	50.73(a)(2)(iv)	<input type="checkbox"/>	73.71(c)	<input type="checkbox"/>
20.406(a)(1)(ii)	<input type="checkbox"/>	50.73(a)(2)	<input type="checkbox"/>	50.73(a)(2)(v)	<input type="checkbox"/>	OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
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)(vii)(B)	<input type="checkbox"/>		
20.406(a)(1)(v)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(vi)	<input type="checkbox"/>		

LICENSEE CONTACT FOR THIS LER (12):

NAME: **Henry L. Hegrat, Compliance Engineer, Extension 5185** TELEPHONE NUMBER: **216 259-3737**

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 (15): MONTH: DAY: YEAR:

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

On May 14, 1992 at 1120, while troubleshooting a slow opening condition on #2 Turbine Stop Valve (TSV), the TSVs were opened greater than 90% with the Main Steam Line (MSL) drain valves open, resulting in an MSL drain isolation on low condenser vacuum. Immediate corrective action was taken to stop TSV troubleshooting until the problem could be identified and corrected.

The root cause of this event is an inadequate procedure (Work Order). The low main condenser vacuum trip is bypassed when the key locked Condenser Low Vacuum Bypass Switches are placed in the bypass position and the TSVs are less than 90% open. The work order controlling the troubleshooting of the #2 TSV did not include any precautions regarding the opening of the TSVs to greater than 90%, nor did it include any steps to prevent the actuation of the low condenser vacuum trip logic. Corrective actions taken for this event included revision of the work order to prevent further trip logic actuations. A note will be added to the generic work order associated with the TSVs to remind planning personnel of the loss of the trip bypass function when the TSVs are greater than 90% open. All licensed operators, Instrument and Control (I&C) technicians and I&C work planners will be trained on the lessons learned from this event.

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-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) Perry Nuclear Power Plant, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 4 J	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (if more space is required, use additional NRC Form 366A's) (17)

I. Introduction

On May 14, 1992 at 1120, the Turbine Stop Valves (TSVs) were opened greater than 90% with the Main Steam Line (MSL) drain valves (ISV) open, resulting in an MSL drain isolation on low condenser vacuum. At the time of this event, the plant was in Operational Condition 4 (Cold Shutdown) with reactor water temperature at 108°F. The NRC Operations Center was informed of this event via the Emergency Notification System at 1336 in accordance with 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

At 1410 on May 13, 1992 troubleshooting was initiated to determine the cause for the low opening of the #2 Turbine Stop Valve observed during the performance of a surveillance instruction. Troubleshooting, which required the opening and closing of the TSVs, was being performed from the Control Room in accordance with an approved work order. With the plant in Cold Shutdown, a low condenser vacuum condition existed during the performance of this work order.

On May 14, 1992, at 1000, the Main Steam Lines (MSLs) were drained in preparation for re-establishing the MSL Local Leak Rate Testing (LLRT) lineup by opening MSL drain valves B21F016, F019, F067B and F067D. Troubleshooting continued concurrently on the TSVs. At 1120, on the next open stroke of the TSVs, the Nuclear Steam Supply Shutoff System logic for the low condenser vacuum trip was satisfied and a MSL drain isolation occurred as designed resulting in the automatic closure of the four open MSL drain valves.

TSV troubleshooting was immediately halted. The Unit Supervisor discussed the situation with Instrument and Control (I&C) personnel and it was determined that the TSV troubleshooting work order should be revised to prevent further low condenser vacuum isolations through the use of lifted leads and jumpers. The low condenser vacuum trip logic is not required by Technical Specifications in OPERATIONAL CONDITION 4. Troubleshooting and repair efforts were completed satisfactorily on May 25, 1992.

III. Cause Analysis

The root cause of this event is an inadequate procedure (work order). The low main condenser vacuum trip is bypassed when the key locked Condenser Low Vacuum Bypass Switches are placed in bypass and the TSVs are less than 90% open. The bypass switches are controlled by an integrated operating instruction, and were in the "Bypass" position during this event. When the TSVs are opened to greater than 90%, a relay in the condenser low vacuum bypass logic is deenergized, allowing a condenser low vacuum trip to occur, regardless of the position of the bypass switches. In this instance, four MSL drain valves were already open when the TSVs were opened to greater than 90%.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 KRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), 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 366A's) (17)

The work order used to troubleshoot the #2 TSV did not include any precautions regarding the opening of the TSVs to greater than 90%, nor did it include any steps to prevent actuation of the low condenser vacuum trip logic. During work order development, planners failed to identify the disabling of the bypass logic when the TSVs are greater than 90% open. If it had been identified, steps could have been included to either disable the isolation, or to close valves as necessary to accommodate the expected trip signal.

IV. Safety Analysis

The purpose of the Nuclear Steam Supply Shutoff System (NSSSS) is to provide protection against the release of radioactive materials from the containment to the environment as a result of accidents occurring to the Nuclear Steam Supply System, auxiliary systems and support systems. The Main Steam Line Isolation logic monitors several plant parameters (including low condenser vacuum) which could indicate a loss of system integrity, and provides for system isolation when any of these parameters are exceeded. These trips are required to be operable by Technical Specification 3.3.2 only in MODES 1, 2 and 3. At the time of this event, reactor coolant temperature was 108°F, reactor coolant chemistry was in the normal range for MODE 4 and the isolation valves functioned as designed. Therefore, this event is not safety significant.

Previous LERs written to document unexpected ESF actuations resulting from inadequate work orders include LER 90-032, in which improper sequencing of steps in a work order resulted in a Residual Heat Removal Shutdown Cooling System isolation, and LER 92-010, where an unexpected outboard Balance of Plant Containment Isolation occurred while following a work order in which proper precautions had not been provided. The administrative procedure controlling the planning of work orders clearly requires that precautions be included to prevent system isolations. The corrective action taken for these previous events was to retrain the appropriate personnel to these procedural requirements. The latest event resulted from a failure by the work planner and the work order reviewers to recognize the bypass switch limitations when the TSVs are greater than 90% open. The corrective actions taken for the previous two events reminded personnel of the requirements in the work planning procedure, but could not be reasonably expected to completely eliminate the possibility of human error in work order preparation.

V. Corrective Actions

The TSV troubleshooting work order was revised on May 15, 1992 to include steps to prevent MSL isolations through lifted leads and jumpers. A note will be added to the generic work order associated with the TSVs to remind planning personnel of the loss of the trip bypass function when the TSVs are greater than 90% open. Additionally, all licensed operators, I&C technicians and I&C work planners will be trained on the lessons learned from this event.

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