



THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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Al Kaplan

VICE PRESIDENT
NUCLEAR GROUP

Serving The Best Location in the Nation
PERRY NUCLEAR POWER PLANT

October 27, 1989
PY-CEI/NRR-1084 L

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

Perry Nuclear Power Plant
Docket No. 50-440
LER 89-024-01

Dear Sir:

Enclosed is Licensee Event Report 89-024-01 for the Perry Nuclear Power Plant.

Very truly yours,

Al Kaplan
Vice President
Nuclear Group

AK/njc

Enclosure: LER 89-024-01

cc: T. Colburn
NRC Resident Inspector

U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

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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	PAGE (3) 1 OF 0 3
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TITLE (4) **Personnel Error During Valve Line-Up and Instrumentation Deficiencies Cause Technical Specification Violation of Suppression Pool Make-Up System**

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)
0 7	2 5	8 9	8 9	0 2	4 0 1	1 0	2 7	8 9			0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9) 2	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)										
POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.408(a)	<input type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)							
	<input type="checkbox"/> 20.408(a)(1)(i)	<input type="checkbox"/> 80.38(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)							
	<input type="checkbox"/> 20.408(a)(1)(ii)	<input type="checkbox"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
	<input type="checkbox"/> 20.408(a)(1)(iii)	<input checked="" type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(viii)(A)								
	<input type="checkbox"/> 20.408(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(viii)(B)								
<input type="checkbox"/> 20.408(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(a)									

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Gregory A. Dunn, Compliance Engineer, Extension 6464	AREA CODE 2 1 6	NUMBER 2 5 9	EXTENSION - 3 7 3 7

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)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO			

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

On July 23, 1989 at 0413, entry into Operational Condition 2 was completed with the Suppression Pool Makeup (SPMU) System inoperable, in violation of Technical Specification (TS) 3.0.4. On July 25, 1989 a vent valve on the reference leg of a SP level instrument was found open and uncapped. On August 2, 1989 the upper containment pool (UCP) was found to be below the water level allowable limit. The instruments and UCP level were restored to an operable condition.

The causes of these events are personnel error and inadequate instrument calibration instructions. During SPMU system instrument fill and vent on July 18, 1989 technicians apparently failed to properly restore the system. Additionally, following completion of outage activities, the UCP skimmer plates were not returned to their correct position. The UCP level instruments had been replaced during the refuel outage with a more reliable design however, vendor manual calibration procedures did not provide adequate instructions for the performance of the instrument calibration.

To prevent recurrence, the technicians involved with the fill and vent activity have been counseled, while all other Instrument and Control field personnel have been instructed on the lessons learned from this event. Also, the associated Instrument Maintenance Instruction will be revised to include step-by-step signoffs for system verification. The UCP instrument supplier provided calibration information. The setpoint for these alarms will be changed to increase the margin between the setpoint and TS limits. Until this change is implemented operations personnel will perform visual verification of the UCP level utilizing operator plant equipment rounds.

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) Perry Nuclear Power Plant, Unit 1	DOCKET NUMBER (2) 0500044089	LER NUMBER (6)			PAGE (7)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		89	024	011	2	OF 03

TEXT (If more space is required, use additional NRC Form 388A's) (17)

On July 23, 1989, at 0413, an Operational Condition change was completed without meeting all applicable Technical Specification Limiting Conditions for Operation, in violation of Technical Specification (TS) 3.0.4. At the time of the event, the plant was entering Operational Condition 2, Startup, following the first refueling outage. The reactor pressure vessel [RPV] was depressurized, and reactor coolant temperature was approximately 125 degrees Fahrenheit.

On July 25, 1989 during an operations channel check of Suppression Pool (SP) [TK] level instrumentation, a discrepancy between redundant channels of water level indication was observed. Technicians were sent into the plant to fill and vent the SP level instrumentation. Upon starting the fill and vent lineups, it was observed that the reference leg vent valve for SP level transmitters [LT] 1G43-N060 and N070 was open and uncapped. This condition caused the instrument reference leg to sense pressure of the Auxiliary Building [NF] versus the pressure in the Containment Building [NH] where the SP is located, thereby rendering the instrument inoperable. Technicians closed and capped the reference leg vent valve, returning the level instrument to operability and eliminating instrumentation discrepancies.

On August 2, 1989 during an operations plant walkdown, Upper Containment Pool (UCP) [DA] water level was visually observed to be below the top of the weir structure separating the reactor cavity and the dryer/separator pool. This level is known to be equal to the TS limit of 22 feet 10 inches above the RPV head flange. A work order was completed to raise the skimmer [SKR] plates and pool level was increased.

Both of these conditions resulted in the Suppression Pool Makeup (SPMU) [BT] system being inoperable. Because Technical Specification 3.6.3.4 requires the SPMU system to be operable in Operational Conditions 1, 2 and 3, the entry into Operational Condition 2 on July 23 was made in violation of TS 3.0.4

The cause of these events are personnel error and inadequate instrument calibration instructions. During a SP instrument fill and vent on July 18, 1989, technicians apparently failed to return the components to the proper operating condition as required by Instrument Maintenance Instruction (IMI-E2-42), Filling and Venting Suppression Pool Level Instrument Lines, thereby rendering the system inoperable. The cause of the low UCP level is an instrument calibration deficiency. During the first refueling outage, a plant modification was implemented to replace level switches [LS] with a more reliable level detector. These instruments (Drexel-Brook Series 506 capacitance probe) failed to initiate an alarm on low level. Upon troubleshooting these instruments, the equipment supplier was contacted and he provided additional calibration instructions for these instruments. This calibration instruction was not described in the vendor manual. The lack of a dependable alarm function, along with inaccuracies in the level indication, contributed to the improper placement of upper pool skimmer plates, which had been lowered during the refueling outage to support draining of the reactor cavity.

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-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.

FACILITY NAME (1) Perry Nuclear Power Plant, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 4 0	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 9	0 2 4	0 1	0 3	OF 0 3

TEXT IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC FORM 306A (17)

The SP is an open top body of water located at the bottom of the containment vessel. The design of the Reactor building structure is such that a water seal is formed between the containment and drywell portions when the SP level is maintained. The water provides a heat sink for safety relief valve operation while acting as a pressure suppressent during a Loss of Coolant Accident (LOCA). This source of water is also a supply for the emergency core cooling systems. During post-LOCA conditions suppression pool water inventory may be decreased due to distribution of SP water for these functions. A supplemental source of water for the SP is supplied from the upper containment pool, through two functionally independent trains of the SPMU system. As designed, the upper pool water is gravity drained to the SP either automatically or manually in post-LOCA situations. The improper valve lineup on the SPMU instruments resulted in the inoperability of only the automatic initiation of one of the two redundant SPMU trains. The manual initiation of the affected train was not prohibited, and the manual and automatic operation of the unaffected train was fully capable of performing the intended safety function.

The UCP level was being maintained at a constant level approximately 1/2 to 2 inches below TS limit by the pool skimmer. This decrease in water level amounts to less than 2% of the total available water in the UCP. Therefore, these events are considered to be of no potential safety significance. No previous similar events have been identified.

To prevent recurrence the technicians responsible for leaving the system in the nonoperational condition have been counseled, also all other Instrument and Control Section field personnel have been instructed on the lessons learned from this event. IMI-E2-42 will be revised to include step-by-step signoffs for system verification. Additionally, as a corrective action for LER 89-023, Plant Administrative Procedure (PAP-0205), Operability of Plant Systems, will be modified to specifically require documentation of independent verifications to be completed at the site of performance.

To resolve the problem with the UCP level instrument performance, the instrument supplier provided specific calibration information. The setpoint for these alarms will be changed to increase the margin between the setpoint and TS limits. Until this change is implemented operations personnel will perform visual verification of the UCP level utilizing operator plant equipment rounds.

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