NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Perry Nuclear Power Plant, Unit 1	0 5 0 0 0 4 4 0	1 OF 0 3

TITLE (4) Bad Connection in Isolation Logic Results in Unexpected Isolation Of A Main Steam Drain Line Inboard Isolation Valve During Surveillance Testing

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 5 0 0 0
0 9	1 4	8 7	8 7	—	0 0 6	— 0 0	1 0	1 3	8 7		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 8 5	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 (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	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)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Gregory A. Dunn, Compliance Engineer, Extension 6484	2 1 6 2 5 9 - 3 7 3 7

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	J M	R L Y	A 3 4 8	N							

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 fifteen single-space typewritten lines) (16)

On September 14, 1987 at approximately 1355, a main steam drain line inboard isolation valve closed unexpectedly due to a Nuclear Steam Supply Shutoff System (NSSSS) isolation signal during the performance of a Leak Detection (LD) system Surveillance Instruction (SVI). Plant operators verified that no valid NSSSS isolation signal existed and opened the isolation valve at 1510.

The cause for the closure of the main steam drain line inboard isolation valve is suspected to be due to a bad connection in the channel C NSSSS isolation logic. Therefore, when the B NSSSS isolation logic was tested as required by the SVI, the isolation relay was de-energized causing closure of the valve. Subsequent troubleshooting identified a faulty contact in a relay in the C NSSSS logic, however failure of this contact would not have resulted in the isolation. The affected relay has been replaced and tested satisfactorily. In addition, a physical verification of the wiring in the affected portion of the NSSSS C logic was performed to ensure no loose or damaged connections exist.

No additional isolations in the NSSSS system have been observed since this event. However, the routine system performance monitoring will continue as required.

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

On September 14, 1987 at approximately 1355, a main steam [SB] drain line inboard isolation valve closed unexpectedly due to a Nuclear Steam Supply Shutoff System (NSSSS) [JM] isolation signal during the performance of a Leak Detection (LD) [IJ] system Surveillance Instruction (SVI). At the time of the event, the plant was in Operational Condition 1 (Power Operation) with reactor power approximately 85 percent of rated. Reactor vessel [RPV] pressure was approximately 990 psig.

On September 14 at 1318, plant Instrument & Controls technicians started the performance of SVI-E31-T5311B, "Turbine Building Main Steam Line Temperature High Channel Functional for 1E31-N351B & 1E31-N351C." At 1450 during a walkdown of Control Room panels, a control room operator discovered that 1B21-F0016, the inboard main steam drain line isolation valve had gone closed. A review of available data revealed that the valve had closed at approximately 1355. Plant operators verified that no valid NSSSS isolation signal existed and opened the isolation valve at 1510.

The cause of the closure of the main steam drain line inboard isolation valve is suspected to be due to a bad connection in the channel C NSSSS isolation logic. The channel C NSSSS isolation logic is in parallel with the B NSSSS isolation logic (tested during SVI-E31-T5311B), providing power to the isolation relay for the valve. It is believed that the C NSSSS isolation logic was open due to the bad connection. Therefore, when the B NSSSS isolation logic was tested as required by the SVI, the isolation relay was de-energized causing closure of the valve. Subsequent troubleshooting identified a faulty contact in a relay [RLY] (Manufacturer: Amerace Corporation, Model: EGPI) in the C NSSSS logic, however failure of this contact would not have resulted in the isolation. Re-performance of the SVI after the relay replacement was conducted satisfactorily. In addition, a physical verification of the wiring in the affected portion of the NSSSS C logic was performed to ensure no loose or damaged connections exist.

A previous similar event occurred on May 30, 1987 during the performance of SVI-E31-T0079B, "Main Steam Line Tunnel Temperature High Channel Calibration" (See LER 87-039). The cause for that event was also suspected to be a bad connection in the channel C NSSSS isolation logic. Troubleshooting of that event could not duplicate the valve isolation nor confirm existence of the bad connection. The logic circuitry has been tested satisfactorily several times since the May 30 event during the performance of surveillance instructions.

The drain line isolation valve provides a containment isolation mechanism to the flow path for condensation from areas upstream of the inboard Main Steam Line Isolation Valves (MSIV) to the main condenser. The safety related function of this valve is to close in the event of an NSSSS isolation signal. The 1B21-F0016 valve operated as designed during this event. Additionally, an outboard isolation valve is installed and was unaffected by this event. Therefore, this event is not considered to be safety significant.

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

No additional isolations in the NSSSS system have been observed since this event. However, the routine system performance monitoring will continue as required.

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

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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PERRY NUCLEAR POWER PLANT

Murray R. Edelman
SR. VICE PRESIDENT
NUCLEAR

October 13, 1987
PY-CEI/NRR-0735 L

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

Perry Nuclear Power Plant
Docket No. 50-440
LER 87-065-00

Dear Sir:

Enclosed is Licensee Event Report 87-065-00 for the Perry Nuclear Power Plant.

Very truly yours,

Murray R. Edelman
Senior Vice President
Nuclear Group

MRE:njc

Enclosure: LER 87-065-00

cc: T. Colburn
K. Connaughton

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