

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): LaSalle County Station Unit 2										DOCKET NUMBER (2): 0 5 0 0 0 3 1 7 4										PAGE (3) 1 OF 4	
TITLE (4): Reactor Vessel Level Switch Piped Backwards																					
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 NUMBERS									
06	10	85	85	029	00	07	08	85				0 5 0 0 0									
OPERATING MODE (9): 4		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11):																			
POWER LEVEL (10): 01010		20.402(b)				20.408(c)				80.73(a)(2)(iv)			73.71(b)								
		20.408(a)(1)(i)				80.38(c)(1)				X 80.73(a)(2)(v)			73.71(c)								
		20.408(a)(1)(ii)				X 80.38(c)(2)				80.73(a)(2)(vi)			OTHER (Specify in Abstract Below and in Text, NRC Form 366A)								
		20.408(a)(1)(iii)				X 80.73(a)(2)(i)				80.73(a)(2)(viii)(A)											
		20.408(a)(1)(iv)				80.73(a)(2)(ii)				80.73(a)(2)(vii)(B)											
		20.408(a)(1)(v)				80.73(a)(2)(iii)				80.73(a)(2)(ix)											
LICENSEE CONTACT FOR THIS LER (12)																					
NAME D. Spencer, extension 649								TELEPHONE NUMBER AREA CODE 815 357-6761													
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											
E	JIB	Z9999	Z9999	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 6/10/85 while Unit 2 was in Cold Shutdown, reactor level switches 2B21-N037AA and AB were found to be piped in reverse of system design. The inop switches resulted in the Unit 2 Division 1 ECCS being inop from the time that the switches had been replaced by Modification work for Environmental Qualification during the outage, until corrective action was taken. During this time period the LCO for required ECCS systems operable during Cold Shutdown was not met, although the Division 1 ECCS systems were available by Operator action.

The cause of the incorrect piping was due to a field change which was initiated on the design drawings and did not get transferred to the contractor installation drawings. In addition the "Static-O-Ring" type dP switches required physical reversal of the process piping due to design differences with the "Barton" type dP switches which were replaced.

Corrective action was taken to ensure adequate design review of modifications was made. Additional inspections of plant installation and a review of the adequacy of post testing of Modifications were also performed.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
LaSalle County Station Unit 2	0 5 0 0 0 3 7 4	8 5	— 0 2 9	— 0 0	0 2	OF	0 4

TEXT (If more space is required, use additional NRC Form 308A's) (17)

I. DESCRIPTION OF EVENT

On June 10, 1985, at 1035 hours, with Unit 2 in Condition 4, Cold Shutdown, differential pressure switches 2B21-N037AA and AB were found to be piped in reverse of system design. The switches provide a Reactor Vessel Low, Low, Low Level (Level 1) initiation signal to Division 1 ECCS logic (i.e., Automatic Depressurization System (SB), Low Pressure Core Spray (BM) and LPCI A (B0)) and Reactor Core Isolation Cooling (RCIC, BN).

At the time of discovery, ECCS Division 2 and 3 were out of service for installation of Environmental Qualification modifications. Subsequent investigation revealed that there was a time period in the week prior to discovery when Secondary Containment (NG) was not in effect. Therefore, the provisions of Technical Specification 3.5.2 Action (a), which requires at least one ECCS system when Secondary Containment is not available, were not met.

The problem was discovered during a field walkdown associated with a revision to surveillance procedure LIS-NB-215, "Unit 2 Excess Flow Check Valve Operability Test". The incorrect piping rendered the level switches inoperable and resulted in Division 1 ECCS and RCIC systems being unavailable for initiation on low water level.

II. CAUSE

Investigation revealed that the piping to the affected instruments was installed backwards during performance of modification M-1-2-84-136 which changed the originally installed Barton differential pressure (dP) level switches to an environmentally qualified model manufactured by Static-O-Ring (SOR). Inherent design differences between the two switches required a physical reversal of process piping to allow for proper operation of the SOR level switches. This change was not reflected in the design drawings provided by the Architect Engineer as part of the modification package. Field personnel noted the discrepancy and initiated a Field Change Request to provide correct installation details to the installation contractor. This change was not, in turn, incorporated into contractor production drawings utilized to install the two switches in question.

Post modification testing designated by the modification package included only a calibration of the newly installed instrumentation. This testing was not adequate to detect the reversed instrument connections. No documented physical walkdown of the newly installed piping was performed.

III. PROBABLE CONSEQUENCES OF THE OCCURRENCE

At the time of the occurrence, Unit 2 was in Cold Shutdown. From 0330 hours on June 5, 1985, until 1210 hours on June 10, 1985, none of the ECCS systems (two ECCS systems) were operable as required by Technical Specification 3.5.2, although Division 1 ECCS systems were available for manual operation. Secondary Containment was out of service for modification work from 1130 hours on June

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
LaSalle County Station Unit 2	05000374	85	029	00	03	OF	04

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

III. PROBABLE CONSEQUENCES OF THE OCCURRENCE (Continued)

3, 1985, until 1730 hours on June 8, 1985, during which time both Unit 1 and Unit 2 were in Cold Shutdown. During the time period in which Secondary Containment was unavailable concurrent with the inoperability of the ECCS systems, no core alterations or work that could potentially drain the reactor vessel was performed. Alarms for Reactor Low Level were available at Level 4 (31.5 in.), Level 3 (12.5 in.) and Level 2 (-50 in.) prior to the Level 1 (-129 in.) Reactor Level when an ECCS initiation is required. During this time period, reactor Level was generally maintained above +60 in. to ensure adequate core flow during Shutdown Cooling operation. Since the unit was in Cold Shutdown, operating conditions permitted ample time for Operator action to initiate the ECCS systems had they been required.

IV. CORRECTIVE ACTION

ECCS Division 1 was restored to operable status within 45 minutes of the discovery of the installation error by jumpering the level switch contact on 2B21-N037AA. No immediate action was taken on 2B21-N037AB since this switch provides an initiation signal to RCIC which is not required in Cold Shutdown. Work Request L49443 was written which corrected the piping on both level switches.

Confirmatory Action Letter (CAL) 85-07 was issued by the Nuclear Regulatory Commission (Region III) on June 17, 1985. This CAL specified certain corrective actions to be completed prior to Unit 2 restart. It also specified corrective actions to be completed subsequent to Unit 2 restart.

Additionally, the following long-term corrective actions are being implemented:

Instrument lines at racks containing safety related differential pressure switches used to measure reactor vessel level will be labeled to aid in proper identification of variable and reference process legs (AIR 374-200-85-0094).

Station Procedure LAP-1300-2, "Plant Modifications", is being revised to clarify when walkdowns of modifications should be performed prior to declaring the modification operable (AIR 374-200-85-0091).

Methods of assigning post maintenance/modification test requirements are being reviewed and revised as necessary (AIR 373-123-85-0002, 3).

Tailgates of this event are being conducted with the Operating, Quality Control, Technical Staff and Maintenance Departments as well as Station Construction. These tailgates will emphasize the significance of the event, sequence of events, and the unacceptability of this type of event (AIR's 374-200-85-00099 to 105).

An evaluation is being conducted to determine whether the cognizant Modification Engineer should be more closely involved in the actual installation of the modification (AIR 374-200-85-00092).

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FACILITY NAME (1) LaSalle County Station Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 7 4	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 5	— 0 2 9	— 0 0	0 4	OF	0 4

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

IV. CORRECTIVE ACTION (Continued)

A review of the Commonwealth Edison Modification Program is being conducted by the Corporate Office utilizing the guidance provided by the INPO Good Practice (AIR 373-123-85-00009).

Station Nuclear Engineering Department specification of post modification testing requirements is being upgraded for safety related modifications (AIR 373-123-85-00003).

Checklists are being developed by the Operating and Maintenance Departments for use in ensuring adequate post maintenance testing prior to return to service (AIR 373-123-85-00004).

A committee review of safety related modifications prior to declaration of operability has been implemented. This committee consists of at least the Technical Staff Supervisor, an Operating Engineer or Assistant Superintendent, and the cognizant Modification Engineer. This is an interim measure that has been established until our evaluation and corrective actions in the areas of post modification testing have been completed.

V. PREVIOUS OCCURRENCES

(LER 373/82-12) Reversed piping of differential pressure switches on RHR shutdown cooling high flow instrumentation and LPCS (BM) (SFA) injection valve permissive.

VI. NAME AND TELEPHONE NUMBER OF PREPARER

Dale Spencer, 815/357-6761, extension 649.



Commonwealth Edison
LaSalle County Nuclear Station
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July 8, 1985

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

Dear Sir:

Reportable Occurrence Report #85-029-00, Docket #050-374 is being submitted to your office in accordance with 10CFR 50.73.

for R.D. Bishop
G. J. Diederich
Station Manager
LaSalle County Station

GJD/DRR/kg

Enclosure

xc: NRC, Regional Director
INPO-Records Center
File/NRC

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