

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)
LaSalle County Station Unit 1DOCKET NUMBER (2)
0 5 0 0 0 3 1 7 1 3 1 OF 0 4TITLE (4)
Spurious Reactor Water Cleanup Differential Flow Isolation During Hot Shutdown

EVENT DATE (6)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (9)			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)		
0 2	0 8	8 5	8 5	0 1 2	0 0	0 2	2 5	8 5	N/A	0 5 0 0 0		
										0 5 0 0 0		

OPERATING MODE (10)		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	3	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	60.73(a)(iv)	73.71(b)					
		20.405(a)(i)(i)	60.36(c)(1)	<input type="checkbox"/>	60.73(a)(2)(v)	73.71(c)					
		20.405(a)(1)(ii)	60.36(c)(2)	<input type="checkbox"/>	60.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)					
		20.405(a)(1)(iii)	60.73(a)(2)(i)	<input type="checkbox"/>	60.73(a)(2)(viii)(A)						
		20.405(a)(1)(iv)	60.73(a)(2)(ii)	<input type="checkbox"/>	60.73(a)(2)(viii)(B)						
		20.405(a)(1)(v)	60.73(a)(2)(iii)	<input type="checkbox"/>	60.73(a)(2)(ix)						

LICENSEE CONTACT FOR THIS LER (12)
NAME
John B. Reis, Jr., Extension 463TELEPHONE NUMBER
AREA CODE
8 1 1 5 3 5 7 1 - 1 6 7 1 6 1 1

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	
B	JIM	Z191919	Z191919	N						

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 February 8, 1985 at 1630 hours, with the Unit in the hot shutdown mode, the Unit 1 Reactor Water Cleanup System (RWCU) isolated on high differential flow. There were no flowpath changes or equipment rotations in progress at the time of the trip. The Reactor being in hot shutdown, with the RWCU System blowing down to the main condenser, accounted for the isolation. Calibration deviations and possible flow perturbations combined with RWCU inlet and outlet water temperature, pressure, and density differences between actual hot shutdown operations and instrument calibrations created a large differential flow based primarily on volumetric changes.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
LaSalle County Station Unit 1	0500037385	—	012	—00	02	OF	04

TEXT (If more space is required, use additional NRC Form 288A's) (17)

I. EVENT DESCRIPTION

On 2/8/85 at 1630 hours, the Unit 1 Reactor Water Cleanup System (CE, RWCU) isolated on high differential flow (JM). At the time of the occurrence, the unit was in Hot Shutdown (mode No. 3), with vessel water temperature at approximately 480 degrees F. The RWCU System was blowing down to the main condenser in order to maintain proper vessel level.

Prior to the isolation, no abnormal conditions associated with the RWCU System flow were noted. Upon actuation, the isolation valve 1G33-F004 closed as required (off of differential flow switch 1E31-N605A). Following isolation, the RWCU System was inspected for leakage, with none being found. Upon confirmation of satisfactory system status, the high differential flow isolation signal was reset. At 1720 hours the same day the Unit 1 RWCU System satisfactorily restarted with the B filter demineralizer being placed on line. No further system abnormalities were noted.

II. CAUSE

Due to difficulties associated with the computer point history file for the date of 2/8/85 (the time of the isolation), none of the parameters associated with the Unit 1 RWCU System (at or before the trip) were available for analysis.

However during unit startup and/or shutdown conditions, the majority (if not all) of the RWCU outlet water is blown down to the main condenser in order to control vessel level. Under this RWCU mode of operation, the return flow is much cooler (approximately 300 to 400 degrees F cooler) than the inlet flow, since the blowdown water does not return through the Regenerative Heat Exchangers. This results in a differential flow based on volumetric changes (only) of approximately 40 to 50 GPM.

Due to the system conditions present during the aforementioned shutdown (or any other reactor startup and/or shutdown), differential flow isolations can be expected without any actual leakage being present.

III. PROBABLE CONSEQUENCES OF THE OCCURENCE

The isolation occurred in accordance with system design. Safe plant conditions were maintained at all times. With the Reactor Water Cleanup System isolated, plant operations may continue (in either the Run, Startup/Hot Standby or Hot Shutdown Modes) as long as chemistry specifications are not exceeded.

Prior to resetting the isolations and restarting a pump, the RWCU System was checked for leaks, with none being found.

As previously noted, 50 minutes after the high differential flow isolation signal was received, the Unit 1 RWCU System was back in operation.

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

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LaSalle County Station Unit 1	01501-1013173	85	-0112	-010	03	OF 04

TEXT (If more space is required, use additional NRC Form 286A's) (17)

IV. CORRECTIVE ACTIONS

1. An investigation of the Reactor Water Cleanup Areas revealed no actual leaks were present.
2. The System was promptly restarted with no difficulties.
3. Investigation shows that one or more of the following actions could/should be pursued. (AIR 1-85-67028)
 - a. Recalibrate the flow elements to reflect actual mass flow rates at normal operating conditions or to reflect STP volumetric flow rates at normal operating conditions.
 - b. Change the alarm trip point to allow for indicated differential flow due to volumetric flow changes during the Unit Startup/Shutdown and normal operating modes.
 - c. Revise the flow monitoring system to allow for temperature inputs in determining the actual flow rates. (System pressure variance has little effect upon water density.)
 - d. Replace the present single alarm point flow switches 1E31-N605A and 1E31-N605B with dual alarm point switches: one alarm switch for startup conditions, and the other switch for normal operating conditions. The applicable set point can be selected via contacts in series with the switches, with the contacts' status controlled by the positions of the following valves:
 - i. The condenser blowdown valve, 1G33-F034
 - ii. And/or the waste surge tank inlet valve, 1G33-F035
 - iii. And/or the feedwater inlet valve, 1G33-F040
4. General Electric, the System Vendor, and one of the RWCU Cognizant CECO Engineers are presently investigating the design basis for the isolation setpoint, and the accuracy of the flow loops. Refer to AIR-01-84-67137.
5. AIR 01-84-67106 is currently outstanding to review the present calibrations associated with the flow instrumentation.

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EXPIRES 8/31/85

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					0 4	OF	0 4

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

V. PREVIOUS OCCURRENCES

Previous events of this type have occurred on Unit 1 and Unit 2 as described in the following LER's:

373/84-030	374/84-029	374/84-073
373/84-033	374/84-041	374/84-079
373/84-040	374/84-044	374/84-089
373/84-055	374/84-054	374/84-093
373/84-082	374/84-057	
373/85-003	374/84-064	

VI. NAME AND TELEPHONE NUMBER OF PREPARER

John B. Reis, 815/357-6761, Extension 463.



Commonwealth Edison
LaSalle County Nuclear Station
Rural Route #1, Box 220
Marseilles, Illinois 61341
Telephone 815/357-6761

February 25, 1985

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

Dear Sir:

Reportable Occurrence Report #85-012-00, Docket #050-373 is being submitted to your office in accordance with 10CFR 50.73.

R. D. Buehler
for G. J. Diederich
Superintendent
LaSalle County Station

GJD/MLD/cw

Enclosure

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

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