

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) LaSalle County Station Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 7 1 3					PAGE (3) 1 OF 1							
TITLE (4) Reactor Water Cleanup Differential Flow Isolation																						
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 NA				DOCKET NUMBER(S) 0 5 0 0 0									
0	2	1	2	8	5	8	5	0	1	3	0	0	3	0	8	8	5	0	5	0	0	0
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more as following) (11)																				
1		20.402(b)				20.405(e)				<input checked="" type="checkbox"/> 80.73(a)(2)(iv)				73.71(b)								
POWER LEVEL (10)		20.405(a)(1)(i)				80.36(e)(1)				<input type="checkbox"/> 80.73(a)(2)(v)				73.71(e)								
Q 8 9		20.405(a)(1)(ii)				80.36(e)(2)				<input type="checkbox"/> 80.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)								
		20.405(a)(1)(iii)				80.73(a)(2)(i)				<input type="checkbox"/> 80.73(a)(2)(viii)(A)												
		20.405(a)(1)(iv)				80.73(a)(2)(ii)				<input type="checkbox"/> 80.73(a)(2)(viii)(B)												
		20.405(a)(1)(v)				80.73(a)(2)(iii)				<input type="checkbox"/> 80.73(a)(2)(ix)												
LICENSEE CONTACT FOR THIS LER (12)																						
NAME John B. Reis, Jr., extension 463										TELEPHONE NUMBER AREA CODE 815 351 71-16716												
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																						
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD												
X	J M	V	Z Z Z Z	N																		
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 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 2/12/85 at 0930 hours, the Unit 1 Reactor Water Cleanup system (RWCU) isolated on High Differential Flow while finishing the precoating of the "C" filter demineralizer and placing it on hold. At the time of the occurrence, the unit was in Operating Mode 1 with Reactor Power at approximately 89%. Both the "A" and "B" filter demineralizers were on line. The isolation was a result of the following conditions present at the time of the event:

1. An accumulated (internal) system leakage obtained when none of the 3 filter demineralizers are isolated (at their inlet).
2. Flow perturbations incurred when placing and/or removing a filter demineralizer on/off line.
3. A normal operating differential flow indication based on calibration deviations and temperature differences between the inlet and outlet flow sensing loops.

Following isolation, the RWCU system was inspected for external leakage with none being found, upon which the isolation was reset and the system satisfactorily restarted. No further system abnormalities were noted. Safe plant conditions were maintained at all times.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

I. EVENT DESCRIPTION

On 2/12/85 at 0930 hours, the Unit 1 Reactor Water Cleanup system (CE, RWCU) isolated on High Differential Flow (JM) while finishing the precoating of the "C" filter demineralizer and placing it into hold. At the time of the occurrence, the unit was in Operating Mode 1, with reactor power at approximately 89%. Both the "A" and "B" filter demineralizers were on line.

Upon actuation, isolation valve 1G33-F004 closed as required. Following isolation, the RWCU system was inspected for external leakage with none being found. Upon confirmation of satisfactory system status, the high differential flow isolation signal was reset. At 0935 hours the same day the Unit 1 RWCU system was satisfactorily restarted with the "A" and "B" pumps, and "B" and "C" filter demineralizers being placed on line. No further system abnormalities were noted.

II. CAUSE

The Unit 1 RWCU differential flow isolation on 2/12/85 was the combined result of the following conditions present at the time of the event:

1. Various isolation and relief valves associated with the three filter demineralizers leak by internally, either to the RWCU or Reactor Building Equipment Drain systems. Under the aforementioned configuration in which two filter demineralizers are on line while placing the third into "hold", the RWCU differential flow sensor sees the combined accumulated (internal) leakage of all three filter demineralizers, since a filter demineralizer in "hold" has its inlet open to the vessel and its outlet isolated.
2. Flow perturbations are incurred when placing and/or removing a filter demineralizer on or off line. These flow perturbations can be seen as a differential flow by the sensor loop.
3. In addition to internal leakage and perturbation concerns, a normal operating differential flow indication exists, based on the following:
  - a. The indication loop was out of calibration, indicating approximately 15 to 20 gpm high (conservative with respect to Technical Specifications).
  - b. Based on the normal system operating conditions and the flow element parameters, the present calibration setpoints are overly conservative, resulting in an inlet flow indication that is 11.3 gpm high at full scale, and a feedwater return flow indication that is 4.9 gpm high at full scale, for a differential flow indication which is 6.4 gpm high at full scale.

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APPROVED OMB NO. 3150-0104  
EXPIRES 8/31/95

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LaSalle County Station Unit 1	0510003713	85	013	0	03	OF 04

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

II. CAUSE (CONTINUED)

- c. Due to temperature, pressure and density differences in the RWCU inlet and outlet water, a large differential flow indication, based on the water's volumetric change, occurs. At rated conditions via the feedwater return loop, this volumetric change with no leakage results in a differential flow indication of 32.4 gpm.

Accordingly, the net operating differential flow indication was approximately 55 gpm, reducing the initial trip value of 69.5 gpm to an effective trip value of approximately 15 gpm.

Since the accuracy of each flow sensing loop is between 2 and 6 gpm, the net accuracy of the 3 loops plus the differential flow sensor is on the order of the effective trip value of 15 gpm. Therefore, little if any flow/pressure perturbation or internal system leakage would be required to trip the system.

III. PROBABLE CONSEQUENCES OF THE OCCURRENCE

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.

IV. CORRECTIVE ACTIONS

1. An investigation of the Reactor Water Cleanup areas revealed that although there may have been slight leakage internal to the RWCU and Reactor Building Equipment Drain systems, no uncontrolled leakage to the atmosphere was present.
2. The isolations were reset and the system was promptly restarted with no difficulties.
3. Various Work Requests have been generated to repair the leaks associated with the three filter demineralizers as time and conditions permit. Refer to the following Work Requests: L20308, L23022, L31821, L37781, L37782, L38707, L39108, L40596, L41086, L43344, L43871, L45691, and L45746. (AIR 1-85-67039)

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

IV. CORRECTIVE ACTIONS

4. Operating experience has shown that isolations similar to the one being discussed can be prevented by placing the depleted filter demineralizer on hold and isolating prior to de-isolating the fresh filter demineralizer and placing it in service. Caution cards #1-78-85, 1-79-85 and 1-80-85 have been placed on the F/D-1A, 1B and 1C portions of the RWCU panel 1G33-2001-26 stating that the aforementioned sequence is necessary. Since a similar isolation problem does not occur for Unit 2 when placing a new F/D on line with two F/D's in operation, Unit 2 caution cards were not written.
5. The Unit 1 differential flow loop was recalibrated to the correct setpoint.
6. A Modification request has been generated to revise the differential flow calibration setpoints. (AIR 1-84-67106)
7. AIR 1-84-67137 has been written to review the trip delay timer to determine if a possible increase is warranted.
8. AIR 01-85-67037 and requests for LOP-RT-04/05/06/07 procedure changes have been generated to incorporate the aforementioned sequence.

V. PREVIOUS OCCURRENCES

The following LER's are associated with RWCU differential flow trips during equipment rotations.

373/84-023	374/84-013
373/84-032	374/84-023
373/84-043	374/84-036
373/84-045	374/84-037
373/84-046	374/84-066
373/84-050	

VI. NAME AND TELEPHONE NUMBER OF PREPARER

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





**Commonwealth Edison**  
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Marseilles, Illinois 61341  
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March 3, 1985

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

Dear Sir:

Reportable Occurrence Report #85-013-00, Docket #050-373 is being submitted to your office in accordance with 10CFR 50.73.

*C E Sargent*  
for G. J. Diederich  
Superintendent  
LaSalle County Station

GJD/MLD/kg

Enclosure

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

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