NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
LaSalle County Station Unit 2	0 5 0 0 0 3 7 4	1 OF 1 2

TITLE (4)
Hydraulic Control Unit Accumulator Pressure Switch Failures

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 2	1 5	8 5	8 5	— 0 1 0	— 0 0	0 3	1 5	8 5	LaSalle Co. Unit 1	0 5 0 0 0 3 7 3
										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 9 9	20.402(b)	20.405(a)	80.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	80.36(c)(1)	80.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	80.36(c)(2)	80.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 80.73(a)(2)(i)	80.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	80.73(a)(2)(ii)	80.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	80.73(a)(2)(iii)	80.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Perry E. Baker, extension 576	8 1 5 3 5 7 6 7 6 1

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	A A	P S	B 0 7 0	Y							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 6	1 5	8 5

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

It was found that on Units 1 and 2 the hydraulic control unit accumulator pressure switches were out of calibration low at various times between 2/15/85 and 3/1/85. On Unit 1 180 out of 185 switches had drifted and on Unit 2 184 out of 185 switches had drifted out of calibration. Both units were in the Run Mode at the times of the occurrences, therefore scram action was not significantly affected. The cause of the event is attributed to setpoint drift. The setpoints are drifting to a lower pressure. No cause for the drifting has been determined at this time. Current corrective action consists of pursuing a higher initial setpoint to compensate for anticipated drift.

IE 22
1/1

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

I. EVENT DESCRIPTION

On 2/15/85 at 0400 hours during the performance of weekly operating surveillances, the control rod drive (CRD, AA) Hydraulic Control Unit (HCU) accumulator pressure for control rod 38-39 was found to be at 900 psig. Upon contacting the Unit 2 Control Room Operator, it was discovered that the Hydraulic Control Unit (HCU) accumulator trouble alarm was not initiated. The Technical Specification setpoint for the accumulator low pressure alarm is 940 +30, -0 psig (Technical Specification 4.1.3.5.b.1.b). A pressure of 900 psig is less than the allowable minimum pressure required by Technical Specification 4.3.1.5.a. The HCU accumulator was declared inoperable and recharged, and Work Request L46433 was written to recalibrate the pressure switch. The control rod, however, was trippable. Unit 2 was at 99% power and was operating in Mode 1.

On 2/15/85 at 1030 hours a second control rod drive HCU for control rod 50-19 received an accumulator trouble alarm due to low pressure in the accumulator. HCU accumulator 38-39 was still inoperable since the pressure switch recalibration procedure had not yet been completed. A GSEP unusual event was declared for Unit 2 since a Technical Specification shutdown was required. Technical Specification 3.1.3.5 requires that with two or more HCU accumulators inoperable, the control rods should be declared inoperable and a CRD pump immediately be verified operating properly by inserting and withdrawing a control rod one notch. It is also required that the inoperable control rods be fully inserted, otherwise, be in Hot Shutdown within 12 hours. The unit Operator immediately verified that a CRD pump was operable by inserting and withdrawing a control rod one notch. He then waited for the Nuclear Engineers to evaluate the core with the two inoperable control rods inserted. The HCU accumulator for control rod 50-19 was recharged and declared operable at 1136 hours on 2/15/85 which terminated the GSEP. The control rods had not been inserted because the Nuclear Engineers were still evaluating the effect on core flux patterns of inserting the control rods. At 1200 hours control rod 38-39 was declared inoperable but trippable.

On 2/15/85 at 1240 a GSEP Unusual Event for Unit 2 was again initiated due to HCU 50-19 accumulator again receiving a low pressure alarm and HCU 38-39 accumulator still being inoperable due to a calibration being performed on the HCU accumulator pressure switch. The CRD pump was again verified to be operating by inserting and withdrawing a control rod one notch. A leak check of HCU 50-19 revealed that the charging connection was leaking. The connection was cleaned and a new cap was installed. The HCU accumulator was successfully recharged at 1320 hours and declared operable. During this time, the HCU accumulator 38-39 pressure switch was found out of tolerance in the non-conservative direction. It exceeded the allowable setpoint by 72 psi, alarming on a decreasing pressure of 868 psig. The switch was recalibrated and returned to service on 2/15/85 at 1354 hours. The GSEP was terminated at this time.

As a result of the above events weekly surveillance procedure LOS-AA-W1 was performed two days later on 2/17/85. This surveillance revealed that on 2/17/85 at 0845 HCU's 38-47 and 30-55 had pressures less than 940 psig with no Control Room alarms for low accumulator pressure. The HCU accumulators were declared inoper-

I. EVENT DESCRIPTION (CONTINUED)

able ard actions required per Technical Specifications 3.1.3.5 and 3.1.3.1 for adjacent control rods were completed with the exception that the control rods could not be fully inserted until reactor power was decreased by 150 MWe. A GSEP Unusual Event was declared due to a shutdown required by a Technical Specification Action Statement. The unit was at 99% power when the load drop began. Power reduction began at 0900 hours from 1100 MWe and the load drop finished at 1000 hours at 960 MWe. HCU accumulator 38-47 was recharged at 0935 hours and HCU accumulator 38-55 was recharged at 1005 hours. Control rod 30-55 was fully inserted at 1008 hours and taken out-of-service (electrically disarmed) at 1040 hours on 2/17/85. The GSEP Unusual Event could have been terminated at this time; however, since any additional accumulator's problems would have resulted in a re-initiation of the GSEP, it was decided to continue the GSEP event until both pressure switches were re-calibrated. HCU 38-47 remained on an 8-hour timeclock per Technical Specification 3.1.3.5 starting at 0845 hours. Instrument Maintenance (IM) personnel were contacted at 0915 hours to repair/recalibrate the HCU accumulator pressure switches. Work on HCU 30-55 pressure switch started at 1315 hours. At 1620 control rod 38-47 was declared inoperable but trippable per Technical Specification 3.1.3.5 (accumulator inoperable for 8 hours) and it was verified that control rod 38-47 could be inserted at least one notch with normal CRD water pressure by inserting it from position 48 to 46 and then moving it back to position 48. At 1735 hours, control rod 30-55 accumulator low pressure switch was replaced and calibrated. Control rod 30-55 was then declared operable and returned to service at 1745. ,Reactor power was then decreased an additional 130 MWe to allow the withdrawal of control rod 30-55 to position 48 (full out) from its position of 00 (full in). At 1812 hours HCU 38-47 accumulator pressure switch was re-calibrated and declared operable. The GSEP Unusual Event was exited at 1830 hours on 2/17/85. At 1854 hours the required power drop was completed and control rod 30-55 was withdrawn to position 48 (its original position). Unit 2 then started a ramp up in power until it reached 99% power.

Due to the second set of pressure switch failures, a priority Work Request was initiated to recalibrate all HCU accumulator pressure switches on Unit 2. In addition, a 4-hour check of all accumulator pressures was initiated on a special log. By 2/18/85 an additional 16 HCU pressure switches were found to have setpoints less than the allowed lower limit of 940 psig.

Due to the large number of pressure switch failures, this event was classified as a Potentially Significant Event on the morning of 2/18/85 and at 0800 hours an on-site review was conducted. A summary of the on-site review follows:

1. Take hourly readings on Unit 2 accumulator pressure indicators.

2. Unit 1 accumulator pressure indicators to be read daily until further notice.

3. Continue around the clock recalibration on Unit 2 pressure switches.

4. Conduct a random sample of calibration checks on Unit 1 accumulator pressure switches.

I. EVENT DESCRIPTION (CONTINUED)

5. Consideration to step up the frequency of calibration should be made.

6. Continue investigation to determine any other extenuating circumstances.

7. Operations personnel were instructed to recharge any accumulators found below 975 PSIG during their surveillance.

Representatives from General Electric and Station Nuclear Engineering Department were contacted and were informed of the problems that had been encountered. A search of NPRDS records was initiated to find out if similar problems existed at other utilities. NPRDS showed no history of failures for this type switch. As part of the investigation a sample of 10 HCU accumulator pressure switches on Unit 1 were checked.

On 2/21/85 it was found that 7 out of 10 pressure switches on Unit 1 were out of tolerance low. All Unit 1 switches had previously been calibrated in October, 1984. An hourly check of all Unit 1 HCU pressure indicators was initiated. It was decided that a calibration of all Unit 1 HCU accumulator pressure switches would commence as soon as Unit 2 calibrations were completed. No further events occurred on Unit 2 until 2/26/85 at 0922. At this time two HCU accumulators (HCU 22-47 and 18-43) were declared inoperable due to low pressure alarms. A GSEP Unusual Event was initiated. HCU 22-47 was inoperable due to the recalibration on the accumulator pressure switch in progress and HCU 18-43 had developed a leaking instrument stop valve (111 valve) which allowed the accumulator to depressurize to below the alarm setpoint of 940 psig. The valve failure was due to the operation of opening and closing during the calibration of the accumulator pressure switch. The accumulator was immediately repressurized to above 940 psig. Shortly after the HCU 18-43 accumulator was recharged (approximately 3 minutes) the calibration on HCU 22-47 accumulator pressure switch was completed. The 111 valve was replaced on HCU 18-43 and at 1100 hours on 2/26/85 the GSEP Unusual Event was terminated. The calibration for all HCU pressure switches continued and the last calibration was completed on Unit 2 without further incident on 2/27/85. The calibration of Unit 1 HCU accumulator pressure switches started on 2/27/85 when Unit 2 calibrations were completed. On 3/1/85 at 1000 hours the Unit 1 HCU accumulator pressure switch calibrations were completed.

For Unit 1 there were only 5 out of 185 HCU accumulator pressure switches (HCU 14-15, 46-27, 58-23, 50-31, 46-19) that were found within the Technical Specification limit of 940 +30, -0 psig. Of the 185 HCU accumulator pressure switches on Unit 2, only 1 (HCU 50-51) was found to be within the acceptable range of 940 +30, -0 psig. A list of the as found setpoints for the failed pressure switches is attached. Unit 2 HCU pressure switches were previously calibrated between 10/15/83 and 11/7/83. Unit 1 HCU pressure switches were previously calibrated during the month of October, 1984.

During this entire event the reactors were maintained in Mode 1 at 95% or greater power except for the specific times mentioned in the report.

For all events, immediate actions were taken to ensure safe and proper operation of both LaSalle units.

II. CAUSE

The cause of the events is apparently due to setpoint drift. The setpoints are drifting to a lower pressure (non-conservative). No cause for the drifting has been determined at this time.

III. PROBABLE CONSEQUENCES OF THE OCCURRENCE

Since the units were in the Run Mode (Operational Condition 1) and pressurized at all times since 2/15/85, scram action was not significantly affected. Reactor pressure is sufficient alone to insert the control rods. Weekly checks of HCU accumulator pressure prior to the event have verified that control rod accumulator pressures were acceptable. Increased surveillance of accumulator pressure during the event and until resolution ensures scram capability will remain intact.

IV. CORRECTIVE ACTION

1. Immediate actions were taken to repressurize any accumulator found below 940 psig.

2. An on-site review was conducted on 2/18/85 with the following corrective actions taken at that time:

   a. Take hourly readings on Unit 2 accumulator pressure indicators until recalibrations were completed.

   b. Unit 1 accumulator pressure indicators to be read daily until further notice. (After Unit 1 problems were identified this frequency was increased to hourly until recalibrations were completed.)

   c. Continue around the clock recalibration on Unit 2 pressure switches.

   d. Conduct a random sample for Unit 1 accumulator switches.

   e. Consideration to step up the frequency of calibration should be made. (AIR 1-85-67043)

   f. Continue investigation to determine any other extenuating circumstances. The pressure switch manufacturer, Barksdale, has been included in an investigation of the cause of the instrument drift. (AIR 1-85-67044) This LER will be supplemented when the investigation is complete.

3. The Operating surveillance procedure LOS-AA-W1 was revised to instruct personnel to recharge any accumulators found to be less than 97, psig.

IV. CORRECTIVE ACTION (CONTINUED)

4. A Technical Specification change will be pursued to revise the setpoint for the low pressure alarm to greater than or equal to 940 psig. This will allow the switches to be set higher to allow more for drift. (AIR 01-85-67042) In addition, the revision will provide specific actions for pressure switch or level switch failures.

V. PREVIOUS OCCURRENCES

Similar accumulator pressure switch failures have occurred in the past. Because of plant conditions and single failures, none of these occurrences were reported.

VI. PREPARED BY:

Perry E. Baker, 815/357-6761, extension 576.

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

ATTACHMENT A

UNIT 1

HCU	AS FOUND PSIG	HCU	AS FOUND PSIG	HCU	AS FOUND PSIG
30-03	902	10-19	897	18-31	915
26-03	915	14-19	917	14-31	925
22-03	905	18-19	912	10-31	900
18-03	902	22-19	897	06-31	887
30-07	902	26-19	892	02-31	910
26-07	925	30-19	897	02-35	925
22-07	895	30-23	910	06-35	912
18-07	905	26-23	925	10-35	915
14-07	905	22-23	867	14-35	920
10-11	922	18-23	915	18-35	930
14-11	910	14-23	895	22-35	915
18-11	935	10-23	905	26-35	925
22-11	937	06-23	900	26-39	925
26-11	897	02-23	900	22-39	915
30-11	910	02-27	890	18-39	912
30-15	900	06-27	892	14-39	930
26-15	895	10-27	917	10-39	915
22-15	922	14-27	900	06-39	912
18-15	915	18-27	900	02-39	925
14-15	940	22-27	920	02-43	925
10-15	902	26-27	905	06-43	925
06-15	875	30-27	920	10-43	920
02-19	915	26-31	925	14-43	925
06-19	887	22-31	925	18-43	900

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

ATTACHMENT A

UNIT 1

HCU	AS FOUND PSIG	HCU	AS FOUND PSIG	HCU	AS FOUND PSIG
22-43	905	30-55	910	34-43	900
26-43	912	34-55	900	30-43	912
26-47	912	38-55	917	30-39	912
22-47	905	42-55	897	34-39	890
18-47	900	46-55	882	38-39	900
14-47	920	50-51	887	42-39	912
10-47	937	46-51	937	46-39	900
06-47	915	42-51	905	50-39	925
14-55	913	38-51	902	54-39	912
10-51	905	34-51	895	58-39	900
14-51	925	30-51	890	58-35	885
18-51	912	30-47	920	54-35	892
22-51	912	34-47	914	50-35	915
26-51	910	38-47	907	46-35	907
26-59	912	42-47	900	42-35	887
22-59	905	46-47	900	38-35	907
18-59	912	50-47	920	34-35	880
26-55	925	54-47	912	30-35	900
22-55	912	58-43	880	30-31	707
18-55	915	54-43	923	34-31	915
42-59	892	50-43	887	38-31	900
38-59	915	46-43	900	42-31	897
34-59	885	42-43	925	46-31	900
30-59	915	38-43	887	50-31	945

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

ATTACHMENT A

UNIT 1

HCU	AS FOUND PSIG	HCU	AS FOUND PSIG
54-31	920	38-15	925
58-31	912	42-15	917
58-27	927	46-15	912
54-27	905	50-15	935
50-27	907	54-15	NA
46-27	943	46-07	935
42-27	895	50-11	922
38-27	910	46-11	900
34-27	925	42-11	912
34-23	910	38-11	912
38-23	907	34-11	903
42-23	935	34-07	906
46-23	912	38-07	910
50-23	925	42-07	912
54-23	910	34-03	906
58-23	945	38-03	915
58-19	925	42-03	905
54-19	930		
50-19	910		
46-19	957		
42-19	904		
38-19	922		
34-19	912		
34-15	895		

ATTACHMENT B

UNIT 2

HCU	AS FOUND PSIG	HCU	AS FOUND PSIG	HCU	AS FOUND PSIG
30-03	880	10-19	877	18-31	898
26-03	910	14-19	905	14-31	882
22-03	930	18-19	898	10-31	888
18-03	910	22-19	885	06-31	895
30-07	895	26-19	838	02-31	905
26-07	900	30-19	895	02-35	895
22-07	895	30-23	880	06-35	895
18-07	910	26-23	892	10-35	0
14-07	915	22-23	887	14-35	908
10-11	910	18-23	917	18-35	885
14-11	900	14-23	887	22-35	905
18-11	890	10-23	907	26-35	890
22-11	900	06-23	909	26-39	902
26-11	860	02-23	885	22-39	937
30-11	880	02-27	900	18-39	900
30-15	925	06-27	865	14-39	870
26-15	875	10-27	932	10-39	875
22-15	930	14-27	923	06-39	880
18-15	820	18-27	888	02-39	870
14-15	890	22-27	898	02-43	910
10-15	911	26-27	912	06-43	894
06-15	906	30-27	907	10-43	912
02-19	880	26-31	898	14-43	907
06-19	895	22-31	895	18-43	887

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

ATTACHMENT B

UNIT 2

HCU	AS FOUND PSIG	HCU	AS FOUND PSIG	HCU	AS FOUND PSIG
22-43	707	30-55	754	34-43	877
26-43	925	34-55	875	30-43	880
26-47	905	38-55	915	30-39	900
22-47	Broke	42-55	847	34-39	895
18-47	880	46-55	925	38-39	937
14-47	837	50-51	950	42-39	900
10-47	887	46-51	935	46-39	880
06-47	905	42-51	912	50-39	928
14-55	900	38-51	825	54-39	915
10-51	875	34-51	895	58-39	902
14-51	875	30-51	905	58-35	900
18-51	880	30-47	916	54-35	900
22-51	905	34-47	903	50-35	912
26-51	910	38-47	880	46-35	875
26-59	875	42-47	886	42-35	875
22-59	905	46-47	902	38-35	900
18-59	900	50-47	905	34-35	902
26-55	885	54-47	882	30-35	898
22-55	885	58-43	885	30-31	925
18-55	860	54-43	903	34-31	887
42-59	890	50-43	900	38-31	898
38-59	907	46-43	903	42-31	730
34-59	905	42-43	887	46-31	890
30-59	882	38-43	914	50-31	875

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

ATTACHMENT B

UNIT 2

HCU	AS FOUND PSIG	HCU	AS FOUND PSIG
54-31	895	38-[illegible]	840
58-31	880	[illegible]-15	880
58-27	875	46-15	880
54-27	880	50-15	920
50-27	890	54-15	830
46-27	880	46-07	880
42-27	890	50-11	890
38-27	910	46-11	885
34-27	901	42-11	895
34-23	928	38-11	910
38-23	902	34-11	880
42-23	883	34-07	870
46-23	889	38-07	887
50-23	867	42-07	900
54-23	885	34-03	912
58-23	900	38-03	872
58-19	879	42-03	920
54-19	865		
50-19	912		
46-19	925		
42-19	890		
38-19	860		
34-19	890		
34-15	890		

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

March 15, 1985

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

Dear Sir:

Reportable Occurrence Report #85-010-00, Docket #050-374 is being submitted to your office in accordnce with 10CFR 50.73.

R. D. Bishop
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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