

LICENSEE EVENT REPORT

CONTROL BLOCK:

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(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1					L	L	S	C	I	(2)	0	0	-	0	0	0	0	0	-	0	0	(3)	4	1	0	0	0	(4)			(5)							
LICENSEE CODE											14	LICENSE NUMBER											25	LICENSE TYPE						30	CAT								58

CON'T

REPORT SOURCE L 6 0 5 0 0 0 3 7 3 7 0 5 0 5 8 3 2 0 5 3 1 8 3 9

60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

Unit 1 Reactor Water pH dropped below the T.S. limit of 5.3 (in Cold Shutdown). Conductivity increase and chloride increase did not exceed T.S. limits. pH was restored within the 72 hour time period allowed. No measurable effect on the vessel or fuel is expected. Suppression Pool and 1CY01T were also contaminated with organics but routine chemistry did not detect this at the time.

0	7
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0	8
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0	9
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SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE

X X 11 X 12 X 13 Z Z Z Z Z 14 Z 15 Z 16

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

(17) LER/RO REPORT NUMBER

EVENT YEAR		REPORT NO.			CODE		TYPE	NO.			
8	3	0	4	4	0	3	L	0			
21	22	23	24	25	26	27	28	29	30	31	32

ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS				ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER					
X	18	X	19	Z	20	Z	21	0	0	0	0	22	Y	23	N	24	Z	25	Z	9	9	9	26
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1	1	0
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1	1
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1	2
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1	3
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4	4
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FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION

1 5 B 28 0 0 0 29 NA B 31 Routine Sample 32

ACTIVITY CONTENT
RELEASED OF RELEASE AMOUNT OF ACTIVITY (35) LOCATION OF RELEASE (36)

1 6 2 33 2 34 NA NA

PERSONNEL EXPOSURES		TYPE		DESCRIPTION
NUMBER				
1	7	0	0	0
		37	Z	38
				NA

PERSONNEL INJURIES	
NUMBER	DESCRIPTION
0000	NA

7	8	9	10	11	12
LOSS OF OR DAMAGE TO FACILITY (43)					
TYPE		DESCRIPTION			
1-7		NA			

1 9 7 8 9 10
PUBLICITY
ISSUED DESCRIPTION (45) 8306130349 830531
PDR ADOCK 05000373 NRC USE ONLY

2 0 N 44 S PDR
7 8 9 10 68 69 8
NAME OF PREPARER L. N. Shearer
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Commonwealth Edison
LaSalle County Nuclear Station
Rural Route #1, Box 220
Marseilles, Illinois 61341
Telephone 815/357-6761

DMB

May 31, 1983

James G. Keppler
Regional Administrator
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Sir:

Reportable Occurrence Report #83-044/03L-0 Docket #050-373 is being submitted to your office in accordance with LaSalle County Nuclear Power Station Technical Specification 6.6.8.2.(b), conditions leading to operation in a degraded mode permitted by a limiting condition for operation or plant shutdown required by a limiting condition for operation.

G. J. Diederich
Superintendent
LaSalle County Station

GJD/GW/rg

Enclosure

cc: Director of Inspection & Enforcement
Director of Management Information & Program Control
U.S. NRC Document Management Branch
Inpo-Records Center
File/NRC

JUN 6 1983

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- I. LER NUMBER: 83-044/03L-0
- II. LASALLE COUNTY STATION: Unit 1
- III. DOCKET NUMBER: 050-373
- IV. EVENT DESCRIPTION:

At 1210 hours, 05 May 83, Unit 1 Reactor Water pH dropped to 5.2. S.U. at 25°C. This exceeded the lower pH limit for Operational Condition 4 and 5 as listed in Technical Specification Table 3.4.4-1. The Reactor Water pH remained below 5.3 S.U. (with the exception of one measurement of 5.3 S.U. at 0001 hours 06 May 83 and another measurement of 5.5 S.U. at 1600 hours 07 May 83) until 0001 hours 08 May 83, at which time the pH came back into the allowed range and remained within specifications. The lowest pH value measured was 5.1 S.U. The pH was brought back within specifications within the 72 hours allowed by Technical Specification 3.4.4.c.1.

V. PROBABLE CONSEQUENCES OF THE OCCURRENCE:

A written evaluation of the effects of the low pH on the Reactor Pressure Vessel (RPV) has been received from General Electric. General Electric states that there will only be "a minor effect on the corrosion kinetics of the RPV" and that "the increase in the general corrosion of stainless steel will not be measurable."

The reactor was shut down during this occurrence. The reactor water low pH had minimal impact since the reactor was in a safe condition at all times. Therefore, the health and safety of the public was not jeopardized in any way.

VI. CAUSE:

The cause of the low pH was due to organic intrusion into Unit-1 Reactor. The primary source of the organics has been found to be a dry cleaning solvent which got into the Radwaste System.

In an effort to reduce liquid radwaste discharges, water from the Radwaste Discharge Tank was reprocessed to the Chemical Waste Collector System through a flash evaporator. Some of the volatile organics came over with the steam, and the condensate contained enough freon to contaminate the Unit 1 Cycled Condensate Storage Tank water and the tanks in the Radwaste pathway that are normally routed to this storage tank. Then the Unit 1 CRD Cooling water, taken from the Unit 1 Cycled Condensate Storage Tank, contaminated the Unit 1 Reactor Water.

In addition, the Unit 1 Suppression Pool water was contaminated by routing Unit 1 Cycled Condensate Storage Tank water through the HPCS suction valve to the Suppression Pool. This was done to control level in the Unit 1 Cycled Condensate Storage Tank which was receiving input from the Unit 1 Condensate Polishers Effluent in an effort to improve the water quality in the Suppression Pool (through the Suppression Pool Cleanup System) and to improve the CRD cooling water quality (1CY01T).

Once the contaminated water was injected into the Reactor, the gamma flux

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and/or decay heat broke down the organic contaminants into halogens, acids, and other components. This was indicated initially as an increase in conductivity. Additional sampling of Reactor Water showed the increased chloride concentration (maximum 0.35 ppm), increased conductivity (maximum 4/6 umho/cm), and decreased pH, indicating some sort of contamination of the reactor water. Chloride and conductivity measurements did not exceed the Technical Specification limits of condition 4.

VII. CORRECTIVE ACTION:

As the quality of the Reactor Water decreased, Rad/Chem increased the frequency of sampling and analysis to once every four hours (T.S. 4.4.4 requires sampling every 8 hours). Samples were pulled from systems feeding the reactor and other sources of suspected leakage (i.e., RHR Loop "A", RBCCW, Cycled Condensate) and analyzed for conductivity, pH, and chlorides. None of these inputs indicated levels that would adversely affect the Reactor Water quality.

Tests for powdered resin/flocculant breakthrough on the Reactor Water Cleanup Filter-Demin System precoat steps and immediately after putting a Filter-Demin into service showed that resin intrusion was not the cause of poor water quality in the Reactor Vessel. The type of resin/flocculant mixture being used was checked to ensure that the resin itself was not a problem.

Tests independently isolating the RHR heat exchanger, Reactor Building Closed Cooling Water, and CRD cooling water indicated that the CRD cooling water was the source of contaminated water getting into the Reactor Vessel. Since Unit 1 Cycled Condensate was the supply for CRD cooling water, and since Unit 1 Cycled Condensate water was routed to the Unit 1 Suppression Pool, samples of Reactor Water, Unit 1 Cycled Condensate Storage Tank Water, and Suppression Pool Water were sent offsite for Total Organic Carbon, Sulfate, Fluoride, Chloride, and volatile organic identification analyses. Preliminary results indicated the presence of 1,1,2-Trichloroethane and Methylene Chloride. Immediate searches of where organic cleaning solvents used on the site indicated that some of the floor drains and decon pits may have been the pathway into Radwaste.

Further investigation indicated the primary contaminant to be 1,1,2-Trichloro-1,2,2-Trifluoroethane (freon) used in the dry cleaning system. Once the identity of the contaminant was determined, a vendor was contracted to perform on-site gas chromatograph analyses to quantify the contaminants in the different process and Radwaste systems.

The station has re-emphasized control of halogenated hydrocarbons by informing all onsite departments and construction groups of restricted solvents. The program to control the quantities, uses, and disposal of organic solvents has been strengthened.

The cleanup of the Reactor Water was effected using the normal Reactor Water Cleanup Filter-Demins to remove the organic break down products. Cleanup of the Suppression Pool was effected by thorough mixing of the pool with the LPCS pumps and heating the pool to 105°F, with the Suppression Pool spray

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and an air sparge added to try to force the organics out of solution. The Unit 1 Cycled Condensate Storage Tank was completely drained and vacuumed clean before refilling with Makeup Demineralizer supply water.

Prepared by: L. N. Shearer