

LICENSEE EVENT REPORT

CONTROL BLOCK: (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	1	1	L	L	S	C	1	2	0	0	-	0	0	0	0	0	0	0	3	4	1	6	0	0	4	5								
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34								
LICENSEE CODE														LICENSE NUMBER										LICENSE TYPE										CAT	

0	1	L	0	5	0	0	0	0	3	7	13	7	1	2	2	7	8	3	2	0	1	1	0	8	4	9							
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34						
CONT		REPORT SOURCE		DOCKET NUMBER										EVENT DATE										REPORT DATE									

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | On December 27, 1983 at approx. 0900 OA Diesel Fire Pump was damaged because of

0 3 | reverse rotation. OB DFP was also out of service because of maintenance. Service

0 4 | Water crosstie valves that supply the fire protection water system were verified

0 5 | open so that service water could supply the fire protection system if needed. This

0 6 | problem has not happened in the past.

0	9	A	B	11	E	12	X	13	V	A	L	V	E	X	14	C	15	A	16	17	8	3	1	5	3	0	1	T	0		
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SYSTEM CODE		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE										COMP. SUBCODE		VALVE SUBCODE		LER/RO REPORT NUMBER		EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.	
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRO-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER															
A		X		Z		Z		0 0 0 0		Y		N		A		C 6 6 5															

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | A block of wood caused the OA DFP discharge check valve to stick open. The stuck

1 1 | open discharge check valve caused the pump and attached engine to rotate backwards.

1 2 | Maintenance on OB DFP was expedited and OB DFP was operational Dec. 28, 1983.

1 3 | OA DFP is expected to be operational Jan. 11, 1984.

1	5	B	28	0	0	0	29	NA	30	A	31	Observation	32	NA	36
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
FACILITY STATUS		% POWER		OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION							
Z		Z		NA		A		NA							
ACTIVITY		CONTENT		AMOUNT OF ACTIVITY		LOCATION OF RELEASE									
Z		Z		NA		NA									
PERSONNEL EXPOSURES		TYPE		DESCRIPTION		PERSONNEL INJURIES		DESCRIPTION							
C		Z		NA		0		NA							
LOSS OF OR DAMAGE TO FACILITY		TYPE		DESCRIPTION		PUBLICATION		DESCRIPTION							
Z		Z		NA		N		NA							

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PDR ADOCK 05000373
S PDR

NAME OF PREPARER J. Foster

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NRC USE ONLY

- I. LER NUMBER: 83-153/01T-0
- II. LASALLE COUNTY STATION: Unit 1
- III. DOCKET NUMBER: 50-373
- IV. EVENT DESCRIPTION:

Preceding the problem with OA Diesel Fire Pump (DFP), the OB DFP was inoperable starting the week of Dec. 11, 1983, because the engine was being replaced by a reconditioned engine. This was being done because of good maintenance practices and not because of any mechanical problems with the engine.

The OB DFP engine was installed and operational Dec. 18, 1983 at 2130.

On Dec. 27, 1983, at approximately 0810, OA DFP was started in test in preparation for surveillance LOS-FP-M5 (Fire Protection Sprinkler and Deluge System Valve Line-up and Alarm Check for Conditions 3, 4, and 5).

LOS-FP-M5 was completed at approximately 0900 and an operator was sent to the Lake Screen House to shut down OA DFP. At approximately 0911 an operator turned the OA DFP control switch to the OFF position, but the OA DFP would not stop. The operator then tried two more times to shut off OA DFP by turning the control switch to OFF but it still did not stop rotating.

The operator then called his supervisor and informed him of the problem. (Also, the operator informed his supervisor that there was oil leaking from the diesel air intake causing oil fumes to filter into the room at a greater than normal rate).

The operator then tried to isolate the fuel to the OA DFP and this did not stop the DFP. A shift foreman was then dispatched to the Lake Screen House (LSH) to aid in attempting to shut off the DFP.

The Fire Brigade was activated at approximately 0940 in the event that there was a fire. Fire Company #1 was also actuated as a support group in order to transport equipment necessary for fighting any fire that might occur.

It was discovered that not only air and oil fumes were coming out of the engine air intake, but air was being drawn in the diesel exhaust pipe. Thus it was believed the diesel was running backwards. CO₂ was then sprayed into the DFP exhaust pipe to try to stop the DFP, but this also did not stop the diesel rotating.

The Service Water cross-connect valves to the Fire Protection Header were then partially closed and reopened. This reduced Fire Protection header pressure temporarily and the OA DFP stopped rotating at approximately 1030. The OA DFP discharge valve was then closed to ensure the OA DFP would not rotate again.

There was never any fire at the OA DFP, the smoke came from the engine oil leaking on the engine.

LER NUMBER: 83-153/01T-0 (Cont'd)

IV. EVENT DESCRIPTION (Cont'd):

There was no fire alarm actuated as a result of the smoke and oil fumes at the Lake Screen House. The fire brigade was standing by at the LSH from the time they were called out and until after the DFP was stopped and all potential for a fire was resolved. A fire watch was also initiated in the OA Diesel Fire Pump room for 2 hours after the DFP was shut down as a safety measure.

The service water cross-tie valves to the fire protection header were verified open so that if fire protection water was needed it could be supplied by service water.

Since both DFP's were out of service, the repairs and testing to OB DFP were expedited and OB DFP was operational on Dec. 28, 1983 at 2130.

V. PROBABLE CONSEQUENCES OF THE OCCURRENCE:

LaSalle County Unit 1 was in Cold Shutdown and LaSalle County Unit 2 had not started to load fuel until Dec. 30, 1983. All the time that both DFP's were inoperable, service water was available to supply fire protection header pressure through the service water to fire protection header cross-connect valves. Service water as a source of fire protection water has been ruled unacceptable by the NRC.

OB DFP was inoperable because OB DFP engine was being replaced by a factory reconditioned engine. The OB DFP engine was being replaced and was being sent out to be rebuilt only because of good maintenance practices and not because anything mechanically was wrong with the engine.

After OA DFP broke, the installation and testing of OB DFP was expedited and returned to service Dec. 28, 1983 at 2130

OA DFP has never failed to stop or run backward in the past at LaSalle County Station.

VI. CAUSE:

The cause of the OA DFP rotating backward was a piece of wood was lodged in OA DFP discharge check valve holding the check valve open. When the OA DFP check valve was held open, water from the Service Water System pressurized the fire protection header and water from the fire protection header flowed backward through the OA DFP and caused the DFP to rotate backward. When the OA DFP rotated backward it drove the diesel engine backward also.

The OA DFP was stopped when the Fire Protection header pressure was decreased. The valve involved was a 12" No Slam Crane check valve. The valve was manufactured by the Crane Valve Co. and was inspected by one of its field representatives and found to be in satisfactory condition.

VII. CORRECTIVE ACTION:

After the OA DFP was stopped, work requests were written to inspect the check valve, pump, angle drive, and the diesel engine.

The check valve was inspected by a Crane Co. manufacturing field representative, and a 2" x 9" x 6" piece of wood was found lodged between the valve seat and disc holding the valve open. The manufacturing representative stated the check valve was in satisfactory condition after the piece of wood was removed.

A tele/con with Amarillo Gear, the angle drive manufacturer, stated that if the angle drive gears and bearings were inspected through the angle drive inspection port and no apparent wear or damage to the gears or bearings was observed, the angle drive would probably operate satisfactorily. An inspection found the angle drive satisfactory. A tele/con with Peerless Pump, the pump manufacturer, stated that the pump probably was not damaged when it ran backward and if the pump rotates smoothly, it should operate satisfactorily. The pump and angle drive did rotate smoothly when disconnected from the engine.

A Cummins Engine representative inspected the engine and found that the diesel engine crankshaft could not be rotated. When the pump rotated the engine backward, no oil pressure was showing on the engine pressure gauge for the entire time the engine rotated backward. The Cummins Engine representative recommended rebuilding the engine and inspecting the internals for damage at the Cummins Engine rebuild center. The diesel engine has been sent to Cummins Engine and will be rebuilt as soon as possible.

The original engine removed from OB DFP was removed because of good maintenance practices and not because the engine was defective. Thus a mechanically sound engine, though used, was available to be installed in OA DFP. A new or rebuilt engine was not readily available to install is the reason the used engine will be installed in OA DFP. OA DFP should be operational by the week of January 8, 1984.

AIR 01-84-67001 will track evaluation of preventative measures so as to prevent this happening in the future.

Prepared by: J. H. Foster



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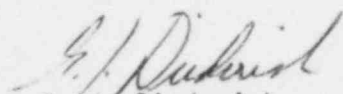
DMB

January 10, 1984

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

Dear Sir:

Reportable Occurrence Report #83-153/01T-0 Docket #050-373 is being submitted to your office in accordance with LaSalle County Nuclear Power Station Technical Specification 6.6.B.1.b, Operation of the unit or affected systems when any parameter or operation subject to a limiting condition is less conservative than the least conservative aspect of the limiting condition for operation established in the technical specifications.


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

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