

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) OYSTER CREEK, UNIT 1										DOCKET NUMBER (2) 0 5 0 0 0 2 1 9					PAGE (3) 1 OF 4					
TITLE (4) AUTOMATIC SCRAM ON LOW CONDENSER VACUUM																				
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	7	0	8	5	8	5	0	1	5	0	0	8	0	8	5	0	5	0	0	0
OPERATING MODE (9) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																		
POWER LEVEL (10) 0 9 8		20.402(b)				20.406(a)				X 60.73(a)(2)(iv)				73.71(b)						
		20.406(a)(1)(i)				60.36(a)(1)				60.73(a)(2)(v)				73.71(a)						
		20.406(a)(1)(ii)				60.36(a)(2)				60.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
		20.406(a)(1)(iii)				60.73(a)(2)(i)				60.73(a)(2)(viii)(A)										
		20.406(a)(1)(iv)				60.73(a)(2)(ii)				60.73(a)(2)(viii)(B)										
		20.406(a)(1)(v)				60.73(a)(2)(iii)				60.73(a)(2)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																				
NAME Lynne W. Leitman, Operations Engineer										TELEPHONE NUMBER 6 1 0 1 9 9 1 7 1 1 - 1 4 1 3 1 8 9										
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	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	
B	S	H	P	I	O	7	5	N												
SUPPLEMENTAL REPORT EXPECTED (14)															EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
YES (If yes, complete EXPECTED SUBMISSION DATE)															NO					

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

An automatic scram occurred on low condenser vacuum from full power on July 8, 1985. The low condenser vacuum condition occurred when Operations personnel tripped the 1-1 Steam Jet Air Ejector (SJAЕ) drain pump when it was discovered that water was spraying from a casing crack. This action allowed air to enter the common suction to both SJAЕ drain pumps which precluded their operation. Control Room operators took actions to restore condenser vacuum, however, vacuum was not recovered in time to prevent a scram. All control rods fully inserted, all plant systems responded as required, and operators took action to stabilize the reactor. A casting flaw in the casing combined with stress caused by the absence of a pump support has been determined to be the cause of the casing crack. 1-2 pump was repaired prior to plant startup, and the 1-1 pump was replaced prior to returning the plant to full power. Supports have been placed under the SJAЕ drain pumps.

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

Date of Occurrence

The event occurred on July 8, 1985 at 0319 hours.

Identification of Occurrence

An automatic scram occurred on low condenser vacuum during power operation.

This event is considered to be a reportable event as defined in 10CFR50.73(a)(2)(iv).

Conditions Prior to Occurrence

The reactor was critical, reactor pressure was 1020 psig, and reactor power was approximately 1895 MWt. Condenser vacuum was 27.2" Hg.

Description of Occurrence

Prior to the event, the plant was critical at approximately 98.2% power, reactor pressure was 1020 psig and level was 160" above the top of active fuel. Condenser vacuum was 27.2" Hg. An operator entered the Steam Jet Ejector (SJAE) room to tag out the 1-2 SJAE drain pump for maintenance. Upon entering the room, the operator noticed that the 1-1 SJAE drain pump had a large leak from a crack in the pump casing. Since the seal leak on the 1-2 pump was smaller than the 1-1 pump leak, and the 1-2 pump had operated with no adverse effect on condenser vacuum, the Group Shift Supervisor (GSS) decided to terminate the tagging of the 1-2 pump and selected it as the lead pump with the 1-1 pump in reserve. While the 1-2 pump was running, condenser vacuum was monitored with no apparent problems, initially. As preparations were made to re-enter the SJAE room to examine the 1-1 pump, a Control Room operator saw condenser vacuum indication decrease to approximately 25.5" Hg and commenced reducing reactor power using control rods and recirculation flow. At this time it was noted that the 1-1 pump had initiated automatically due to drain tank high level. Continuous cycling of offgas flow between 0 and 70 SCFM was noted, indicating improper SJAE operation. When condenser vacuum reached the low vacuum alarm setpoint of 25", Control Room personnel began taking preparatory actions for the scram in accordance with the Abnormal Operating Event Procedure. In an attempt to restore the system to its original lineup, the breaker for the 1-2 pump was tripped because the pump could not be tripped from the Control Room and the 1-1 pump was given a start signal. 1-1 pump did not start on the start signal, so the breaker for the 1-2 pump was closed and the

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U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

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1-2 pump was returned to service. Condenser vacuum was not recovered in time to prevent an automatic scram on low condenser vacuum from approximately 80% power. All control rods inserted fully and plant systems responded as expected.

Apparent Cause of Occurrence

1-1 SJAE drain pump had a crack in the casing, which allowed air to enter into the common suction header for both SJAE pumps and then into the 1-2 pump suction when the 1-1 pump was secured. The presence of air in the 1-2 pump suction degraded the pump's performance, causing the level in the drain tanks to back up into the SJAE condensers, severely degrading SJAE performance. Degraded SJAE performance caused a decrease in condenser vacuum. Operator actions were unsuccessful in mitigating the decreasing vacuum, and the reactor automatically scrammed on low condenser vacuum.

The cause of the 1-1 pump casing crack has been determined to be a casting flaw in the pump casing combined with stress caused by the lack of a support stool under the pump. Manufacturer's installation instructions did not require a support.

During a later shutdown it was discovered that a tube leak in the steam packing exhauster may have contributed to the event by supplying additional water to the SJAE drain tanks, compounding the flooding problem.

Analysis of Occurrence and Safety Assessment

The low condenser vacuum scram is an anticipatory function which is designed to scram the reactor before the turbine trips on decreasing vacuum. If the turbine were to trip at power, a pressure excursion would occur and result in collapsing voids, increasing moderation and increasing power. Anticipatory scrams anticipate the reactor power increase and initiate rod motion before the pressure excursion begins in order to minimize the pressure/flux peak.

There were no violations of Technical Specifications, the post trip response was normal, and the plant was stabilized in a safe condition after the scram. A high reactor water level condition followed shortly after the scram and precluded the use of the Isolation Condensers for approximately 8 minutes. However, the Isolation Condensers were not needed to remove decay heat because the turbine bypass valves and main condenser remained available for use.

Control Room personnel performed properly in the events leading up to the scram, and the safety significance of the event is considered minimal since all equipment performed its intended safety function.

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Corrective Action

Immediate corrective actions taken were:

- a. SJAE drain pump 1-2 was repaired by replacing its internal components with those from the 1-1 pump prior to plant startup.
- b. SJAE drain pump 1-1 was replaced prior to returning the plant to full power.
- c. During a later plant shutdown the tube leak on the steam packing exhauster was repaired.

A Maintenance, Construction & Facilities Department critique was held on the pump failure and the following corrective actions resulted:

- a. Temporary supports have been installed under both SJAE drain pumps.
- b. Installation of permanent SJAE drain pump supports is being evaluated.

Equipment Failure Data

Cause: B
System: SH
Component: P
Component Manufacturer: I075
Reportable to NPRDS: No

(0041A)



GPU Nuclear Corporation

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Writer's Direct Dial Number:

August 8, 1985

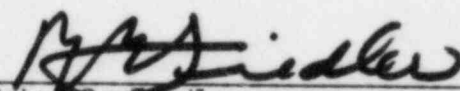
U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Licensee Event Report

This letter forwards one (1) copy of Licensee Event Report (LER)
No. 85-015.

Very truly yours,


Peter B. Friedler
Vice President and Director
Oyster Creek

PBF:JR:dam(0041A)
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