

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED: GMB NO 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
OYSTER CREEK, UNIT 1	0 5 0 0 0 2 1 9	8 5	- 0 0 6	- 0 0	0 2	OF 0 4

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Date of Occurrence

The event occurred on February 24, 1985 at approximately 1506 hours.

Identification of Occurrence

An automatic scram occurred on reactor low level during reactor startup.

This event is considered to be a reportable event as defined in 10CFR 50.73 (a)(2)(iv).

Conditions Prior to Occurrence

The reactor was sub-critical, reactor pressure was approximately 1020 psig and reactor power approximately 400 MWt. Turbine warm-up was in progress and preparations were being made for a 1000 psig (approximate) drywell inspection.

Description of Occurrence

Prior to the event, the reactor was at approximately 20% power for individual rod scram tests. To establish the plant conditions required for primary containment entry for a leakage inspection, power was decreased by inserting control rods. As power decreased to the level at which automatic level control becomes unstable, Control Room personnel took manual control of feedwater flow. After the last bypass valve closed, Control Room personnel changed control of feedwater flow from the feedwater regulating valve to the low flow control valve. Due to the high worth of the control rods inserted, power decreased significantly. This, coupled with the steam demand for turbine warming, shaft seals and condenser vacuum, caused reactor temperature to decrease rapidly and vessel level to decrease slightly.

In an attempt to restore level, feedwater flow was increased, causing a significant increase in power due to cold water addition. Subsequently, feedwater flow was reduced when level reached its normal band. During this time, as vessel pressure began to decrease, control rods were withdrawn to increase power. As power increased, the RPV pressure increased until it reached the Mechanical Pressure Regulator setpoint, at which time the first bypass valve began to open. As the first and subsequent bypass valves opened, vessel level decreased. The operators increased feedwater flow slowly to limit any further power increase. As vessel level continued to decrease and the first RPS channel scram signal was received, the operator transferred control of feedwater flow to the main feedwater regulating valve but feed flow was insufficient to meet the steam demand and level decreased further. The low level alarm was received and the scram on low level followed.

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After the reactor scram, the operator increased feed flow, which locked the valve in its runout position to protect the pump from the increased flow demand. Vessel level increased, and eventually the vessel high level alarm was received and a turbine trip signal was received. The feedwater pump was then tripped to prevent flooding of the isolation condenser steam lines. The plant was subsequently brought to a shutdown condition.

Apparent Cause of the Occurrence

The root cause of the occurrence is attributed to the following:

- a. Control Room operators decreased power at a fast rate and introduced a transient. The subsequent operator actions resulted in a decrease in reactor vessel water level. The event was worsened by the failure of an operator to establish adequate feedwater flow to the reactor to compensate for the amount of steam flow leaving the reactor. An automatic scram on low level resulted.

Contributing causes of the occurrence follow:

- b. The total feedwater flow recorder was inoperable. The operator controlling vessel level failed to use individual feed string flow indication and relied on vessel level indication instead.
- c. A modification to the feedwater regulating valves during the last outage altered the response characteristic of the valves. Prior to modification the valves were very sensitive to small adjustments at low flows. After modification the valves were less sensitive to small changes at low flows, making the operator's adjustments, based on previous valve response, conservative with respect to feedwater addition.

Analysis of Occurrence and Safety Assessment

The reactor scrammed on low reactor vessel water level, and all plant systems and subsystems responded as expected. There were no violations of Technical Specifications, and the plant was brought to a safe condition after shutdown.

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The low vessel level scram is designed to prevent continued reactor operation with steam carry-under from the reactor vessel steam separators. Steam carry-under is a condition that results from uncovering the bottom of the steam separators allowing steam to be drawn into the downcomer region. This condition increases the temperature in the downcomer region resulting in less subcooling, which leads to possible recirculation pump cavitation, decreased plant efficiency, increased core average void content, increased core pressure drop and reduced critical power ratio.

Operator action to open the feedwater regulating valve was proper, but not soon enough to ensure sufficient feedwater flow to control vessel level and prevent a scram. The safety significance of this event is considered minimal, since all equipment performed its intended function. Safety system actuation was not required to recover reactor water level.

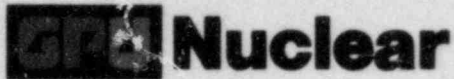
Corrective Action

Immediate corrective action was to restore vessel level after the scram occurred. Future corrective actions to prevent the occurrence of a similar event include:

- A caution will be added to the drywell access procedure alerting the operator to the sensitivity of level and pressure to power changes at low power conditions. Plant startup and shutdown procedures will be reviewed for applicability of this caution.
- This event will be reviewed with all operators during operator training.

Similar Occurrence

LER 84-30



GPU Nuclear Corporation

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March 27, 1985

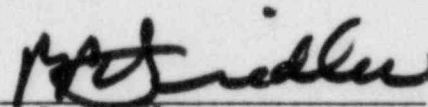
U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

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. 85-006.

Very truly yours,


Peter B. Fiedler
Vice President and Director
Oyster Creek

PBF:KB:dam(0899A)
Enclosures

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