

FLORIDA POWER & LIGHT COMPANY

December 12, 1974

Mr. Edson G. Case, Acting Director
Office of Regulation
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Case:

ABNORMAL OCCURRENCE NO. 250-74-11
OCCURRENCE DATE: DECEMBER 3, 1974
TURKEY POINT UNIT NO. 3
REACTOR COOLANT SYSTEM
PRESSURE TRANSIENT



A. CONDITION PRIOR TO OCCURRENCE

The reactor was shutdown and the Reactor Coolant System (RCS) was in a water solid condition with a temperature of 105 F and a pressure of approximately 50 psig. Pressure control was being maintained by charging into and letting down from the RCS. The letdown path was via the Residual Heat Removal System (RHRS) and the Chemical Volume Control System (CVCS) Letdown Pressure Control Valve (PCV-3-145). Reactor Coolant System venting operations were being conducted and preparations for the ten minute Reactor Coolant Pump runs were underway.

B. DESCRIPTION OF THE OCCURRENCE

When preparing to start the Reactor Coolant Pumps, the operator was required to increase the RCS pressure from 50 psig to 425 psig. To accomplish this, he placed the letdown control valve (PCV-3-145) in manual control, closed the valve, adjusted the automatic setpoint to control RCS pressure at 425 psig and returned the valve to automatic control. At about this same time (for reasons unrelated to this abnormal occurrence) a circuit breaker for one of the vital busses tripped. This resulted in a loss of power to the automatic makeup control for the Volume Control Tank and the Volume Control Tank level began to rapidly fall. The operator then directed his efforts toward relieving this condition. During this time period, the RCS pressure was increasing and was approaching the desired setpoint at a rapid rate. The operator noticing that the Pressure Control Valve still indicated closed, or nearly closed, took manual control of the valve and attempted to open it. However, the RCS pressure reached the 465 psig setpoint

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causing automatic closure of the RHRS loop suction isolation valve (MOV-3-751). The closure of MOV-3-751 isolated the RCS from its letdown path as well as from the RHRS relief valve (setpoint of 600 psig). The RCS pressure increased to about 800 psig at which time the operator stopped the charging pump. The operator reduced the RCS pressure to below the Technical Specification limit after approximately 30 seconds by operating a Pressurizer Power Operated Relief Valve.

C. CAUSE OF THE OCCURRENCE

The primary cause of the occurrence is considered to be the automatic closure of the RHRS suction isolation valves coupled with the lack of automatic overpressurization protection while operating in a water solid condition below the minimum pressurization temperature. The automatic closure of the RHRS suction isolation valves is a design change which was just incorporated during the current outage. The purpose of the design change is to prevent overpressurization of the RHR System in the event of a pressure increase in the RCS with the RHR System isolation valves open.

During the transient, the operator took action to stop the charging pumps which were providing the source of rapid pressurization. However, once the letdown flow was terminated by closure of the RHRS isolation valve, timely operator action was precluded by the rapidity of the transient.

D. ANALYSIS OF THE OCCURRENCE

A fracture mechanics analysis based on the methods of Appendix G to Section III of the ASME Boiler and Pressure Vessel Code was performed by the Nuclear Steam System Supplier. The analysis showed that the integrity of the reactor vessel was not impaired by the transient. It was further judged that the fatigue life of the vessel was not significantly affected.

An independent Florida Power & Light Co. consultant reviewed the analysis and concurred with its conclusions. A final review by Florida Power & Light Co. was conducted prior to authorizing the reactor to be taken critical.

E. CORRECTIVE ACTION

The immediate corrective action consisted of reducing the RCS pressure to a value within the Technical Specification limits and obtaining an evaluation of the incident from the Nuclear Steam System Supplier.

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As part of the permanent corrective action, an evaluation will be performed to determine if there is a need for additional overpressurization protection for the Reactor Coolant System while in a water solid condition below the minimum pressurization temperature.

F. FAILURE DATA

This is the first occurrence of this type at Turkey Point Unit Nos. 3 and 4.

Very truly yours,

JR Bauser
for A. D. Schmidt
Vice President

HNP/cpc

cc: Jack R. Newman, Esquire
Mr. Norman C. Moseley