



SUPPLEMENTARY INFORMATION

Report No.: 50-302/77-92

2. Facility: Crystal River Unit #3

3. Report Date: 11 August 1977

4. Occurrence Date: 17 July 1977

5. Identification of Occurrence:

Failure of the Steam Driven Emergency Feedwater Pump (EFP-2) to autostart on mainsteam supply lineup contrary to Technical Specification 3.7.1.2(b) which requires two emergency feedwater pumps available and operable from two independent power sources.

6. Conditions Prior to Occurrence:

Mode 3 following a unit trip.

7. Description of Occurrence:

At 0407, following a unit trip, the main feedwater pumps were lost upon the transfer of buses. The Steam Driven Emergency Feedwater Pump (EFP-2) autostarted and tripped on overspeed. The Motor Driven Emergency Feedwater Pump (EFP-1) was immediately started and the trip on EFP-2 was reset and the pump restarted. It has been demonstrated that EFP-2 will start on the second attempt. Short-term Instructions 77-053 and 77-060 were issued to require daily testing of EFP-2 and requiring that an operator be stationed at the pump on a 24 hour-a-day basis, in order to operate EFP-2 if, and when, it is required. A 15 minute steam line blowdown was accomplished every two hours and a request for additional Engineering evaluation was submitted on 20 July 1977. Subsequently, EFP-2 experienced first start overspeed trips on 22, 23, 25 July, and 1 August 1977. Upon each occasion the trip was reset and EFP-2 was run either in the recirculation mode or operationally tested by the operator stationed at the pump. Engineering evaluations were in progress during this time frame, and in addition to the previous modification to the drain system, a by-pass line around the steam inlet isolation valve ASV-5 was installed on 5 August 1977 to prevent condensate buildup. The Steam Driven Emergency Feedwater Pump has demonstrated operability to this date.

8. Designation of Apparent Cause:

The cause of this and subsequent events was determined to be condensation buildup in the steam inlet lines.

9. Analysis of Occurrence:

There is no safety hazard to the plant or public inasmuch as the redundant motor-driven Emergency Feedwater Pump has been available and operable, and EFP-2 has been in operable status, either running in the recirc mode or manually.

10. Corrective Action:

To assure the prevention of condensation accumulation in the steam supply line upstream of the throttle valve, the drain system had been modified to insure the drain capacity and a by-pass line was installed around ASV-5 to prevent condensate buildup.

11. Failure Data:

This occurrence is repetitive as reported by LER's 77-24, 77-37, and 77-56.