

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION - UNIT 1  
ABNORMAL OCCURRENCE REPORT  
AO-269/73-4  
REACTOR COOLANT SYSTEM INSTRUMENTATION TUBING LEAK

Introduction

A leak was discovered at approximately 10:30 p.m., July 5, 1973 on instrument tubing to Channel B reactor coolant pressure transmitter. The root isolation valve for this instrument line was immediately closed to isolate the leak. Since the root isolation valve is not normally accessible during unit operation due to high radiation in the area, this incident is classified as an abnormal occurrence as defined in Section 1.8d of the Oconee Unit 1 Technical Specifications. The Directorate of Regulatory Operations, Region II, was notified of the incident on July 6, 1973.

Description of the Incident

On July 5, 1973, a leak was discovered in a weld downstream of instrumentation root valve (V24) FS/1/50/68. This instrument line feeds the wide range pressure signal to Channel B Engineered Safeguards System and the narrow range pressure to Channel B Reactor Protective System. Figure 1 is a sketch showing the location of the leak. This portion of the instrumentation line is inside the biological shield, and during normal operation of the unit, this would be a high radiation area.

At the time of discovery of the incident, the unit was shut down, but Reactor Coolant System heatup was in progress prior to reactor startup. Both the Reactor Protective System (Channel B) and Engineered Safeguards System (Channel B) were functioning properly.

Corrective Action

The instrumentation line root valve (V24) FS/1/50/68 was closed immediately to isolate the blowing line. The isolation resulted in a trip of analog Channel B of the Engineered Safeguards System placing this system in a one-out-of-two mode. It also tripped Reactor Protective System Channel B low pressure bistable putting the Reactor Protective System in a one-out-of-

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three mode. Reactor Protective Channel B was then bypassed putting the Reactor Protective System in a two-out-of-three logic.

On July 6, 1973, the leak was repaired by welding. After the repair was inspected, reactor coolant system pressure was increased to 2285 psig to check the integrity of the weld repair. No leaks were detected. An evaluation of the cause of this tubing failure is now in progress.

#### Safety Analysis

If the unit is in operation, the isolation root valve is not accessible (due to radiation), and the leak cannot be isolated before shutting down the reactor. This instrument line is 3/8" stainless steel tubing, and should this line shear completely, the capacity of the high pressure injection system is more than adequate to make up any loss of coolant. Also, rupture of this line would trip one Engineered Safeguards channel and one Reactor Protective System channel immediately and could trip other channels if the pressure decays below the trip setpoint. Any activity released by such a leak would be contained. It is concluded that this incident did not present any health or safety hazards.

FIGURE 1

