

DUKE POWER COMPANY  
OCONEE UNIT 1

Report No.: AO-269/75-7

APPROVED FOR RELEASE DATE 7-9-75

Report Date: July 9, 1975

Occurrence Date: June 24, 1975

Facility: Oconee Unit 1, Seneca, South Carolina

Identification of Occurrence: High Reactor Coolant System leakage

Conditions Prior to Occurrence: Unit at full power

Description of Occurrence:

On June 24, 1975, the control operator identified a decreasing level in the Oconee Unit 1 letdown storage tank (LDST). Leakage detection systems indicated a reactor coolant leak of approximately 40 gpm outside of the Reactor Building and a reactor shutdown was initiated. An investigation determined that the reactor coolant letdown line relief valve (HP-43) had lifted and was discharging water to the miscellaneous waste holdup tank. A small portion of the water discharged through valve HP-43 was released to the Auxiliary Building as a result of a valve plug on the downstream side of the relief valve being blown out. The relief valve was found to have lifted because the inlet valve to the purification demineralizer (HP-9) had closed, blocking the letdown flow path. A bypass around the demineralizer was opened allowing valve HP-43 to reseat and stop the leakage.

Designation of Apparent Cause of Occurrence:

Valves 1HP-9 and 2HP-12, inlet to spare purification demineralizer from Unit 1 and outlet from spare purification demineralizer to Unit 2 respectively, are interlocked to prevent crossconnecting Units 1 and 2 through the purification demineralizer. The position limit switch on valve 2HP-12 failed and simulated an open position. This caused valve 1HP-9 to close. The resulting blockage of the Unit 1 letdown flow path caused a pressure increase and relief valve actuation.

The small plug on the downstream side of relief valve HP-43 had previously been lockwired in place. The cause of the plug failure could not be determined.

Analysis of Occurrence:

This incident resulted in a leakage rate of approximately 40 gpm, most of which went into a waste holdup tank. This leakage was well within the makeup capacity of the system. It was calculated that the small portion of the leakage released to the Auxiliary Building resulted in a total of 7.78 curies of gaseous activity being released, which is less than 0.016 percent of the total annual release limit. It is concluded that the health and safety of the public were not affected.

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Corrective Action:

The limit switch on valve 2HP-12 was replaced. It was found that the switch was wet and had shorted. The limit switch location is being changed to prevent a recurrence.