

DUKE POWER COMPANY
OCONEE UNIT 2

Report No.: RO-270/76-12

Report Date: November 5, 1976

Occurrence Date: October 7, 1976

Facility: Oconee Unit 2, Seneca, South Carolina

Identification of Occurrence: Containment isolation valve 2LWD-1 discovered inoperable

Conditions Prior to Occurrence: Unit at 100 percent full power

Description of Occurrence:

On October 7, 1976, after draining the Reactor Building normal sump, containment isolation valve 2LWD-1 was discovered inoperable. This valve, which is the first isolation valve in the Reactor Building normal sump drain line, provides containment integrity following an ES actuation. Valve 2LWD-1 and the redundant containment isolation valve, 2LWD-2 are both located outside the Reactor Building. Valve 2LWD-1 was promptly isolated by locking closed redundant isolation valve 2LWD-2 pursuant to Oconee Technical Specification 3.6.4.b.2.

Investigation revealed that the valve internals were defective. To maintain containment integrity during repair of 2LWD-1, a freeze plug was applied between 2LWD-1 and the Reactor Building normal sump. Additionally, a blind flange was bolted on the valve body during the period when the valve internals were removed. The valve was repaired but the motor operator and internals were damaged while attempting to cycle the valve prior to return to service. After reverifying the integrity of the freeze plug and again utilizing the blind flange, the valve was repaired, successfully tested, and returned to service.

Designation of Apparent Cause of Occurrence:

The apparent cause of this occurrence was a broken compression foot roll pin in the internals of 2LWD-1, a pneumatic diaphragm valve. The motor failure which followed initial repair of the valve resulted from an incorrect stroke setting, and in a subsequent attempt to manually cycle the valve, the newly installed roll pin was broken.

Analysis of Occurrence:

Valve 2LWD-1 was properly isolated in compliance with Oconee Technical Specification 3.6.4.b.2 by securing redundant valve 2LWD-2 in the closed

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position. Containment integrity was continuously maintained during the repair of the valve by a freeze plug located in the drain line between the Reactor Building normal sump and 2LWD-1. A safety evaluation conducted on the use of the freeze plug determined that this method of sealing the drain line met the requirements of Oconee Technical Specification 3.6.4.b.3. The freeze plug was also leak tested at 60 psi to verify its capability to maintain containment integrity in the event of an ES actuation. In addition, a blind flange was used to isolate the valve opening while repairs were made. Containment integrity was not affected by this incident and it is, therefore, concluded that the health and safety of the public were not affected.

Corrective Action:

Valve 2LWD-1 has been repaired and its operability verified. To assure that a thorough electrical inspection of diaphragm valves is properly conducted prior to return to service, the procedure for repair and replacement of diaphragm valves will be revised by December 1, 1976. Also, an investigation of continuing problems encountered with Grinnell-Saunders diaphragm valves with Limitorque operators will be conducted prior to January 1, 1977.