

DUKE POWER COMPANY

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POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N.C. 28242

WILLIAM O. PARKER, JR.  
Vice President  
Steam Production

81-021-022

June 5, 1981

TELEPHONE: AREA 704  
373-4083

Mr. James P. O'Reilly, Director  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Re: Oconee Nuclear Station  
Docket No. 50-287



Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-287/81-09. This report is submitted pursuant to Oconee Nuclear Station Technical Specification 6.6.2.1.b(2), which concerns operation in a degraded mode permitted by a limiting condition for operation, and describes an incident which is considered to be of no significance with respect to its effect on the health and safety of the public.

Very truly yours,

*William O. Parker, Jr.*  
William O. Parker, Jr. *By JLJ/djs*

JLJ/djs  
Attachment

cc: Director  
Office of Management & Program Analysis  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Mr. Bill Lavallee  
Nuclear Safety Analysis Center  
P. O. Box 10412  
Palo Alto, California 94303

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DUKE POWER COMPANY  
Oconee Unit 3

Report Number: RO-287/81-09

Report Date: June 5, 1981

Occurrence Date: May 7, 1981

Facility: Oconee Unit 3, Seneca, South Carolina

Identification of Occurrence: Loss of Containment Integrity Resulting In Unit Shutdown

Conditions Prior to Occurrence: 100% Full Power

Description of Occurrence: At 0832 hours on May 7, 1981, containment isolation valve 3CS-6 was discovered, during a control room tour, to be in the intermediate position. An attempt was made to close the valve, however the valve would not close. A review of computer printouts indicated the valve opened at 0253 hours on May 7, 1981. Since 3CS-5, the redundant isolation valve, was already inoperable, the failure of 3CS-6 resulted in loss of containment integrity. Reactor shutdown commenced. The unit was shutdown within the time permitted by Technical Specification 3.6.3. During the shutdown 3CS-5 was repaired. However, when craft personnel attempted to stroke 3CS-6, the valve operated correctly. An investigation as to the cause of 3CS-6 failure was unable to ascertain the reason for 3CS-6 failing to the intermediate position at 0253 on May 7, 1981. Since 3CS-5 had been repaired and 3CS-6 was determined to be functionally operable the unit was restarted and operated until 1445 hours on May 19, 1981 when 3CS-6 was again found to be open. A review of computer printouts revealed the valve opened at 1105 hours on May 19, 1981. Further investigation revealed there was leakage through 3CS-5 which resulted in loss of containment integrity. Reactor shutdown was again commenced and the unit was shutdown within the time permitted by Technical Specification 3.6.3. Both of these events constitute operation in a degraded mode permitted by Technical Specification 3.6.3 and are thus reportable pursuant to Technical Specification 6.6.2.1 b(2).

Apparent Cause of Occurrence: The apparent cause of the failure of 3CS-6 which occurred at 0253 hours on May 7, 1981 was not determined at that time. However, following the failure which occurred on May 19, 1981, it was determined the cause was two fold. First, valves 3CF-22 and 3CF-23 (core flood tank manual drain valves) were leaking past the seat. These valves drain to the quench tank drain line which is isolated by 3CS-5 and 3CS-6. Second, valve 3CS-124 which is a relief valve upstream of 3CS-5 and 3CS-6 was "gagged" closed. The combination of these two occurrences resulted in pressurization of the quench tank drain line to approximately 450 psig. Valve 3CS-6 is pneumatically operated and requires air pressure to open but closes on spring pressure. Approximately 175 psig system pressure is required to overcome the spring within the operator. An extensive document search was unable to determine why or when 3CS-124 was "gagged", however it is believed it was gagged during construction and/or original system hydro testing.

Analysis of Occurrence: Both valves 3CS-5 and 3CS-6 are containment isolation valves whose safety function is to isolate against a 59 psig post loca containment atmosphere. Relief valve 3CS-124 is designed to prevent overpressurization of the quench tank drain line by higher pressure sources which drain into it. The simultaneous thru leakage of valves 3CF-22 and 3CF-23 combined with the "gagging" of 3CS-124 resulted in pressures which forced flow thru 3CS-5 and forced 3CS-6 to open. However, had a loca occurred and the core flood tanks discharged, the pressure would have reduced and, 3CS-5 would have sealed against the post loca containment pressure of 59 psig and 3CS-6 would have closed also sealing against the post loca atmospheric pressure. Additionally on both events described in this report the unit was shutdown within the time frame specified by the Technical Specifications. Thus, this incident is considered to be of no significance with respect to safe operation, and the health and safety of the public were not affected.

Corrective Action: For the event of May 7, 1981 valve 3CS-5 was repaired and tested and valve 3CS-6 was determined to be functionally operable. For the event of May 19, 1981 the following actions were taken:

1. A modification was performed to temporarily remove a section of the core flood tank drain lines and pipe caps were installed on both open ends of the piping.
2. 3CS-124 was "ungagged", removed from the line, tested, reset and reinstalled.
3. An inspection and evaluation of the section of piping which was overpressurized determined that the piping and valves were still functional.
4. The identical relief valves on Units 1 and 2 ( 1CS-124, and 2CS-124 ) will be inspected at the next opportunity.