

DUKE POWER COMPANY

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NUCLEAR PRODUCTION

April 15, 1983

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NRC REGION II  
ATTN: JCP

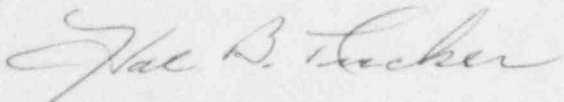
Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30303

Re: Oconee Nuclear Station  
Docket No. 50-287

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-287/83-04. This report is submitted pursuant to Oconee Nuclear Station Technical Specification 6.6.2.1.a(2) which concerns operation subject to a limiting condition for operation which was less conservative than the least conservative aspect of the limiting condition for operation established in the Technical Specifications, 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. My letters of March 30, 1983 and April 15, 1983 addressed the delay in preparation of this report.

Very truly yours,



Hal B. Tucker

JCP/php  
Attachment

cc: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

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Suite 1500  
1100 Circle 75 Parkway  
Atlanta, Georgia 30339

Mr. J. C. Bryant  
NRC Resident Inspector  
Oconee Nuclear Station

Mr. E. L. Conner, Jr.  
Office of Nuclear Reactor Regulation  
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Washington, D. C. 20555

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Duke Power Company  
Oconee Nuclear Station

Report Number: RO-287/83-04

Report Date: April 15, 1983

Occurrence Date: March 17, 1983

Facility: Oconee Unit 3, Seneca, South Carolina

Identification of Occurrence: Containment integrity technically violated due to open valve on Emergency Hatch

Conditions Prior to Occurrence: 100% FP

Description of Occurrence: On March 17, 1983 at 0200, while preparing to perform the quarterly Reactor Building (RB) Emergency Lock Leak Rate Test, it was discovered that air was leaking from the Unit 3 RB Emergency Access Air Lock (EAAL) Hatch pressurization connection valve. The valve does not connect into the Reactor Building but into the EAAL (see Attachment 1). The valve is classified as a containment isolation valve and was found to be open. The open valve was considered to be a degradation of containment integrity and violated Technical Specification 3.6.1. This specification requires all containment isolation valves to be operable, or if not operable, then to be restored to operable status, or isolated, within four hours. The pressurization valve is a 3/4 inch globe valve connected to a pressure line of 3/4 inch schedule 80 pipe that has an inside diameter of .742 inch. The pipe vents out into a concrete blockhouse enclosure, which surrounds the air lock for security purposes and is accessed using an outside locked security door. This area is a vital area, not normally occupied, other than to do the quarterly test on the Emergency Hatch. The pressurization valve is a normally closed valve and is only opened to perform the quarterly Leak Test on the hatch. This test was last done on December 17, 1982, and it was known that the valve was not open prior to testing.

Apparent Cause of Occurrence: The basic cause of this occurrence was personnel error. In July 1981, a modification added the subject valve on the 3/4 inch line extending from the Emergency Air Lock outside end. In the process of modification review, one step is to check for necessary procedure changes. Due to improper and inadequate review attributed to personnel errors, no changes to any procedures were made. As a result, the procedure for the Leak Rate Test on the EAAL did not include the valve. The procedure only stated to "pressurize the hatch volume", but to do this the pressurization valve must be opened. It did not refer to opening the valve for pressurization nor closing it upon test completion. It was therefore possible to correctly follow the procedures and not close the valve in question.

Analysis of Occurrence: The EAAL pressurization line is not directly connected to the RB atmosphere. However, leakage through the pressure equalization line on the inner door could have been released through the open EAAL pressurization line while the RB is at low pressure. The EAAL pressure equalization line has a check valve which closes with containment pressure, preventing flow into the EAAL. During accident conditions involving appreciable containment pressure, minimal

leakage would have occurred through the open pressurization valve.

Assuming the pressurization valve had been open since the last quarterly leak test on December 17, 1982, a conservative analysis was made to determine the maximum possible release through the leakage path was calculated to be 0.007 Curie (see Attachment 2). This was found by calculating the rate of leakage by evacuating the hatch to 11 inch mercury vacuum and monitoring the time required to equalize with atmospheric pressure. Using this rate with the known RB activity produced the calculated total activity released. Had a person been standing at the site boundary, directly downwind from the release point for the duration of the release, the maximum dose received would have been 0.0004 mRem, well within the limits of 10 CFR 20.

The leakage rate through the open valve was calculated as 4.29 lbm/hr at 60 psig. When combined with the most recent leak rate data on all other RB penetrations, the total containment leakage rate becomes 6.3903 lbm/hr. This is only 23.9% of the total leakage, 26.7 lbm/hr, allowed by Technical Specification 4.4.1.2.3. Therefore, had a maximum hypothetical accident occurred, the limits of 10 CFR 100 would not have been exceeded. The health and safety of the public were never endangered by this incident.

Corrective Action: Upon discovery, the pressurization valve was closed. The RB Emergency Lock Leak Rate Test was successfully completed on March 17, 1983. Units' 1 and 2 pressurization valves were verified closed. Revisions have been made to the procedures for the Leak Rate Test and the O-ring Test for Emergency and Personnel Hatch. These changes require independent verification that the pressurization valve is closed upon test completion. Personnel involved have been counseled about their errors. The appropriate Station Directive will be revised to ensure all completed Nuclear Station Modifications are reviewed by all sections. A Task Force has been organized to review containment integrity recommendations concerning procedures and practices to ensure the intent of the containment integrity specification is met.