

# DUKE POWER COMPANY

STEAM PRODUCTION DEPT.

GENERAL OFFICES

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August 27, 1982

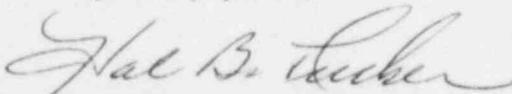
Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Re: McGuire Nuclear Station Unit 1  
Docket No. 50-369

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-369/82-61. This report concerns T.S.3.6.1.3, "Each containment air lock shall be operable...". This incident was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,



Hal B. Tucker, Vice President  
Nuclear Production  
PBN/jfw  
Attachment

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

Records Center  
Institute of Nuclear Power Operations  
1820 Water Place  
Atlanta, Georgia 30339

Mr. P. R. Bemis  
Senior Resident Inspector-NRC  
McGuire Nuclear Station

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DUKE POWER COMPANY  
McGUIRE NUCLEAR STATION  
REPORTABLE OCCURRENCE REPORT NO. 82-61

REPORT DATE: August 27, 1982

FACILITY: McGuire Unit 1, Cornelius, NC

IDENTIFICATION: Failure of the Small Seal on the Lower Personnel Airlock (PAL) Reactor Building Door and Failure of the Large Seal of the Lower PAL Auxiliary Building Door

DESCRIPTION: When two operators attempted to exit lower containment through the lower PAL, the door on the reactor building side of the airlock would not close. The hydraulics which move the door failed due to a disconnected section of tubing. During the tubing repair blisters, which prevented the door from closing properly, were discovered on the door seals. A work request was generated to replace the seals.

The lower PAL was declared inoperable on July 28, 1982 pursuant to Technical Specification 3.6.1.3. At the time of the occurrence, Unit One was in Mode 3, Hot Standby.

A hydraulic fitting on the PAL door opening mechanism and the small seal on the reactor building door were found to be failed. Therefore, this incident is due to Component Failure/Malfunction.

As a result of the testing required for the newly replaced seal, the surveillance test for all the seals on the lower PAL was performed. During this surveillance test, the large seal on the auxiliary building door of the lower PAL failed its integrity test. The airlock was again declared inoperable on July 29 pursuant to Technical Specification 3.6.1.3. At this time, Unit One was in Mode 1 at 50% power.

This incident is also due to Component Failure/Malfunction, because the seal leakage exceeded its maximum allowable limit.

EVALUATION: There have been numerous seal failures on the PAL's at McGuire (see Reportable Occurrence Reports 369/81-176, 81-190, and 82-05). It was determined that the most recent failures were due to the seal inflation stem being overtightened into an oversized hole in the door frame and damaging the seal. This caused blisters to form on the seal as the result of ply separation within the seal. When this determination was made, a procedure change was made to the installation procedure to only hand-tighten the stem nut until a modification to the stem hole could be made. During the March outage, the modification was made, and all the seals which were not installed per the changed procedure were replaced with new seals.

One of the seals which was not replaced during the outage was the small seal on the reactor building side of the lower PAL. This seal was replaced per the changed procedure after a seal failed on the door on December 3, 1981 (see RO-369/81-190). This same seal failed on July 28, 1982 due to blisters which were the cause of previous failures. A visual inspection indicated that this seal also had its stem overtightened. However, the stem should not have been overtightened since it was installed per the changed procedure then reinstalled after the modification was made. Inspection also indicates that the wrong tool was used on the stem to hold it in place when the air supply was connected to the stem. It is suspected that the stem may have inadvertently been overtightened during the installation of the air supply.

The seal which failed was a Sealmaster Corporation Specification Number 10776 2 30 81 S/N 105 JY. The manufacturer of the airlocks, W. J. Wooley Company, prefers improved Pressrey seals; therefore, the Sealmaster seals are going to be replaced with Pressrey seals.

In this incident, as in RO-369/81-190, the seal failure was discovered as the result of another problem on the door. However, it is believed that the seal failures contributed to the other problems in each case. The hydraulic tubing came loose from an Imperial Eastman high seal 1/2 inch fitting.

The large seal on the auxiliary building door of the PAL failed its leakage test, and it was one of the new seals installed after the modification. It was allowing air to leak to the area between the two seals on the door. This seal had no deformities, and the source of the leak could not be found. The seal was replaced with a new Pressrey seal and successfully retested. This failed seal was leak tested when it was initially installed; therefore, it developed its leak during its service. The door seals are leak tested periodically, every 6 months, after the initial test to discover such failures. The seals function to maintain containment integrity and leak rate. The leaking seal was technically operable under normal conditions because a constant air supply was available to keep the seal inflated. Even if instrument air was lost, the seal would have remained inflated for a time because each seal has a reserve air storage tank which will provide several cycles of the doors.

SAFETY ANALYSIS: The loss of one of the airlock doors reduces the means of isolating the containment vessel from atmosphere, but the ability to maintain integrity was never lost because the redundant operable door was locked closed. Although the auxiliary building door seal on the lower PAL failed its leak rate test, the overall airlock leak rate test was successfully completed the day before. A constant air supply was available to keep the seal inflated and perform its function.

The health and safety of the public were not affected by these events.

CORRECTIVE ACTION: The hydraulic tubing which came loose was reinstalled with a new fitting, and hydraulic fluid was added to replace the lost fluid. Both of the defective seals were replaced with new Pressrey seals. They were then retested per procedure, "Lower Containment Airlock Leak Rate Test", and the airlocks tested per the "Airlock Operability Test". While one door was inoperable the other door was locked closed in compliance with the Technical Specification action statements.