

DUKE POWER COMPANY

POWER BUILDING

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

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WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE AREA 704
373-4083

October 12, 1981

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



Re: McGuire Nuclear Station
Unit 2
Docket No. 50-370

Dear Mr. O'Reilly:

Pursuant to 10 CFR 50.55e, please find attached Significant Deficiency Report SD 370/81-07 concerning rejectable indications in personnel air locks.

Very truly yours,

A handwritten signature in cursive script, appearing to read "William O. Parker, Jr.".

William O. Parker, Jr.

GAC/php
Attachment

cc: Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Ms. M. J. Graham
NRC Resident Inspector
McGuire Nuclear Station

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1. INTRODUCTION

This report contains information pursuant to the requirements of 10 CFR 30.55(e) necessary to document ASME Code deviations discovered during retrofitting and minor alteration work on the McGuire Nuclear Station, Unit 2 personnel locks. The personnel locks, therefore, not being in full Code compliance, did not meet the specified requirements of the McGuire FSAR, Section 3.8.2.1(2).

The deviations were first discovered on March 31, 1981 and April 3, 1981 and were reported to Mr. Al Ignatonis of the NRC, Region II, on September 11, 1981 by Mr. W. O. Henry and Mr. J. H. Lanier. The time lag in reporting this item is directly related to the number of outstanding Nonconforming Item Reports for the McGuire, Catawba, and Cherokee projects. Duke Power Company had committed to the NRC on February 26, 1981 to institute procedures relative to reportability with emphasis on a review of all NCIs generated on the Catawba project. Our procedures were implemented and formal reportability training completed by April 27, 1981. However, the NCIs concerning this item (see Section 3.0) were received prior to full implementation. Subsequently, all outstanding McGuire NCIs have been evaluated in accordance with established procedures.

2. BACKGROUND INFORMATION

The four (4) personnel locks (two per unit) for the McGuire Nuclear Station were designed by the W. J. Woolley Company of River Forest, Illinois. This company also supervised the fabrication of the locks by their subcontractor, Progressive Fabricators, Inc. of St. Louis Missouri.

The general arrangement of the personnel locks is the same for all four locks. The locks are Section III, Class B vessels constructed and stamped in accordance with the 1968 ASME Code, including Addenda through the Summer of 1970.

These air locks utilize inflatable door seals and, in August, 1979, deficiencies were discovered in a number of the seal bolt holes. These deficiencies were reported to the NRC in References 6.1 and 6.2.

Subsequently, all McGuire personnel lock doors were shipped to Irwin Steel Fabricators (now Woolley Manufacturing Division) in Canton, Ohio, where in December, 1979, repairs to the seal bolt holes were made under the supervision of the W. J. Woolley Company. These repairs were done in accordance with W. J. Woolley Bolt Hole and Inspection Procedures and W. J. Woolley Company Drawings.

The Unit 2 McGuire personnel locks are currently undergoing minor retrofitting and alteration work by Duke Power Company Construction personnel. This work has been ongoing from the latter part of 1980 through 1981 and primarily involves upgrading the air lock seal air supply system to be ASME Class 2, installing reserve air supply tanks for each seal and other minor upgrades.

3. DESCRIPTION OF DEFICIENCY

In March and April of 1981, during nondestructive examination of minor alteration welds for mounting the reserve air supply tanks on the McGuire Unit 2 upper air locks, Code rejectable indications were found in adjacent base metal of the inner and outer air lock doors. These were detailed in Duke Power Company Nonconforming Item Reports S/N 13075 and S/N 13084. These indications were determined to be reportable as detailed in Section 1.0 of this report. Mr. V. A. Bicicchi, President of the W. J. Wooley Company was also notified of this by telephone.

The areas in question were ground to determine the depth and extent of indications. With grinding, the indications enlarged to one-inch diameter circles located directly behind seal bolt hole locations. This indicates that the deficiencies were in seal bolt hole plug welds. Further investigation of Quality Assurance records confirmed that the seal bolt holes in these locations had been repaired and plugged at the Irwin Steel facility.

The seal bolt hole repair work done at Irwin Steel in the fall of 1979 received a high degree of Quality Assurance inspection. Inspectors from Irwin Steel, W. J. Wooley Company and Duke Power Company were involved, in addition to the Authorized Nuclear Inspector. The inspection and repair procedure called for PT inspection following welding and grinding for each plug location. Quality Assurance records indicate that all plugs passed this inspection. Thus it can be stated with a high degree of assurance that the discovered deficiencies were not present when the air lock doors were returned to the McGuire Station.

The alteration and retrofitting work being done on the doors required flame cutting, welding and grinding operations immediately adjacent to the discovered deficiencies. Thus it is most likely that these operations opened cracks in the one-eighth inch surface plug welds. These cracks were then located, documented and reported by standard inspection procedures in effect at the site.

4. SAFETY IMPLICATIONS

The double seals of the air lock doors are tested by pressurizing the annulus area between the seals. The test is carried out before plant operation and after each opening, except when the air lock is being used for multiple entries, when testing is done at least once every 72 hours. Any large leak around the seals or through the repair plug welds would be detected. Satisfactory leak-rate test results indicate the air lock will preserve containment integrity.

If leakage is detected in excess of that permitted by the plant Technical Specifications, standard procedures are in effect to locate and repair the source of the leakage within specified time limits or to bring the plant to cold shutdown. Thus, standard plant operating procedures would have precluded excessive bypass leakage that could have caused a safety hazard.

If the seal bolt plug weld indications had gone undetected during either PT examination or leak-rate testing, the worst case safety consequence would have been the reduction from a double inflatable seal boundary to a single

boundary. This confirms previously reported conclusions. Thus, in our opinion, public safety would not have been jeopardized.

5. CORRECTIVE ACTION

The rejectable indications will be removed and weld repaired. All repairs will be done in accordance with the Owner's approved procedures and ASME Code requirements. The repaired areas will be fully examined and inspected by the Owner and reviewed by the Authorized Code Inspector. This work will be completed by December 31, 1981.

Following inspection and repair work, each air lock will be pressure tested and leak-rate tested to the requirements of the ASME Code and the Station Technical Specifications.

6. REFERENCES

- 6.1 Final Report on Improper Drilling of Holes for Mounting Personnel Air Lock Door Seals, Report No. SD 369-370/79-06, McGuire Nuclear Station, transmitted to the NRC on August 31, 1979.
- 6.2 Supplement 1, Report No. SD 369-270/79-06, transmitted to the NRC on November 30, 1979.