DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

February 22, 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 2
Docket No. 50-370

Dear Mr. O'Reilly:

Pursuant to 10 CFR 50.55e, please find attached Significant Deficiency Report SD 370/81-12 (final) concerning butt welds that may not meet ASME Code criteria for being "flush". An interim report was submitted by my letter dated January 21, 1982. This was also reported for Unit 1 via LER 369/81-192.

Very truly yours,

William O. Parker, Jr.

PBN/jfw
Attachment

cc: (w/attachment)
Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

Mr. Ralph Birkel
Division of Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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DUKE POWER COMPANY
McGUIRE NUCLEAR STATION

SIGNIFICANT DEFICIENCY

REPORT NO.: SD 370/81-12 (final)

REPORT DATE: February 22, 1982

FACILITY: McGuire Nuclear Station, Unit 2

IDENTIFICATION OF DEFICIENCY:

Welds identified as "flush" may not meet the stringent requirements of the ASME Code criteria as defined in Table NB-3683.2-1, footnote (2)(a). Specifically, the requirement that the finished contour of the weld shall not exceed a 7° slope had not been satisfied at the weld I.D.

INITIAL REPORT:

The initial report was made to Mr. A. Ignatonis of Region II, USNRC, on December 22, 1981 by Mr. W. O. Henry and Mr. J. N. Underwood, both of Duke Power Company, 422 S. Church Street, Charlotte, NC 28242.

DESCRIPTION OF DEFICIENCY:

The initial deficiency was first identified by a Catawba Nuclear Station NCI which reported that certain butt welds did not meet the ASME Code criteria for being flush as defined in Table NB-3683.2-1. This NCI specifically pointed out that the I.D. of the weld did not meet the 7° contour as stipulated in footnote (2)(a) of that table. Furthermore, a review determined that the Catawba Construction procedure for flush welds may not provide adequate assurance that the weld contour on the I.D. is $< 7°$. A review of the corresponding McGuire Nuclear Station procedure indicates that similar conditions exist for McGuire flush welds.

ANALYSIS OF SAFETY IMPLICATIONS:

The stress analysis calculations generally employ the procedures outlined in NB-3600 to ensure piping system integrity for all loading conditions. If the welds in question had been found not to satisfy the ASME Code requirements associated with flush welds, certain stress indices used in the piping analysis would be incorrect and of a lower value than those associated with the as-welded condition. However, Duke reviewed a number of welds which were made using existing flush welding procedures to determine the "worst case" I.D. profile and analyzed them to determine the stress indices using stringent procedures outlined in the ASME Code. This analysis verified that Duke flush weld indices are equivalent to the ASME flush weld indices. Therefore, the existing piping analysis calculations remain valid and the lower indices used are correct.

CORRECTIVE ACTION:

A construction procedure will be generated on or before April 1, 1982 to define a Duke Power flush weld as those with the properites of the "worst case" weld used in the previously described analysis. All future flush welds will be compared to these properties.