DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

May 4, 1988

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

Subject: McGuire Nuclear Station, Unit 1
Docket No. 50-369
Requests for Relief from
ASME Code Section XI Requirements

Gentlemen:

Pursuant to 10CFR 50.55a(g)(5)(iii), Duke transmitted a relief request dated October 26, 1987 and January 19, 1988 to the NRC. Subsequently during a teleconference with NRC Region II Inspector B.R. Crowley, additional information was requested pertaining to the aforementioned relief requests.

Accordingly, find attached the requested information. Also, Duke understands that no additional application fee is due since this submittal is a follow-up of additional information.

Should there be any questions concerning this letter, please contact Steve LeRoy at (704)373-6233.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

SEL/11/sbn

Attachment

xc: Dr. J. Nelson Grace
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta St., NW, Suite 2900
Atlanta, GA 30323

Mr. W.T. Orders
NRC Resident Inspector
McGuire Nuclear Station

B.R. Crowley
U.S. Nuclear Regulatory Commission
101 Marietta St., NW, Suite 2900
Atlanta, GA 30323

Mr. Darl Hood
U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

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Duke Power Company
McGuire Nuclear Station

Reply to Request for Additional Information

Information Regarding Attachment No. 1

The containment vessel is a 1968 ASME Code Class B vessel. The Winter 1970 Addenda of the 1968 Edition shows on page 12 the correlation of code classes between the 1968 code and 1971 and later codes. The 1968 Code Class B is defined equivalent to Code Class MC of later edition codes. Since the water sample penetration (4" pipe) with 1 1/2" pipe branch is a containment pressure boundary, the ASME Section Code Class should be changed to MC.

Attachment of the 1 1/2" pipe branch to the existing 4" pipe by welding is an "addition of a component" which is governed by IWA-7000. Thus, the relief request should include IWA-7000.

Basis for Requesting Relief:

After re-installing the 1/2" plug, an acceptable weld could not be obtained due to groundwater leakage through the plug-coupling connection. It is physically impossible to perform a hydrostatic test on the 1 1/2" pipe and cap (covering the 1/2" plug) because isolation of the volume within the pipe is not possible due to the leakage occurring around the 1/2" coupling and plug.

Alternate Examination:

The weld examination is satisfactory for the following reasons:

a) The installation of the 1 1/2" branch pipe consisted of a full penetration Category D weld to the 4" penetration and a Category C fillet closure weld to the 1 1/2" pipe and cap. These welds are in accordance with Section III of the ASME Code (reference paragraphs NE-3351.3, NE-3356, NE-3367, NE-3351.4, NE-3352.4b).

b) The weld examination performed on these welds consisted of a 100% dye penetrant test for both the root pass and final weld. This exceeds current ASME Code examination requirements for these categories of welds (reference paragraphs NE-5230, NE-5242).

c) The above code requirements are permitted by IWA-7121, IWA-7210, and IWA-4120 of Section XI of the ASME Code.

The weld examination performed ensures an acceptable level of instructural integrity because:

a) The welds in question have not exhibited any ground water leakage from the bypass leakage occurring at the 1/2" coupling and plug.

b) Utilizing a specifically fabricated pneumatic testing apparatus, the welds in question successfully passed a pneumatic leak test.

c) The welds made for the 1 1/2" pipe and cap are pressure boundary welds but are not structural load carrying welds except to prevent leakage from the

containment. In the event of pressurization of the Incore Instrumentation Room, the pressure load to the 1 1/2" pipe and cap will be external. Thus, the welds in question will be subjected to stresses that are compressive rather than tensile.

Information Regarding Attachments Nos. 2, 3, 4, and 5

Basis for Requesting Relief:

The valves used for isolation of the Nuclear Service Water (RN) system are a butterfly type design and range in size from 18 inches up to 36 inches. Historically, these valves have not held design hydro pressure without significant leakage. These valves are welded into the system and cannot be easily removed without causing the same hydro problems that presently exist. The use of flanges in the RN system is limited, thereby limiting the use of blanks or blank flanges to enhance hydro capabilities.

Additional hydro pump capacity is not available nor is it considered usable in this situation because hydro pump leakage past the butterfly valve seats could potentially over pressurize other vital equipment such as heat exchangers and critical instrumentation. System pressures range from 135 psig to 35 psig. The required design changes to install isolation valves and/or the installation of blanks into the system to achieve hydro capability would place an additional burden of time, manpower, planning, and execution expense on Duke, without a commensurate increase in operational quality of the system. The RN system is a low temperature, low pressure system. Hydro pressure on the system would be 110% of design pressure or approximately 150 psig. Duke feels that the additional MT or PT examination requirement compensates for the difference in hydro pressure and inservice inspection pressure.

Alternate Examination:

The section of the RN system in question operates at a low design pressure and temperature of 135 psig and 95°F respectively. Duke Power considers the alternate and additional examinations more than adequate to ensure safe and consistent operational reliability of the system. The basis for the alternate testing is that the examinations will detect any defects that would have otherwise been exposed by the pressure differential between the operating pressure and hydrostatic testing pressure. Thus, the probability of detecting any additional weld defects by hydrostatic testing is low to nil.