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DUKE POWER

September 23, 1994

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

Subject: McGuire Nuclear Station
McGuire Nuclear Station, Unit 1
Docket No. 50-369
ASME B&PV Code, Section XI, 1986 Edition
Hydrostatic Testing
Relief Request 94-009
Supplement regarding 1NI-159

Reference: Duke Power 9/21/1994 Letter on same subject

Dear Sir:

As indicated above, Duke Power had submitted a relief request dated 9/21/94 as regards the subject valve 1NI-159. Attached is a supplemented relief request regarding 1NI-159.

The attached supplement changes the 'inservice test' referenced in page 2, item IV-2 to a 'functional test'. The functional test is preferred since less NC and NI system valve alignment changes are required and thus less radiation exposure to plant Operations personnel. The same level of safety as regards the integrity of the subject welds being tested is afforded by the functional testing planned at normal system pressure and temperature.

In support of entry into 1BOC10/Mode 4, NRC staff approval of this matter is requested by October 1, 1994. Furthermore, we request that the subject request approval be forwarded via FAX number (704) 875-4165, attention: J. E. Snyder Manager, Regulatory Compliance, when review and approval is complete.

Should there be any questions regarding this matter, please contact J. E. Snyder at (704) 875-4447.

Very truly yours,

T. C. McMeekin

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xc: Mr. S.D. Ebneter
Administrator, Region II
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Mr. Victor Nerses
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Mr. George Maxwell
Senior NRC Resident Inspector, McGuire
McGuire Nuclear Station

bxc: with attachments

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File: 801.01
ELL (EC050)

DUKE POWER COMPANY
Request for Relief From
Inservice Inspection Requirement

Supplement: 9/23/94
Revision 1

Station: McGuire Nuclear Station

Unit: 1

Reference Code: ASME B&PV Code Section XI, 1986 Edition

I. Component for which exemption is requested:

a. Names and Identification Numbers:

1) Weld number NI1F2023 located on the outlet of check valve 1NI159 (Safety Injection Pump 1B to Hot Leg Loop 4). This socket weld joins the valve discharge to 2 inch piping.
2) Weld number NI1FW35-1 is the next 2 inch socket weld downstream of item 1 above. This weld joins the 2 inch pipe to a full coupling.
3) Weld number NI1FW35-2 is the next 2 inch socket weld downstream of item 2 above. This weld joins the full coupling to the 2 inch pipe.

b. Function:

The function of 1NI159 (a 2 NPS check valve) is to allow flow from Safety Injection (NI) Pump 1B to the Reactor Coolant Loop 4 (Hot Leg). Just prior to flow entering the Reactor Coolant Loop, two check valves are positioned in series. Valve 1NI159 is the second check valve from the Reactor Coolant Loop. No isolation valves exist between valve 1NI159 and the Reactor Coolant Loop.

c. ASME Section XI Code Class:

None

d. Construction Code and Class (If Applicable):

ASME B&PV Code Section III, Class 1

e. Valve Category(If Applicable):

Not Applicable

f. Attachments (list) or References:

II. Reference Code Requirement from which relief is desired:

ASME B&PV Code Section XI, 1986 Edition, Articles IWA-4400 (Pressure Test), IWA-5214 (Repairs and Replacements) and IWB-5222 (System Hydrostatic Test).

III. Basis for Requesting Relief:

Valve 1NI159 was suspected of leakage past the seat prior to the End of Cycle 9 (1EOC9) Outage. As with other check valve seat leaks, the maintenance plan prior to the outage was to repair the seating surfaces (not replace the valve). At no point during the planning of these maintenance activities could station personnel credibly determined/predicted that a Request for Relief from hydrostatic testing would be required.

Performing hydrostatic tests on the socket welds on the downstream sides of valve 1NI159 is impractical. Hydrostatic test pressures are determined per Table IWB–5222–1 (TEST PRESSURE). Test Pressure (at the appropriate Test Temperature) is achieved using the Reactor Coolant Pumps. There is a check valve (1NI160) between valve 1NI159 and the Reactor Coolant Loop which prevents flow and pressure from exiting the Reactor Coolant Loop. Therefore the discharge side of valve 1NI159 is not affected by the reactor coolant fluid at Test Pressure and Test Temperature.

An alternative method of obtaining the Test Pressure on the discharge side of valve 1NI159 was considered. While the Reactor Coolant Loop would be at Test Pressure and Test Temperature, connect a hydrostatic test pump to a high point vent which could inject fluid at the Test Pressure between valve 1NI159 and 1NI160. The flaw with this alternative test method would be that the fluid for the hydrostatic test would not be at the Test Temperature (per Table IWB–5222–1).

IV. Alternate Examination:

In lieu of the hydrostatic test the following alternative inspections will be performed in addition to ASME Code required final liquid penetrant test (PT) and ASME Code required final visual inspection (VT).

1. The root pass of each socket weld was subjected to a liquid penetrant test (PT).

2. Each socket weld will be subject to a functional test at normal operating pressure and temperature.

It is Duke's position that the Alternative Examinations are comparable to hydrostatic testing for finding defects in 2 inch socket welds and that the level of quality and safety of the welds will be in no way reduced.

Historically McGuire Nuclear Station has successfully utilized alternative NDE in lieu of hydrostatic testing on numerous occasions and have not experienced any weld failures related to those events.

V. Implementation Schedule:

The alternative examinations has been or will be applied during 1EOC9 during the month of September 1994. This Request for Relief applies only to this particular replacement of valve 1NI159. This Request for Relief will not be applied for any future repairs or replacements associated with this valve.

The NRC is asked to approve or disapprove this relief request by October 1, 1994. This date is just prior to McGuire Unit 1 entering Mode 4 at the end of outage 1EOC9.

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