Duke Energy Corporation
526 South Church Street
P.O. Box 1006
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August 19, 2003

U. S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Duke Energy Corporation
Oconee Unit 3
Docket No. 50-287
McGuire Nuclear Station, Unit 2
Docket No. 50-370
Catawba Nuclear Station, Units 1 & 2
Docket Nos. 50-413, 50-414

Relief Request for Alternative to ASME Section XI
Relief Request 03-GO-012

Pursuant to 10 CFR 50.55a (a) (3) (i), Duke Energy Corporation (Duke) requests the use of an alternative to the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition with no addenda, Table IWB-2500-1, Examination Category B-D, Item No. B3.100, Nozzle Inner Radius Sections. Duke requests the use of the alternative for the Oconee Unit 3 third 10-year Interval Examination and the McGuire Unit 2 and Catawba Units 1 and 2 second 10-year Interval Examination.

Specifically, Duke requests relief to perform a remote VT-1 examination in lieu of the volumetric examination required in Table IWB-2500-1 Examination Category B-D, Full Penetration Welds of Nozzles In Vessels, Item No. B3.100, Nozzle Inner Radius Sections.

A detailed description of the proposed alternative and justification is included as an attachment to this letter. Duke is requesting approval of this request by August 19, 2004, to support the Oconee Unit 3 outage in the fall of 2004. Questions regarding this request may be directed to R. K. Nader at 704-382-0979.

Very truly yours,

W. R. McCollum, Jr.
Senior Vice President, Nuclear Support

A047

Attachment

xc w/att: L. A. Reyes, Regional Administrator
U. S. Nuclear Regulatory Commission, Region II
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M. E. Shannon, Senior Resident Inspector (ONS)
E. F. Guthrie, NRC Senior Resident Inspector (CNS)
J. B. Brady, NRC Senior Resident Inspector (MNS)

bxc w/ att: M. T. Cash (EC05O)
C. J. Thomas (MG01RC)
K. L. Crane (MG01RC)
N. T. Simms (MG01RC)
G. D. Gilbert (CN01RC)
K. E. Nicholson (CN01RC)
L. J. Rudy (CN01RC)
L. E. Nicholson (ON03RC)
J. E. Smith (ON03RC)
R. P. Todd (MD02FE)
J. M. Ferguson - Date File (CN01SA)
R. K. Rhyne (EC07J)
J. J. McArdle (EC07J)
T. Wills (WC28H)
R. O. Sharpe (WC28H)
J. O. Barbour (EC07J)
MNS MasterFile MC-801.01 (MG01DM)
CNS MasterFile CN-801.01 (CN04DM)
ONS MasterFile ON-801.01 (ON03DM)
ELL

bxc w/ attach: North Carolina Municipal Power Agency Number 1
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Raleigh, NC 27626

Saluda River Electric Cooperative, Inc.
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Piedmont Municipal Power Agency
121 Village Drive
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T. Richard Puryear
North Carolina Electric Membership Corporation
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DUKE ENERGY CORPORATION
Oconee Nuclear Station Unit 3
McGuire Nuclear Station Unit 2
Catawba Nuclear Station Units 1 & 2

10-YEAR INTERVAL REQUEST FOR RELIEF NO. 03-GO-012

Pursuant to 10CFR50.55a (a) (3) (i), Duke Energy Corporation (Duke) proposes an alternative to the requirements of ASME Section XI, 1989 Edition with no addenda, Table IWB-2500-1, Examination Category B-D, Item No. B3.100, Nozzle Inner Radius Sections.

I. System/Components for Which the Alternative Applies:

Category B-D Full Penetration Welds of Nozzles in Vessels

Item Numbers:

Oconee Unit 3
B03.100.001 3-RPV-WR13
B03.100.002 3-RPV-WR13A
B03.100.003 3-RPV-WR12
B03.100.004 3-RPV-WR12A
B03.100.005 3-RPV-WR12B
B03.100.006 3-RPV-WR12C

McGuire Unit 2
B03.100.001 2RPV-W11
B03.100.002 2RPV-W12
B03.100.003 2RPV-W13
B03.100.004 2RPV-W14
B03.100.005 2RPV-W15
B03.100.006 2RPV-W16
B03.100.007 2RPV-W17
B03.100.008 2RPV-W18

Catawba Unit 1
B03.100.001 1RPV-W11
B03.100.002 1RPV-W12
B03.100.003 1RPV-W13
B03.100.004 1RPV-W14
B03.100.005 1RPV-W15
B03.100.006 1RPV-W16
B03.100.007 1RPV-W17
B03.100.008 1RPV-W18

Catawba Unit 2

B03.100.001	2RPV-105-121A
B03.100.002	2RPV-105-121B
B03.100.003	2RPV-105-121C
B03.100.004	2RPV-105-121D
B03.100.005	2RPV-107-121A
B03.100.006	2RPV-107-121B
B03.100.007	2RPV-107-121C
B03.100.008	2RPV-107-121D

II. **Code Requirement:** ASME Section XI, Table IWB-2500-1 Examination Category B-D, Full Penetration Welds of Nozzles In Vessels, Volumetric Examination, Figure IWB-2500-7(b), Examination Volume M-N-O-P of ASME Section XI, 1989 Edition with no addenda.

III. **Code Requirement for Which the Alternative is Requested:** Relief is requested to perform a remote VT-1 examination in lieu of the volumetric examination required in Table IWB-2500-1 Examination Category B-D, Full Penetration Welds of Nozzles In Vessels, Item No. B3.100, Nozzle Inner Radius Sections.

IV. **Basis for Relief:** Pursuant to 10CFR50.55a (a) (3) (i), Relief is requested to perform a remote VT-1 examination in lieu of the required volumetric examination on the basis that the proposed alternative provides an acceptable level of quality and safety.

V. **Alternative Method for Ultrasonic Examination:**
Duke Energy Corporation proposes to use a remote VT-1 examination of surface M-N as shown in ASME Section XI, Figure IWB-2500-7(b) of the 1989 Edition with no addenda. The remote VT-1 equipment will have sufficient magnification and sensitivity to resolve a 0.001 inch wire in lieu of the sensitivity required for an ultrasonic examination. The examination results will be evaluated in accordance with ASME Section XI, IWB-3140, 1989 Edition with no addenda. Crack-like surface flaws exceeding the acceptance criteria of Table IWB-3512-1 are unacceptable for continued service unless the reactor vessel meets the requirements of IWB-3142.2, IWB-2142.3 or IWB-3142.4. When applying Table IWB-3512-1 criteria, crack depth will be assumed to be equal to one-half of the measured crack length.

VI. **Justification for the Granting of Relief:**

The nozzles in the reactor pressure vessels are made of forged SA-508 ferritic steel with stainless steel cladding.

These nozzles were nondestructively examined during fabrication and subsequently examined inservice twice using the ultrasonic method. There were no examination findings and no flaws were detected in any of the reactor pressure vessel nozzle inner radius sections.

According to a NRC memorandum[1], the NRC staff has indicated that an ultrasonic examination could be replaced by an enhanced VT-1 visual examination for the proposed nozzle inspections. Subsequent to that memorandum, the NRC granted requests similar to this request to Florida Power and Light for Turkey Point Units 3 & 4 (submitted May 6, 2002 and approved August 15, 2002) and Public Service Electric and Gas for Salem Units 1 & 2 (submitted February 11, 2002 and approved March 21, 2002).

Like Florida Power and Light and Public Service Electric and Gas, Duke proposes to use high magnification cameras to give 1-mil resolution capability for the remote VT-1 examination of the accessible portion of the nozzle inner radius section surface area. With this resolution, it is highly likely that Duke would detect and disposition flaws using the allowable flaw length criteria in Table IWB-3512-1 of the ASME Code, Section XI, for the disposition of any linear flaws. Therefore, the proposed alternative provides reasonable assurance of structural integrity.

VII. **Implementation:** Duke Energy will perform the remote VT-1 examination of the reactor pressure vessel nozzle inner radii in conjunction with the Oconee Unit-3 3rd 10 year Interval Examination; the McGuire Unit-2 2nd 10 year Interval Examination; The Catawba Units 1 and 2 2nd 10 year interval Examination.

Sponsored By James J. McGuire III Date 6-3-03

Approved By Elton Alley Date 07/30/03

[1]NRC Memorandum from K.R. Wichman to W.H. Bateman dated May 25, 2000; Subject: The Third Meeting with the Industry to Discuss the Elimination of RPV Inner Radius Inspection (ADAMS Accession No. ML003718630).