



Duke Power  
526 South Church St. EC07H  
Charlotte, NC 28202  
P. O. Box 1006 EC07H  
Charlotte, NC 28201-1006  
(704) 382-2200 OFFICE  
(704) 382-4360 FAX

M. S. Tuckman  
Executive Vice President  
Nuclear Generation

September 6, 2002

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

Subject: Duke Energy Corporation  
Catawba Nuclear Station Units 1 & 2  
Docket Nos. 50 -413, 414  
McGuire Nuclear Station Units 1 & 2  
Docket Nos. 50 -369, 370

30 Day Response to NRC Bulletin 2002-02:  
Reactor Pressure Vessel Head And Vessel Head  
Penetration Nozzle Inspection Programs

Pursuant to 10 CFR 50.54(f), this letter and enclosure provide Duke Energy Corporation's 30 day response to NRC Bulletin 2002-02 for the Catawba and McGuire Nuclear Stations. Responses are provided for Bulletin item 1.A.

Duke Energy Corporation has made the following regulatory commitments in response to this bulletin:

- 1) Catawba and McGuire Nuclear Stations will supplement their Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle inspection programs with non-visual NDE methods.
- 2) Plans will be submitted that more specifically address methods, scope, coverage, frequencies, qualification requirements, and acceptance criteria for future Catawba and McGuire inspections of the Reactor Pressure Vessel Head and Vessel Head Penetration Nozzles within four years of the date of this response.

If you have questions or need additional information, please contact Gregory S. Kent at (704)373-6032.

Very truly yours,

M. S. Tuckman

ENCLOSURE

A096

U.S. NRC  
September 6, 2002  
Page 2

xc: L.A. Reyes  
U.S. Nuclear Regulatory Commission  
Regional Administrator,  
Region II Atlanta Federal Center  
61 Forsyth St., SW, Suite 23T85  
Atlanta, GA 30303

C.P. Patel  
NRC Project Manager (CNS)  
U.S. Nuclear Regulatory Commission  
Mail Stop O-8 H12  
Washington, DC 20555-0001

R.E. Martin  
NRC Project Manager (MNS)  
U.S. Nuclear Regulatory Commission  
Mail Stop O-8 H12  
Washington, DC 20555-0001

S.M. Shaeffer  
Senior Resident Inspector (MNS)

D.J. Roberts  
Senior Resident Inspector (CNS)

U.S. NRC  
September 6, 2002  
Page 3

M. S. Tuckman, affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

M. S. Tuckman  
M. S. Tuckman, Executive Vice President

Subscribed and sworn to me: September 6, 2002  
Date

M. T. Cash  
Notary Public

My Commission Expires: January 22, 2003  
Date

SEAL

MICHAEL T. CASH  
Notary Public  
Lincoln County, North Carolina  
Commission Expires January 22, 2003

U.S. NRC  
September 6, 2002  
Page 4

bcc: L.F. Vaughn - PB05E  
M.T. Cash - EC050  
C.J. Thomas - MG01RC  
G.D. Gilbert - CN01RC  
M.R. Robinson - EC090  
G.S. Kent - EC050  
J.M. Shuping - EC090  
D.E. Whitaker - EC090  
K.L. Crane - MG01RC  
K.E. Nicholson - CN01RC  
Catawba Master File - CN01DM  
McGuire Master File - MG01DM  
Saluda River Electric Corporation  
NC Municipal Power Agency No. 1  
TR.Puryear, NC Electric Membership Corporation - CN03G  
Piedmont Municipal Power Agency  
ELL - EC050

ENCLOSURE I

Catawba and McGuire Nuclear Station  
Response to NRC Bulletin 2002-02

**Requested Information**

1. Within 30 days of the date of this bulletin:

- A. PWR addressees who plan to supplement their inspection programs with non-visual NDE methods are requested to provide a summary discussion of the supplemental inspections to be implemented. The summary discussion should include EDY, methods, scope, coverage, frequencies, qualification requirements, and acceptance criteria.
- B. PWR addressees who do not plan to supplement their inspection programs with non-visual NDE methods are requested to provide a justification for continued reliance on visual examinations as the primary method to detect degradation (i.e., cracking, leakage, or wastage). In your justification, include a discussion that addresses the reliability and effectiveness of the inspections to ensure that all regulatory and technical specification requirements are met during the operating cycle, and that addresses the six concerns identified in the Discussion Section of this bulletin. Also, include in your justification a discussion of your basis for concluding that unacceptable vessel head wastage will not occur between inspection cycles that rely on qualified visual inspections. You should provide all applicable data to support your understanding of the wastage phenomenon and wastage rates.

**Response:**

Catawba and McGuire Nuclear Stations plan to supplement their Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle inspection programs with non-visual NDE methods.

All units at McGuire and Catawba Nuclear Stations are projected to be ranked between 2 and 3 Effective Degradation Years (EDY) for fall 2003 indicating low susceptibility to PWSCC of Alloy 600 Reactor Pressure Vessel Head (RPVH) penetrations. Duke committed to complete bare metal visual inspections of the RPVH in response to NRC Bulletin 2002-01 Item 1.D for McGuire and Catawba.<sup>1</sup> The status of the current inspections is provided in this enclosure. Based upon present industry experience with

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<sup>1</sup> Letter from KS Canady to NRC, Response to NRC Bulletin 2002-01: Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity, Dated April 1, 2002

U.S. NRC  
Enclosure  
September 6, 2002  
Page 2 of 3

Alloy 600, Duke anticipates the requirement of supplemental volumetric inspections in the future. Such inspections are consistent with Duke's Application to Renew the Operating Licenses for McGuire and Catawba.<sup>2</sup>

NRC Bulletin 2002-02 states that it is the first in a multi-step approach to address concerns about the adequacy of inspection requirements and programs for RPVH and vessel head penetration nozzles. Given McGuire's and Catawba's 2 to 3 EDY ranking, time exists to permit further development of these activities such as the Material Reliability Program (MRP) inspection program and revision to the ASME code requirements. Future developments in inspection technique may better define the appropriate supplemental inspections and acceptance criteria.

Within four years of the date of this response, Duke will submit plans that more specifically address methods, scope, coverage, frequencies, qualification requirements, and acceptance criteria for future Catawba and McGuire inspections of the RPVH and vessel head penetration nozzles. These plans will consider any guidance on an acceptable long term inspection program provided by ongoing industry activities.

#### **Current Inspection Status:**

##### **Catawba Unit 1**

Catawba Nuclear Station (CNS) Unit 1 conducted a complete bare metal visual inspection of the RPVH on May 4, 2002. The results of this inspection indicated that the head is free of degradation due to corrosion or wastage resulting from boric acid.

These results were reported as a response to NRC Bulletin 2002-01 item 2.A.

##### **Catawba Unit 2**

Catawba Unit 2 will conduct a complete bare metal visual inspection of the RPVH during the next RFO in March 2003. The Electric Power Research Institute (EPRI) MRP guidance for visual inspections will be used as a reference for this inspection. Any evidence of leakage will be evaluated according to the principles described in Duke's response to NRC Bulletin 2002-01 Items 1.A and 1.B.

##### **McGuire Unit 1**

McGuire Unit 1 will conduct a complete bare metal visual inspection of the RPVH during the September 2002 outage. The EPRI MRP guidance for visual inspection will be used as a reference for this inspection. Any evidence of

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<sup>2</sup> Letter from MS Tuckman to NRC, Application to Renew the Operating Licenses of McGuire Nuclear Station, Units 1 & 2 and Catawba Nuclear Station, Units 1 & 2, dated June 13, 2001.

U.S. NRC  
Enclosure  
September 6, 2002  
Page 3 of 3

leakage will be evaluated according to the principles described in Duke's response to NRC Bulletin 2002-01 Items 1.A and 1.B.

These results were reported as a response to NRC Bulletin 2002-01 item 2.A.

### **McGuire Unit 2**

McGuire Nuclear Station: Unit 2 conducted a complete bare metal visual inspection of the RPVH on March 21, 2002. Video cameras provided the predominant method of inspection. For areas obscured to the camera, inspectors supplemented the inspection with the use of handheld mirrors and lights. The results of this inspection indicated that the head was free of boron deposits and no corrosion or wastage was noted.

These remaining inspections will be conducted using a qualified procedure that is controlled and accomplished using qualified personnel. The inspection team will at a minimum consist of one VT-2 qualified QA inspector and a knowledgeable engineer. The acceptance criteria will be consistent with a VT-2 inspection and the EPRI MRP guidance for visual inspection will be used as a reference. The scope of these inspections will include complete visual coverage of the RPVH. Any masking boron deposits will be removed and the obstructed area will be inspected for wastage.