

January 30, 2002

Mr. M. S. Tuckman  
Executive Vice-President  
Nuclear Generation  
Duke Energy Corporation  
PO Box 1006  
Charlotte, NC 28201-1006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, AND CATAWBA NUCLEAR  
STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (LRA)

Dear Mr. Tuckman:

By letter dated June 13, 2001, Duke Energy Corporation (Duke) submitted for Nuclear Regulatory Commission (NRC) review an application, pursuant to 10 CFR Part 54, to renew the operating licenses for the McGuire Nuclear Station, Units 1 and 2, and Catawba Nuclear Station, Units 1 and 2. The NRC staff is reviewing the information contained in this license renewal application and has identified, in the enclosure, areas where additional information is needed to complete its review. Specifically, the enclosed request for additional information (RAI) is from the following section(s) of the LRA:

Section 3.1, Aging management of Reactor Vessel, Internals, Reactor Coolant System  
Appendix B, B.3.27, Reactor Vessel Internals Inspection

Please provide a schedule by letter, or electronic mail for the submittal of your response within 30 days of the receipt of this letter. Additionally, the staff would be willing to meet with Duke prior to the submittal of the response to provide clarification of the staff's request for additional information.

Sincerely,

**/RA/**

Rani L. Franovich, Project Manager  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket Nos. 50-369, 50-370, 50-413 and 50-414

Enclosure: As stated

cc w/encl: See next page

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Section 3.1, Aging management of Reactor Vessel, Internals, Reactor Coolant System  
Appendix B, B.3.27, Reactor Vessel Internals Inspection

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NAME	RFranovich	EGHylton	PTKuo	PTKuo for CIGrimes
DATE	01/30/2002	01/30/2002	01/30/2002	01/30/2002

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E. Hylton

**E-MAIL:**

PUBLIC

J. Johnson

W. Borchardt

D. Matthews

F. Gillespie

C. Grimes

J. Strosnider (RidsNrrDe)

E. Imbro

G. Bagchi

K. Manoly

W. Bateman

J. Calvo

C. Holden

P. Shemanski

S. Rosenberg

G. Holahan

S. Black

B. Boger

D. Thatcher

G. Galletti

B. Thomas

R. Architzel

J. Moore

R. Weisman

M. Mayfield

A. Murphy

W. McDowell

S. Droggitis

N. Dudley

RLEP Staff

-----

R. Martin

C. Patel

C. Julian (RII)

R. Haag (RII)

A. Fernandez (OGC)

M. Khanna

C. Munson

R. Elliott

McGuire & Catawba Nuclear Stations, Units 1 and 2

Mr. Gary Gilbert  
Regulatory Compliance Manager  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745

Ms. Lisa F. Vaughn  
Duke Energy Corporation  
422 South Church Street  
Charlotte, North Carolina 28201-1006

Anne Cottingham, Esquire  
Winston and Strawn  
1400 L Street, NW  
Washington, DC 20005

North Carolina Municipal Power  
Agency Number 1  
1427 Meadowood Boulevard  
P. O. Box 29513  
Raleigh, North Carolina 27626

County Manager of York County  
York County Courthouse  
York, South Carolina 29745

Piedmont Municipal Power Agency  
121 Village Drive  
Greer, South Carolina 29651

Ms. Karen E. Long  
Assistant Attorney General  
North Carolina Department of Justice  
P. O. Box 629  
Raleigh, North Carolina 27602

Ms. Elaine Wathen, Lead REP Planner  
Division of Emergency Management  
116 West Jones Street  
Raleigh, North Carolina 27603-1335

Mr. Robert L. Gill, Jr.  
Duke Energy Corporation  
Mail Stop EC-12R  
P. O. Box 1006  
Charlotte, North Carolina 28201-1006

Mr. Alan Nelson  
Nuclear Energy Institute  
1776 I Street, N.W., Suite 400  
Washington, DC 20006-3708

North Carolina Electric Membership  
Corporation  
P. O. Box 27306  
Raleigh, North Carolina 27611

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
4830 Concord Road  
York, South Carolina 29745

Mr. Virgil R. Autry, Director  
Dept of Health and Envir Control  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Mr. C. Jeffrey Thomas  
Manager - Nuclear Regulatory Licensing  
Duke Energy Corporation  
526 South Church Street  
Charlotte, North Carolina 28201-1006

Mr. L. A. Keller  
Duke Energy Corporation  
526 South Church Street  
Charlotte, North Carolina 28201-1006

Saluda River Electric  
P. O. Box 929  
Laurens, South Carolina 29360

Mr. Peter R. Harden, IV  
VP-Customer Relations and Sales  
Westinghouse Electric Company  
6000 Fairview Road - 12<sup>th</sup> Floor  
Charlotte, North Carolina 28210

Mr. T. Richard Puryear  
Owners Group (NCEMC)  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745

Mr. Richard M. Fry, Director  
North Carolina Dept of Env, Health, and  
Natural Resources  
3825 Barrett Drive  
Raleigh, North Carolina 27609-7721

County Manager of  
Mecklenburg County  
720 East Fourth Street  
Charlotte, North Carolina 28202

Michael T. Cash  
Regulatory Compliance Manager  
Duke Energy Corporation

McGuire Nuclear Site  
12700 Hagers Ferry Road  
Huntersville, North Carolina 28078

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
12700 Hagers Ferry Road  
Huntersville, North Carolina 28078

Dr. John M. Barry  
Mecklenburg County  
Department of Environmental Protection  
700 N. Tryon Street  
Charlotte, North Carolina 28202

Mr. Gregory D. Robison  
Duke Energy Corporation  
Mail Stop EC-12R  
526 S. Church Street  
Charlotte, NC 28201-1006

Mary Olson  
Nuclear Information & Resource Service  
Southeast Office  
P.O. Box 7586  
Asheville, North Carolina 28802

Paul Gunter  
Nuclear Information & Resource Service  
1424 16th Street NW, Suite 404  
Washington, DC 20036

Lou Zeller  
Blue Ridge Environmental Defense League  
P.O. Box 88  
Glendale Springs, North Carolina 28629

Don Moniak  
Blue Ridge Environmental Defense League  
Aiken Office  
P.O. Box 3487  
Aiken, South Carolina 29802-3487

**Request for Additional Information**  
**McGuire Nuclear Station, Units 1 and 2, and**  
**Catawba Nuclear Station, Units 1 and 2**

3.1.4 Reactor Coolant System - Reactor Vessel internals

- 3.1.4-4      The McGuire and Catawba UFSARs describe that the main radial support for the lower end of the core barrel is accomplished by “key” and “keyway” joints to the reactor vessel wall. In regard to these joints, an Inconel clevis block is welded to the vessel inner circumference at equally spaced points. Another Inconel insert block is bolted to each of these blocks and has a “keyway” geometry. Opposite each of these is a “key” which is attached to the internals. According to WCAP-14577, License Renewal Evaluation: Aging Management for Reactor Internals, the clevis insert bolts (fasteners) are susceptible to loss of preload due to stress relaxation during normal operation. In LRA Table 3.1-1, the applicant has not identified loss of preload as an applicable aging effect for the clevis insert fasteners. Discuss the technical basis for not including loss of preload as an applicable aging effect for the clevis insert fasteners.

B.3.27 Reactor Vessel Internals Inspection Program

- B.3.27-2      Examination Category B-N-3, for removable core support structures, is directly applicable to the RVI components. This requires visual VT-3 examination of all accessible parts of the RVI components. Cracks initiated by stress corrosion cracking or fatigue will start off very small and will grow over time. VT-3 examinations may not be adequate for detecting cracks before they reach the critical flaw size. The Monitoring and Trending section of this program, which describes the inspection activities for various types of RVI components, indicates that a visual inspection will be performed on components fabricated from plates, forgings and welds to detect the effects of cracking. For RVI plates, forgings and welds, the staff requests the applicant to indicate which visual inspection method (VT-1, VT-2 or VT-3) will be used so that the staff can determine if the visual inspection activities will be capable of detecting cracks before a critical flaw size is reached. If VT-3 is the proposed inspection method, please justify the use of this method for identifying small cracks, or describe enhancements planned to augment this inspection activity. Also, please indicate the frequency of inspections for all inspection types described in this aging management program.