

January 30, 2002

Mr. M. S. Tuckman  
Executive Vice-President  
Nuclear Generation  
Duke Energy Corporation  
PO Box 1006  
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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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**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.