

October 2, 2003

Mr. W. R. McCollum, Jr.
Senior Vice President
Duke Energy Corporation
526 South Church St
Charlotte, NC 28201-1006

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 AND MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, RE: SAFETY LIMITS, INSTRUMENTATION, REACTOR COOLANT SYSTEM AND REPORTING REQUIREMENTS (TAC NOS. MB8359, MB8360, MB8361 AND MB8362)

Dear Mr. McCollum:

The Nuclear Regulatory Commission staff has reviewed your application dated March 24, 2003, "Proposed Technical Specifications and Bases Amendment, 2.0, Safety Limits; 3.3, Instrumentation; 3.4, Reactor Coolant System; 5.6, Reporting Requirements." We have found that additional information is needed, as stated in the Enclosure, to enable us to continue our review.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager
Project Directorate II-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

cc: w/encl: See next page

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*See previous concurrence

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REGARDING APPLICATION FOR LICENSE AMENDMENTS

DUKE POWER COMPANY

WILLIAM B. MCGUIRE NUCLEAR STATION, UNIT 2

DOCKET NOS. 50-369 AND 50-370

CATAWBA NUCLEAR STATION UNITS 1 & 2

DOCKET No. 50-413 AND 50-414

Change in Reactor Coolant System Flow Rate

Background

In Attachment 3 to Duke Power's application dated March 24, 2003, "Description of Proposed Changes and Technical Justification," it is proposed to change the required minimum measured reactor coolant system (RCS) flow rate from 390,000 gallons per minute (gpm) to 382,000 gpm.

The application provided the history of this issue, noting that the plants were originally licensed with an RCS flow rate of 385,000 gpm and that at McGuire, Units 1 and 2, and Catawba, Unit 1, the RCS flow rates were reduced to 382,000 gpm in the early 1990's due to concerns with steam generator tube plugging in the steam generators in use at that time.

The application states that, in the mid-1990s, for the replacement of the steam generators at McGuire, Units 1 and 2, and Catawba, Unit 1, RCS flow was analyzed at a flow rate of 382,000 gpm. This was addressed in the submittal through ten references cited by the licensee supporting approval by the Nuclear Regulatory Commission (NRC) staff of a flow rate of 382,000 gpm for McGuire, Units 1 and 2 on May 5, 1997, and six references supporting approval by the NRC staff of a flow rate of 382,000 gpm for Catawba, Unit 1 on August 29, 1996. Each of these approvals was for operation with the replacement steam generators.

The licensee then notes that the flow rates were increased to 390,000 gpm by amendment nos. 191/172 on March 2, 2000, for McGuire, Units 1 and 2, respectively and by amendment nos. 184/176 on March 1, 2000, for Catawba, Units 1 and 2, respectively. The licensee stated that the reason for the increase to the 390,000 gpm value was "to make more effective use of available operating and analytical margins."

The current licensing bases for McGuire, as described in Updated Final Safety Analysis Report (UFSAR) (for example, see Tables 15-4 and 15-42) references a flow rate of 390,000 gpm for many of the transient and accident analyses in UFSAR section 15.0. Table 15-4 of the UFSAR (April 8, 2000 revision) for Catawba provides a similar reference.

Requests for Information

1. The application dated March 24, 2003, states:

The analyses supporting the RCS minimum total flow rate of 390,000 gpm assumed a minimal steam generator tube plugging percentage. The RCS minimum total flow rates for McGuire and Catawba, Units 1 and 2 were increased to make more effective use of available operating analytical margins. This 390,000 gpm RCS total flow rate should be considered a cycle-specific minimum value, reflecting the condition of the McGuire and Catawba steam generators at the time the license amendment request was made.

Provide a detailed technical discussion of why the reasons cited above to increase the flow rate to 390,000 gpm are no longer applicable.

2. As indicated in the NRC staff's safety evaluation for WCAP-14483 (Reference 1), the NRC staff considers that a change in observed RCS flow is an indication of a physical change to the plant and such a change should be reviewed by the NRC staff. If the basis for the proposed change in RCS flowrate is an observed change in the plant flowrate, please provide a detailed technical discussion of the cause and its safety related effect on design basis accident and transient analyses.
3. The NRC staff's safety evaluation for WCAP-14483 addressed the retention of a minimum limit of the RCS flowrate in the TS if the operating value of RCS flowrate is relocated from the TS to the COLR. An underlying assumption for the adequacy of this minimum limit for the RCS flowrate is that it is applicable to the current design of the plant and the current design basis analyses for the plant. Either the design or the analyses may change due to changes in fuel, steam generator tube plugging, RCS coolant temperature measurement concerns or other factors. Therefore, to reference a value of RCS flowrate that was approved at some prior time without establishing that it is currently adequate to ensure that all applicable acceptance criteria are and will continue to be met for design basis accident and transient analyses is insufficient. Please address this concern and provide the values of the acceptance criteria for all applicable design basis accident and transient analyses based on a flowrate of 382,000 gpm.

Reference

1. Letter from T. H. Essig, NRC, to A. Drake, Westinghouse Owners Group, "Acceptance for Referencing of Licensing Topical Report WCAP-14483, "Generic Methodology for Expanded Core Operating Limits Report," dated January 19, 1999.

McGuire Nuclear Station
Catawba Nuclear Station

cc:

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