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September 10, 2001

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

Subject: McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369, 370
Response to Request for Additional Information (RAI), Supplement 1
Application for Administrative Amendments to Facility Operating Licenses
NPF-9 and NPF-17
(TAC Nos. MA9297 and MA9298)

By letter dated July 30, 2001, the NRC staff requested additional information related to Duke Energy Corporation's (DEC) application for administrative amendments to Facility Operating Licenses NPF-9 and NPF-17. By letter dated August 30, 2001, DEC responded to the subject RAI.

Please find enclosed a revised response to License Condition 2.C (4), Thermal Sleeves, for McGuire Unit 2.

Questions regarding this submittal should be directed to Kay Crane, McGuire Regulatory Compliance at (704) 875-4306.

H. B. Barron

AD001

U. S. Nuclear Regulatory Commission
Document Control Desk
September 10, 2001
Page 2 of 4

cc: Mr. Robert E. Martin, Project Manager
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U. S. Nuclear Regulatory Commission
Document Control Desk
September 10, 2001
Page 3 of 4

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EC050-ELL

U. S. Nuclear Regulatory Commission
Document Control Desk
September 10, 2001
Page 4 of 4

H. B. Barron, being duly sworn, states that he is Vice President of McGuire Nuclear Station; that he is authorized on the part of Duke Energy Corporation to sign and file with the Nuclear Regulatory Commission this additional information in support of revisions to the McGuire Nuclear Station Facility Operating License Nos. NPF-9 and NPF-17; and, that all statements and matters set forth therein are true and correct to the best of his knowledge.



H. B. Barron, Vice President
McGuire Nuclear Station
Duke Energy Corporation

Subscribed and sworn to before me this 10th day of September, 2001.



Notary Public



My Commission Expires: 4/6/2002

McGuire Nuclear Station
Response to Request for Additional Information

LC.2.C (4), Thermal Sleeves for McGuire Unit 2

Restatement of Request:

LC.2.C(4) required that DEC provide a report justifying operation with thermal sleeves removed from selected locations in the reactor coolant system. DEC responded by letter dated May 13, 1983, providing the results of evaluations to support continued operation without the subject thermal sleeves installed. NRC's letter and safety evaluation of December 30, 1986, concluded that continued operation was acceptable with the thermal sleeves permanently removed. The staff's acceptance recognized that the McGuire TS 3/4 3.5.2 required reporting of ECCS actuations and injections, and the usage factor of each nozzle whenever its value exceeds 0.70. DEC is requested to provide a discussion of how the nozzle usage factor is currently monitored and of DEC's planned actions in the event its value exceeds the 0.70 value.

Response

As noted in the Request for Additional Information, the NRC's letter and safety evaluation of December 30, 1986¹, concluded that continued operation with thermal sleeved removed from selected locations was acceptable recognizing that the former McGuire TS 3/4 3.5.2 required reporting of ECCS actuations and injections and the usage factor of each nozzle whenever its value exceeded 0.70.

During Improved Technical Specification (ITS) implementation (approved by License Amendment 184/166 dated September 30, 1998²) this reporting requirement was removed. It was concluded that the requirement was redundant to 10 CFR 50.73 (a) (2) (iv) requiring a 30 day report in the event of an ECCS actuation. Since the CFRs are directly enforceable and sufficient regulatory control was provided, the duplication was not necessary within the Technical Specifications. However, the usage factor of 0.70 was not addressed in the justification. A failure to meet this reporting requirement since ITS implementation has not occurred.

This issue has been entered into McGuire's corrective action program (PIP M01-3639). As a corrective action, McGuire commits to develop a Selected Licensee Commitment (SLC) to incorporate the reporting requirements of former Technical Specification 3/4 3.5.2. This SLC will ensure proper NRC notification is accomplished in the event the usage factor of affected safety injection nozzles exceeds the 0.70 value.

Thermal fatigue is addressed in the McGuire Nuclear Station Fatigue Management Program by analyzing components with a postulated number of bounding transients that are commonly called

¹ December 30, 1986, Darl Hood to Mr. H. B. Tucker, Reactor Coolant System Thermal Sleeves – McGuire Nuclear Station, Units 1 and 2.

² September 30, 1998, Frank Rinaldi to Mr. H. B. Barron, Issuance of Amendments – McGuire Nuclear Station, Units 1 and 2 (TAC Nos. M98964 and M98965).

design transients. A continual counting of the occurrences of the transients and a comparison of that count to the number used in design and analysis of the components confirm the bounding fatigue life for those components. The Safety Injection nozzles at McGuire Nuclear Station have been analyzed to the ASME Boiler and Pressure Vessel Code, Section III, Nuclear Power Plant Components, including all addenda through Winter, 1971. Using the ASME Code acceptance criteria, cumulative usage factors (CUF) must be less than 1.0. All McGuire Nuclear Station safety nozzle stresses and usage factors are less than 1.0 and are documented in the pertinent piping analysis calculations and stress reports. The number of occurrences of transients is monitored by Operations and Engineering and is documented and managed by the Thermal Fatigue Management Program. This program is a prevention program in that it seeks to preclude cracking due to low-cycle thermal fatigue. It is accomplished by continually showing that the severity and number of occurrences of the transients actually occurring are enveloped by the severity and number of occurrences of the analyzed transients.

McGuire Nuclear Station determines the usage factor by monitoring the number of occurrences of operating transient cycles and comparing this number to the allowed design cycles. The responsible engineer will identify plant transient conditions that require assessment. Should the thermal and pressure profile for a specific transient be outside the parameters defined for that transient set or should an allowable cycle count limit for a transient cycle set be approached or exceeded, the program requires that the responsible engineer identify the issue to the appropriate engineering groups for resolution within a manageable time period. A manageable time period is the time needed to complete actions to ensure the affected components stay within acceptable cycle count limits. Some of the corrective actions consist of reanalysis, procedure changes, modifications, and replacement of components.

Thermal fatigue transients have been tracked since operation began at McGuire Nuclear Station. Operating experience associated with the Thermal Fatigue Management Program has demonstrated that the program continues to monitor plant transients and track the accumulation of these transients consistent with the requirements in Technical Specification 5.5.6, "Component Cyclic or Transient Limit." McGuire's Problem Identification Program (PIP) documents the discovery of transients and corrective actions. It records appropriate corrective actions and tracks completion of those actions.