DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

September 8, 1986

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: B.J. Youngblood, Director
PWR Project Directorate #4

Subject: McGuire Nuclear Station
Docket Nos. 50-369 and 50-370
Proposed Technical Specification Amendment
Reactor Coolant System Pressure-Temperature Limits
Proposed Revision to Bases

Dear Mr. Denton:

Attached are proposed license amendments to Facility Operating Licenses NPF-9 and NPF-17 for McGuire Nuclear Station Units 1 and 2, respectively. The proposed changes to the McGuire Technical Specifications and the Bases of Technical Specifications seek to incorporate improvements identified as a result of NRC and industry efforts to improve technical specifications and to update the McGuire pressure-temperature operating limits as a result of examinations of capsules withdrawn during the first refueling outage of each McGuire unit.

The attachment to this letter is grouped into seven main sections:

Background Discussion
Technical Bases for Revised Pressure-Temperature Limits
Existing Technical Specification and Bases "Mark Up"
Proposed Revision to Technical Specifications
Proposed Revision to Bases of Technical Specifications
McGuire FSAR Update
Significant Hazards Consideration

As the NRC is well aware, there has existed an intense effort since early 1985 by both NRC staff and industry to reevaluate the purpose of technical specifications. This effort reached a milestone in October 1985 when both the NRC Technical Specification Improvement Project and the Atomic Industrial Forum (AIF) Subcommittee on Technical Specification Improvements issued reports on the results

Rec'd w/ check
$150.00

A001
1/1

of their respective efforts. Two areas of technical specifications that were identified in these reports were improving the bases of technical specifications and removing specifications that are redundant to regulation. It is the intent of these proposed revisions to the McGuire Technical Specifications and to the Bases of Technical Specifications to address these two identified areas of improvement for the RCS pressure-temperature specification. This opportunity exists because reactor vessel surveillance capsules were withdrawn from each McGuire unit during refueling outages during the past two years and the limits are in need of revision as a result of the examination and analysis of these capsules.

Duke believes that the proposal contained herein, if approved, would demonstrate a positive commitment by the NRC towards improving the overall quality of technical specifications.

This request involves one application for amendment to McGuire's Technical Specifications. Accordingly, pursuant to 10 CFR 170.21 a check for $150.00 is enclosed.

Please feel free to contact us if you require any additional information.

Very truly yours,

Hal B. Tucker

RLG/100/jgm

Attachment

xc: Dr. J. Nelson Grace
Regional Administrator
U.S. Nuclear Regulatory Comm.
Region II
101 Marietta St., NW, Suite 2900
Atlanta, Georgia 30323

W.T. Orders
NRC Resident Inspector
McGuire Nuclear Station

Mr. Dayne Brown, Chief
Radiation Protection Branch
Division of Facility Services
Dept. of Human Resources
P.O. Box 12200
Raleigh, North Carolina

Mr. Darl Hood, Project Manager
Office of Nuc. Reactor Regulation
U.S. Nuc. Regulatory Commission
Washington, D.C. 20555

HAL B. TUCKER, being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this revision to the McGuire Nuclear Station 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.

Hal B. Tucker

Hal B. Tucker, Vice President

Subscribed and sworn to before me this 8th day of September, 1986.

Sue C. Skevill

Notary Public

My Commission Expires:

September 20, 1989

bxc: P.M. Abraham
K.S. Canady
A.V. Carr
R.C. Futrell
C.L. Harlin
C.L. Hartzell
C.W. Hendrix
T.L. McConnell
E.O. McCraw
W.D. Reckley
G.E. Vaughn
R.L. Jansen W
T. Tipton (AIF)
B&W Owners Group
T.S. Committee
N.A. Rutherford
J.G. Torre
P.B. Nardoci
R.W. Ouellette
R.O. Sharpe
P.F. Guill
V.M. Kapila
S.A. Gewehr
J.B. Day
MC-801.01
MC-813.20
(35)

DUKE POWER COMPANY

McGUIRE NUCLEAR STATION

BACKGROUND DISCUSSION FOR

PROPOSED TECHNICAL SPECIFICATION REVISION

REACTOR COOLANT SYSTEM

PRESSURE TEMPERATURE LIMITS

(RLG14)

BACKGROUND -

Facility Operating Licenses issued by NRC include the following statement which requires that licensees comply with federal regulations as well as plant technical specifications:

"This license shall be deemed to contain... and is subject to all applicable provisions of the Act and to the rules, regulations... and is subject to the additional conditions specified or incorporated below.

(2) Technical Specification...."

Two specific regulations that licensees are required to comply with are:

10CFR50, Appendix G - Fracture Toughness Requirements

10CFR50, Appendix H - Reactor Vessel Material Surveillance Program Requirements

Present technical specifications contain the requirement for reactor coolant systems to be operated within specified pressure-temperature limits (3/4.4.9 Pressure/Temperature Limits).

A review of the present McGuire technical specification yields:

1) The LCO is redundant to 10CFR50, Appendix G and its analysis requirements and is inconsistent with the surveillance.

2) The APPLICABILITY is inconsistent with the existing LCO, existing surveillance 4.4.9.1.1 and the Bases. The existing LCO states that the limits shall be met during "heatup, cooldown, criticality, and inservice leak and hydrostatic testing".

   Specification 4.4.9.1.1 requires determination of temperature and pressure during system "heatup, cooldown, and inservice leak and hydrostatic testing". No surveillance is identified for critical operation. Furthermore, both of these lists of plant conditions differ from the existing applicability which is "at all times".

3) Surveillance 4.4.9.1.2 is wholly redundant to 10CFR50, Appendix H.

4) The ACTION statement provides those operational related items that the NRC has found to be acceptable in the event it is determined that the regulation is not being complied with.

5) Surveillance 4.4.9.1.1 provides an NPC accepted method and frequency by which compliance with the specification is attained, but is inconsistent with the LCO and applicability.

Three of these five items are redundant to federal regulations. The remaining two may be subject to administrative controls rather than be included as a part of the operating license, particularly if they are maintained in a document that is enforceable. At a minimum, the inconsistencies within this specification should be corrected.

It is the objective of this proposed technical specification revision to seek an alternate method by which these regulatory requirements can be addressed.

DISCUSSION OF OPTIONS -

There are three options available when considering potential changes to Specification 3/4.4.9:

1) Revise pressure-temperature curves only,

2) Revise as desired and relocate into administratively controlled and maintained document, or

3) Revise as desired but retain in technical specifications.

The relative merits and impacts of each option are discussed in the following paragraphs.

OPTION 1 - Revise pressure-temperature curves only.

Industry and NRC Staff have been involved in a major initiative to improve technical specifications. This issue has been the subject of intense review and study and several reports have been issued. Some of the concerns identified as generically applicable to technical specifications are applicable to this specific one. These concerns include:

1) requirement being redundant to regulation

2) ambiguous requirements

3) presentation is not user-friendly

4) lack of one to one correlation between LCO, Action and surveillance

5) bases need to be improved.

Given the concerns identified with technical specifications and the opportunity available to make meaningful improvements, doing nothing other than revising the pressure-temperature limits curves as a result of the recent capsule evaluations is not a desirable option. Duke does not elect to pursue this option at this time in that we prefer to see meaningful changes made to the entire specification.

OPTION 2 - Revise as desired and relocate into administratively controlled and maintained document

As noted in the discussion in response to Option 1, several concerns exist with this specification which can be corrected. By relocating the as revised version of the specification into a document administratively maintained and controlled by the licensee, all concerns could be addressed. The document would be maintained in much the same manner as a security plan or emergency plan except that changes would be evaluated pursuant to the criteria of 10CFR50.59. In this particular instance, the program is referenceable from the McGuire FSAR, Chapter 5. It is thus commensurate with a regulatory commitment and as such requirements are also contained in 10CFR50, Appendix G and H, are readily enforceable by the regulator.

Regulation 10CFR50, Appendix H, Section IIc does contain a requirement that:

> "If a change in the Technical Specification is required, either in the pressure-temperature limits or in the operating procedures required to meet the limits, the expected date for submittal of the revised Technical Specifications must be provided with the report.

In order to pursue Option 2, it appears that this regulatory requirement would need to be revised through rulemaking or an exemption request pursued.

Pursuit of Option 2 would reduce the administrative burden associated with maintaining the specification up to date in the licensing process. NRC resources would be conserved in that only technical reviews of the capsule report would be required by NRC (as presently required by regulation). Industry resources would be conserved in that efforts would be directed at preparation and submittal of capsule reports (as presently required by regulation) and by administratively instituting whatever changes are necessary at the plant as a result of the capsule analysis.

These benefits are tempered by the fact that at most four and sometimes only three capsule reports are required during the plant operating lifetime. Duke does not elect this option at this time.

OPTION 3 - Revise as desired but retain in technical specifications

The identified concerns with this specification could be revised via a license amendment application. The only concern identified that would not be addressed by this option is that the broad requirement itself is a requirement of a regulation and is thus redundant to regulation.

However, the technical specification action statement does identify those actions, found acceptable to NRC, that should be taken in the event the requirement is violated. In this option, these actions remain part of the operating license and would be subject to NRC review and public notification should a utility request a change. Each such proposed change would require a review pursuant to 10CFR50.91,.92 and a determination regarding significant hazards. Given the present criteria of 50.92 and the lack of bases for the present actions and surveillance, it is not clear how a reasonable significant hazards determination might be made if changes to the Action Statement are desired.

However, it is expected that the only areas expected to change over the life of the plant in this specification are the actual pressure-temperature limits and possibly the withdrawal schedule. And inasmuch as these areas are specifically required by regulations, it seems reasonable to pursue Option 3.

DISCUSSION OF PROPOSED CHANGE -

In reviewing the three options, it appears that pursuit of Option 3 is the most viable at this time. This proposed change includes change to the following aspects of technical specification 3/4.4.9 Reactor Coolant System Pressure/-Temperature Limits -

Limiting Condition for Operation

Applicability

Action Statement

Surveillance Requirements

Bases

Also included in this submittal package is a draft revision to the McGuire FSAR (1985 Update). It is Duke's intention to include this in the update to be submitted in July 1986.

Specification 3/4.4.9 contains requirements for reactor coolant system, pressurizer, and overpressure protection system. The LCO's, surveillance, and Bases for these latter two elements are not being revised by this proposed change package.

Limiting Condition for Operation (3.4.9.1):

The LCO has been revised to read -

"The Reactor Coolant System (except the pressurizer) pressure and temperature shall be maintained within the limits determined by analysis performed in accordance with the requirements of 10CFR50, Appendix G. The Reactor Coolant System (except the Pressurizer) heatup and cooldown rate shall not exceed 100 ^{o}F/hour."

It is noted that the above LCO is wholly redundant to the actual regulation. However, it serves a purpose of establishing a tie between the regulation and the allowed operational flexibility provided by the Action statements. Without this LCO, an action statement could not exist in technical specifications to address deviation from this regulation.

Applicability:

The applicability of this specification is being revised to accurately reflect the conditions when this specification is applicable. These conditions include situations where the reactor vessel itself is subject to stresses of a transient nature. This includes the thermal stresses due to heatup and cooldown operations as well as the additional pressures stresses as a result of inservice leak and hydrostatic test operations.

Action Statement:

The action statement remains the same as is presently in this specification with the addition of the words "pressure-temperature" as noted. This is to make the actions phraseology consistent with that of the LCO. An editorial change to the sequence of "pressure" and "temperature" in the second line is also being made.

Surveillance Requirements:

Surveillance 4.4.9.1.1 remains as written to reflect surveillance requirements during the transient conditions of heatups, cooldown, inservice leak, and hydrostatic testing operations. Surveillance 4.4.9.1.2 has been relocated to the McGuire FSAR because it is wholly redundant to regulation and it does not have a complimentary LCO or Action Statement.

A surveillance requirement of once per 12 hours (which is consistent with existing practice) has been added.

As discussed in the Background section of this document, licensees are required to comply with applicable federal regulations. 10CFR50, Appendix H is an applicable federal regulation. This specification is wholly redundant to the existing license requirement to comply with 10CFR50, Appendix H. The information contained in this surveillance has been relocated to the Bases and to the McGuire FSAR.

Figures and tables that were referred to in sections removed have been relocated as follows:

Technical Specification Figures 3.4-2a, 3.4-2b -

These curves are the normal heatup and cooldown limitations for McGuire Unit 1. As result of the analysis of Capsule U that was withdrawn during the first refueling outage, the curves have been revised. The capsule report is now referenced in the bases of this specification and included as an Appendix to McGuire FSAR Chapter 5.

Technical Specification Figures 3.4-3a, 3.4-3b -

These curves are the normal heatup and cooldown limitations for McGuire Unit 2. As result of the analysis of Capsule V that was withdrawn during the first refueling outage, the curves have been revised. The capsule report is now referenced in the bases of this specification and included as an Appendix to McGuire FSAR Chapter 5.

Technical Specification Table 4.4-5 -

This table has been updated to reflect the information contained in the reference surveillance capsule reports and has been relocated to the FSAR Chapter 5.

Bases -

The Bases of Technical Specification 3/4.4.9 is in need of improvement. Much of the information contained therein is of little use to the intended user, the operator. Some of the information is redundant to that presented in the McGuire FSAR and surveillance capsule reports. The Bases does not provide the type of information recommended by ANSI/ANS 58.4 - 1979. (It is noted that this standard is in the process of being updated.) The proposed rewrite of the Bases seeks to address the recommendations of the standard to the extent that such information is known. The Bases has been revised to reflect the as proposed technical specification previously discussed in this document. The proposed change to the Bases is not considered to be an amendment to the Facility Operating License.

TECHNICAL BASES FOR

REVISED

PRESSURE-TEMPERATURE LIMITS

(RLG100)

TECHNICAL BASIS FOR REVISED PRESSURE-TEMPERATURE LIMITS

The revised pressure-temperature limits are derived from the results of examinations by Westinghouse of reactor vessel surveillance capsules withdrawn from each McGuire unit. The results are documented in the capsule reports, referenced in the revised Bases and included in the FSAR update. The methodology used is consistent with accepted practice as described in the FSAR and Appendix A of the capsule reports.

On McGuire Unit 1, the present technical specification pressure-temperature limits are valid to only 4.86 EFPY. (Reference: H.B. Tucker letter to H.R. Denton dated April 5, 1985). There is a need to approve this proposed revision prior to the unit exceeding this value. Alternatively, McGuire could administratively implement the more conservative limits proposed herein. McGuire Unit 1 is at approximately 2.5 EFPY as of June 1986.

On McGuire Unit 2, the present technical specification pressure-temperature limits are valid to 10 EFPY but the proposed limits which are essentially examined, and results reported in sufficient time to revise the pressure-temperature limit curves prior to exceeding 8 EFPY. McGuire Unit 2 is at slightly less than 2 EFPY as of June 1986.

The revised Unit 2 Capsule withdrawal schedule reflects the fact that capsule V was inadvertently withdrawn during the first Unit 2 refueling outage. The next capsule scheduled to be withdrawn, X, will be evaluated in sufficient time to revise the pressure-temperature limit curves prior to 8 EFPY. The remainder of the withdrawal schedule is consistent with the recommendations of ASTM E185.