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Records Management Branch (Document Control Desk) *See Proposed Change To Tech Specs*

SUBJECT: Application for amends to licenses DPR-38, DPR-47 & DPR-55, to revise pressure-temperature limits of TS 3.4.3. Amend will revise heatup, cooldown & inservice test limitations for RCS to max of 33 EFPY & revises TS 3.4.12, to reflect limits.

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May 11, 1999

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Proposed Revision to Technical Specifications
Pressure-Temperature Operating Curves
Technical Specification Change No. 99-02

Pursuant to 10 CFR 50.90, Duke Energy Corporation (Duke) hereby requests an amendment to the Technical Specifications for Oconee Nuclear Station. This proposed amendment revises the pressure-temperature (P-T) limits of Technical Specifications (TS) 3.4.3 for Units 1, 2, and 3. The proposed amendment will revise the heatup, cooldown, and inservice test limitations for the Reactor Coolant System of each unit to a maximum of 33 Effective Full Power Years (EFPY). Further, the proposed amendment revises TS 3.4.12, Low Temperature Overpressure Protection (LTOP) System, to reflect the revised P-T limits of the reactor vessels. These changes rely on recently approved methodology for determining allowable pressure temperature limits described below in more detail.

During relatively low temperature RCS operations, the present TS require no more than one Reactor Coolant Pump (RCP) be operated per loop. RCP operation at low pressure with either one pump in one RCS loop, or with one RCP in each RCS loop, results in gradual RCP impeller wear from cavitation. The degraded net positive suction head (NPSH) conditions are caused by the restricted P-T operating envelope at low pressures and temperatures. Costs incurred repairing RCP impeller cavitation damage are approximately \$8 million. The estimated costs to repair existing impeller

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cavitation damage is about \$13 million. These costs do not include lost generation.

The proposed TS changes will permit the Oconee units to be operated during LTOP conditions with two RCPs in operation in a single loop. This change substantially improves NPSH margin for the RCPs, thereby eliminating impeller cavitation wear. It is anticipated that following replacement of existing worn impellers that no further replacements will be needed and radiation exposure associated with impeller replacements eliminated. Additionally, the proposed changes would relax the LTOP operating envelope, thereby reducing potential challenges to the RCS power operated relief valve.

Duke requests approval of the proposed TS changes by October 6, 1999, in order to preclude RCP impeller wear during shutdown for the Unit 2 refueling outage presently scheduled to begin on November 6, 1999. Duke requests a 90-day grace period for implementation should this request be approved prior to October 6, 1999.

The proposed amendment also includes three exemption requests pursuant to 10 CFR 50.12 from certain requirements of 10 CFR 50.60(a) as described below.

- Code Case N-514 will allow an alternate methodology to determine the LTOP setpoints for the Oconee units. The content of the Code Case has been incorporated and published in the 1993 Addenda to Appendix G of ASME Section XI. The NRC has previously approved the use of Code Case N-514 for a number of nuclear power plants including Oconee Units 1, 2 and 3.
- Code Case N-588 provides procedures for determining reactor vessel pressure and temperature limits derived from postulating a circumferentially oriented reference flaw in a circumferential weld. The NRC has previously approved the use of Code Case N-588 for Kewaunee.

- Code Case N-626 provides an alternate method for determining the fracture toughness of reactor vessel materials for use in determining P/T limits. The code case was approved for use by ASME Section XI on September 18, 1998.

Attachments 1 and 2 provide the proposed new TS pages and the markup pages for the TS, respectively. The markup pages identify the added and deleted portions. Attachment 3 and the Bases of the Technical Specifications provide the supporting technical justification. Attachments 4 and 5 contain the No Significant Hazards Consideration Evaluation and the Environmental Impact Analysis, respectively.

Implementation of this amendment to the Oconee Technical Specifications will impact the Oconee UFSAR. Necessary changes will be made in accordance with 10 CFR 50.71(e).

The Nuclear Safety Review Board and the ONS Plant Operations Review Committee have reviewed and approved this proposed Technical Specification amendment.

In its review of the application to renew the Oconee operating licenses (submitted by letter dated July 6, 1998), the NRC Staff requested an assessment of the estimated P-T limits at 48 EFPY, the end of the renewal period. The Oconee response to this request (submitted by letter dated February 17, 1999) is based in part on the code cases considered in the development of the P-T limits for 33 EFPY enclosed in this submittal. Therefore, not only is Staff review of these proposed 33 EFPY P-T limits important for continued operation of Oconee in the current license term, but the review is also an important element of the Staff's review of the application to renew the Oconee operating licenses.

A copy of this application is being forwarded to the South Carolina Department of Health and Environmental Control for their review and, as appropriate, subsequent consultation with the staff.

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If there are any questions regarding this submittal, please contact Robert Douglas at 864-885-3073.

Very truly yours,



W. R. McCollum, Jr.,
Site Vice President

Attachments (5)

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May 11, 1999

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cc: Mr. L. A. Reyes
Regional Administrator, Region II

Mr. M. A. Scott
Senior Resident Inspector


Mr. D. E. Labarge
ONRR, Senior Project Manager

Mr. J. M. Sebroski
ONRR, Project Manager

Mr. V. R. Autry
DHEC

AFFIDAVIT

W. R. McCollum, Jr., being duly sworn, states that he is Site Vice President of Duke Energy Corporation; that he is authorized on the part of said corporation to sign and file with the Nuclear Regulatory Commission this revision to the Oconee Nuclear Station License Nos. DPR-38, DPR-47, and DPR-55; and that all statements and matters set forth therein are true and correct to the best of his knowledge.



W. R. McCollum, Jr., Site Vice President

Subscribed and sworn to me: May 11, 1999
Date

Notary Public: Cerice M. Breayale

My Commission Expires: 2-12-2003
Date

SEAL