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 DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125
 STOLZ, J. F. Office of Nuclear Reactor Regulation, Director (post 851125

SUBJECT: Application to amend Licenses DPR-38, DPR-47 & DPR-55,
 revising Tech Specs authorize use of steam generator sleeves
 for repair of defective tubes. Proprietary Rev 1 to BAW-1823P
 encl. Rev withheld (ref 10CFR2.790). Fee paid.

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

January 16, 1986.

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

Attention: Mr. J. F. Stolz, Chief
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

Pursuant to 10 CFR 50, 50.90, please find attached a proposed amendment to the Oconee Facility Operating License and revision to the Oconee Nuclear Station Technical Specifications.

The purpose of this License Amendment Request is to obtain authorization to use steam generator sleeves for repair of defective steam generator tubes. Technical Specification 4.17 now requires that all defective tubes be plugged. sleeving has been demonstrated to be a safe and effective method of repair for many types of defects. The use of sleeve repairs will reduce the number of steam generator tubes that must be plugged and removed from service.

Attachment A describes the proposed changes, provides the reasons for the changes, and the supporting no significant hazards evaluation. Attachment B contains the purposed revision of Technical Specification 4.17, pages 4.17-1 through 4.17-6. Attachment C is a non-proprietary report BAW-1823 Revision 1 prepared by Babcock & Wilcox Co. describing the sleeving repair process which will be used. A proprietary version of Attachment C will be submitted separately for NRC staff review.

The NRC review and approval of this change is requested prior to January 31, 1986. This would permit the use of sleeving repair during the Oconee Unit 1 refueling outage beginning in February 1986 in the event that significant tube degradation is encountered during eddy current examination.

Duke is forwarding a copy of this application to the South Carolina Department of Health and Environmental Control for review, and as appropriate, subsequent consultation with the staff.

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Mr. Harold R. Denton, Director
January 16, 1986
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Pursuant to 10 CFR 170.21, enclosed is a check in the amount of \$150.00 for the application fee.

Very truly yours,



Hal B. Tucker

MAH:slb

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Ms. Helen Nicolaras
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

Mr. Heyward G. Shealy, Chief
Bureau of Radiological Health
S.C. Department of Health &
Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

ATTACHMENT A

DUKE POWER COMPANY
OCONEE NUCLEAR STATION
LICENSE AMENDMENT REQUEST
EVALUATION OF PROPOSED CHANGE TO THE OCONEE NUCLEAR STATION
TECHNICAL SPECIFICATIONS

Pursuant to 10CFR Part 50, Section 50.90, Duke Power Company, the holder of Operating Licenses DPR-38, DPR-47 and DPR-55, do hereby proposes the following changes to Oconee Nuclear Station Technical Specifications:

Technical Specification 4.17
Steam Generator Tubing Surveillance

1. Proposed Changes - refer to Attachment B for the proposed wording.
 - a. Revise acceptance criteria to reference "repair limit" in lieu of "plugging limit" and to permit either repair by sleeving or removal from service (4.17.2).
 - b. Revise the first sample inspection to exclude tubes with previous detectable wall penetrations if they have been plugged or sleeve repaired in the affected area (4.17.3.a.1.)
 - c. Revise the definition of "defect" to reference "repair limit" rather than "plugging limit" and to define defective sleeves (4.17.5.e).
 - d. Revise the term "plugging limit" to "repair limit" and revise the definition of this term to allow either plugging or repair by sleeving of tubes which may become unservicable (4.17.5f)
 - e. Revise reporting requirement to include repaired tubes as well as plugged tubes (4.17.6.a and 4.17.6.b.3).
 - f. Revise the bases to permit defective tubes to be repaired or removed from service and to discuss sleeving repairs.
 - g. Revise Table 4.17-1 to permit repair or plugging defective tubes.

2. Reason For Change

These changes are proposed to permit the use of steam generator tube sleeving as an alternative to tube plugging. Sleeving is a safe and effective repair procedure which does not remove tubes from service. Babcock & Wilcox Co. has developed and qualified a mechanical sleeve design for use in tubes in once-through steam generators. This sleeve can be installed by remotely operated tooling in the end of tubes in any location in the steam generator. The use of remote tooling minimizes radiation exposure to maintenance personnel.

3. No Significant Hazards Consideration Evaluation

Sleeving has been shown to be a safe and effective method of repair for defective steam generator tubes. Several thousand tubes have been successfully sleeved in steam generators throughout the world. Attachment C, BAW-1823P, Revision 1 "Once-Through Steam Generator Mechanical Sleeve Qualification", provides a description of the analysis and testing performed to demonstrate the acceptability of the mechanical sleeve design. Mechanical strength, vibration, leak resistance, corrosion resistance, installation process control, inservice inspection techniques, and plant performance are described and shown to meet all expected NRC acceptance criteria.

The proposed revision to the Oconee Technical Specifications to permit the installation of tube sleeves involves no significant hazards considerations because operation in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

The evaluation demonstrates, based on the Babcock and Wilcox Qualification Report (Attachment C, BAW-1823P, Revision 1), that all three of the no significant hazards consideration standards, as promulgated in 10 CFR 50 § 50.92 (C), are met. Each of the three standards are discussed below.

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The FSAR conservatively evaluated a double-ended rupture of a steam generator tube. A severed tube with a mechanical sleeve installed in it has been shown by tests to have mechanical strength at least as great as that of a new tube. Thus a sleeved tube is no more likely to rupture than any other tube in generator.

A sleeved tube is functionally equivalent to an unsleeved tube except for less effective heat transfer due to the air gap and a slight pressure drop due to the primary flow constriction. Analysis has shown that if 5000 sleeves were installed in each generator the steam superheat temperature would be reduced by 7.7°F at full power and primary flow would be reduced by less than 1%. These differences would be insignificant to the performance of the steam generator in any accident situation.

- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

The only equipment affected by sleeving is the steam generator. The most severe malfunction of a steam generator is a tube rupture, and the consequences of a ruptured sleeve are no worse than the consequences of a ruptured tube. Sleeving does not increase the probability of steam generator failure because the sleeved tube has been shown to be mechanically stronger than an unsleeved tube. Thus a steam generator with sleeved tubes would perform in the same manner as one without sleeved tubes, and there is no risk of a new or different accident.

- (3) Involve a significant reduction in a margin of safety.

The integrity of steam generator tubes is enhanced by the installation of sleeves due to the increased vibration stability margin and the ability to bridge over imperfections and degradations. Thus the margin of safety is not reduced.

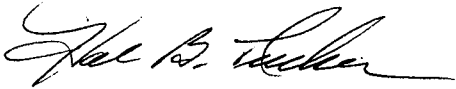
The purposed change to the Technical Specifications involves no significant hazards considerations. Therefore NRC approval is requested to permit sleeving any degraded tubes in the Oconee steam generators.

4. Schedule for Implementation

It is requested that NRC review of the proposed Technical Specification revision be scheduled for completion prior to April 1, 1986. This would permit the use of steam generator tube sleeve repairs during the upcoming 1986 Unit 1 refueling outage if necessary.

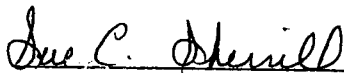
Mr. Harold R. Denton, Director
January 16, 1986
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HAL B. TUCKER, being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this request for amendment of the Oconee Nuclear Station Technical Specifications, Appendix A to Facility Operating Licenses 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.



Hal B. Tucker, Vice President

Subscribed and sworn to before me this 16th day of January, 1986.



Notary Public

My Commission Expires:

September 20, 1989