Duke Power
A Duke Energy Company

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September 12, 2000

U. S. Nuclear Regulatory Commission
Washington D. C. 20555-0001

ATTENTION: Document Control Desk

Subject: Duke Energy Corporation
Oconee Nuclear Station, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
License Amendment Request for Technical Specifications 5.5.10e.6, Steam Generator Tube Surveillance Program (TSCR 2000-07)

Pursuant to 10CFR50.90, Duke Energy Corporation is hereby submitting a license amendment request (LAR) applicable to Oconee Technical Specifications (TS) 5.5.10, item e.6. This LAR changes the requirements for the reroll repair process used on the Oconee Steam Generator (SG) tubes. This LAR: 1) removes the restriction on lower tube sheet area rerolling, 2) removes the limitation of only one reroll per SG tube, 3) eliminates the requirement that the reroll be one inch in length, and 4) changes the revision number for Topical Report, BAW-2303P, August 2000, *OTSG Repair Roll Qualification Report*, from Revision 3 to Revision 4. This topical report is referenced in Oconee TS 5.5.10, item e.6, and it is also included within this LAR submittal package for NRC review and approval.

The B&W Owners Group (B&WOG) has developed two documents for NRC review and approval that support, and must be coordinated with, the TS change proposed within this LAR. These documents are:

1) Topical Report BAW-2374, July 2000, *Justification for Not Including Postulated Breaks in Large-Bore Reactor Coolant System Piping in the Licensing Basis for Existing and Replacement Once-Through Steam Generators*, was submitted to the NRC for review and approval on a generic basis by B&WOG letter to the NRC dated July 7,

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APO1

2000. This topical report addresses the exclusion of Large Break Loss of Coolant Accident (LBLOCA) considerations from the design criteria for existing and replacement Once Through Steam Generators (OTSGs). This topical report is applicable to the LBLOCA issue as it applies to the Oconee Steam Generators (SG). Following NRC approval of this topical report, Duke will revise the Oconee Updated Final Safety Analysis Report (UFSAR) to include this topical report in the Oconee licensing basis and thereby resolve this issue for Oconee. This UFSAR revision will be performed pursuant to 10CFR50.71(e).

2) Topical Report BAW-2303P, August 2000, Revision 4 is hereby being submitted to the NRC for review and approval within this Duke LAR submittal package. This topical report describes the rerolling repair process used to repair SG tubes in the Oconee Units 1, 2, and 3 OTSGs and addresses the consideration of Main Steam Line Break (MSLB) and Small Break LOCA (SBLOCA) in the design criteria of OTSGs.

   As noted above, Topical Report BAW-2303P, Revision 4, addresses the limiting event for reroll repair process design criteria for OTSGs. The limiting event for the Oconee OTSGs is a MSLB.

This LAR relies upon NRC approval of these two topical reports to support Oconee's implementation of the TS change proposed herein.

Based upon the current End-of-cycle 19 Outage schedule for Oconee Unit 1, Duke is requesting NRC review and approval of this LAR by December 1, 2000. This approval date is requested such that the repair techniques addressed by BAW-2303P, Revision 4 may be used during this upcoming Oconee Unit 1 outage. Implementation of the changes proposed in this LAR at Oconee will preclude the need to plug numerous tubes in the Unit 1 SGs prior to their scheduled replacement in 2003. It has been determined that the NRC's standard 30-day implementation grace period will be adequate for this LAR.

The contents of this LAR submittal package are:

Attachment 1 provides a marked copy of the existing Oconee Units 1, 2, and 3 TS. This marked page shows the proposed changes.

Attachment 2 provides the reprinted Oconee Units 1, 2, and 3 TS page.

Attachment 3 provides a Description of the Proposed Changes and Technical Justification for the proposed change.

Pursuant to 10CFR50.92, Attachment 4 documents the determination that this LAR contains No Significant Hazards Consideration.

Pursuant to 10CFR51.22(c)(9), Attachment 5 provides a basis for the categorical exclusion from performing an Environmental Assessment/Impact Statement.

Attachment 6 provides Topical Report, BAW-2303P, *OTSG Repair Roll Qualification Report*, Revision 4 and an affidavit. 15 copies of the proprietary version of this topical report are provided.

Implementation of this LAR in the Facility Operating Licenses and Technical Specifications will impact the Oconee Updated Final Safety Analysis Report (UFSAR). Permanent changes to the UFSAR will be made in accordance with 10CFR50.71(e).

In accordance with Duke administrative procedures and the Quality Assurance Program Topical Report, the change contained in this LAR has been reviewed and approved by the Oconee Plant Operations Review Committee and the Duke Corporate Nuclear Safety Review Board.

Pursuant to 10CFR50.91, a copy of this LAR is being sent to the State of South Carolina Department of Health and Environmental Control for their review and, as appropriate, consultation with the NRC Staff.

This LAR submittal package contains a topical report in Attachment 6 which is proprietary to Framatome Technologies, Inc. The information which is proprietary is clearly marked as proprietary. An affidavit from Framatome Technologies, Inc. is included in Attachment 6. This affidavit sets forth the basis on which the information may be withheld from public disclosure by the NRC pursuant to 10CFR2.790. Accordingly, Duke requests that the report contained in Attachment 6 be withheld from public disclosure. In accordance with the guidance contained in NUREG-0390, fifteen (15) copies of the proprietary version of this topical report are included. A non-proprietary version of the report will be submitted at a later date.

Inquiries on this matter should be directed to J. S. Warren at (704) 382-4986.

Very truly yours,

W. R. McCollum, Jr.

Attachments

xc w/Attachments:

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xc w/out Attachment 6:

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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: SEPTEMBER 12, 2000
Date

Notary Public: Robert C. Douglas

My Commission Expires: AUGUST 13, 2009
Date

SEAL

Attachment 1

Oconee Units 1, 2, and 3 Technical Specifications

Marked Copy

Attachment 2

Oconee Units 1, 2, and 3 Technical Specifications

Reprinted Pages

Remove	Insert
5.0-18	5.0-18

5.5 Programs and Manuals

5.5.10 Steam Generator (SG) Tube Surveillance Program (continued)

3. Degraded Tube means a tube or a sleeve containing imperfections ≥ 20% of the nominal wall thickness caused by degradation.

4. % Degradation means the percentage of the tube or sleeve wall thickness affected or removed by degradation.

5. Defect means an imperfection of such severity that it exceeds the repair limit. A tube or sleeve containing a defect is defective.

6. Repair Limit means the imperfection depth beyond which the tube shall be either removed from service by plugging or repaired by sleeving or rerolling because it may become unserviceable prior to the next inspection; it is equal to 40% of the nominal tube or sleeve wall thickness. Axial tube imperfections of any depth observed between the primary side surface of the tube sheet clad and the end of the tube are excluded from this repair limit.

   The Babcock and Wilcox process (or method) equivalent to the method described in report, BAW-1823P, Revision 1 will be used for sleeving repairs.

   The new roll area must be free of degradation in order for the repair to be considered acceptable. The rerolling process used by Oconee is described in the Topical Report, BAW-2303P, Revision 4.

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 5.5.10.d.

8. Tube Inspection means an inspection of the steam generator tube from the point of entry completely to the point of exit. The degraded tube above the new roll area can be excluded from future periodic inspection requirements because it is no longer part of the pressure boundary once the repair roll is installed.

Attachment 3

Description of Proposed Changes and Technical Justification

DESCRIPTION OF PROPOSED CHANGES

Introduction

Oconee Technical Specifications (TS) 5.5.10, item e.6, is being revised to change the requirements for the reroll repair process used on the Oconee Steam Generator (SG) tubes. This license amendment request (LAR): 1) removes the restriction on lower tube sheet area rerolling, 2) removes the limitation of only one reroll per SG tube, 3) eliminates the requirement that the reroll be one inch in length, and 4) changes the revision number for Topical Report, BAW-2303P, August 2000, *OTSG Repair Roll Qualification Report*, from Revision 3 to Revision 4. This topical report is referenced in Oconee TS 5.5.10, item e.6. The proposed changes are shown on the marked-up TS Page 5.0-18 provided in Attachment 1.

Background

Topical Report BAW-2303, Revision 3 is the current document that describes the rerolling repair process used to repair defective Oconee Steam Generator (SG) tubes located in the upper tubesheet area. This topical report was approved by the NRC in November 1997. The original analysis in BAW-2303 assumed no joint slippage as the design basis for rerolls.

Since the approval of BAW-2303, Revision 3, the Three Mile Island Unit 1 Plant identified a concern that a Small Break Loss of Coolant Accident (SBLOCA) may actually generate the most limiting SG tube loads under certain conditions. Consequently, the B&W Owners Group (B&WOG) initiated a project, Preliminary Safety Concern (PSC) 2-98, to fully analyze the effects of Main Steam Line Break (MSLB) and SBLOCA on tube stresses and tube hole dilations. In response to the B&WOG PSC 2-98 Project, Framatome Technologies, Inc. (FTI) determined the limiting event for Oconee SG tube loads remained the MSLB. FTI calculated an exclusion zone larger than the original MSLB-based exclusion zone which maintains the original design criterion of no tube slippage.

Attachment 3

Description of Proposed Changes and Technical Justification

FTI performed testing to: 1) measure the loads at which tube slippage would occur, 2) measure leakage for reroll joints that did not slip, and 3) measure leakage if tube slippage did occur. This testing was completed in August 2000 and FTI proceeded to complete a revised reroll topical report which is BAW-2303P, Revision 4 which would allow tube joint slippage as part of the design basis. BAW-2303P, Revision 4 establishes the exclusion zone for rerolls based upon the FTI testing. BAW-2303P, Revision 4 is also included within this LAR submittal package for NRC review and approval. The changes proposed in this LAR incorporate BAW-2303P, Revision 4 into Oconee TS 5.5.10, item e.6.

TECHNICAL JUSTIFICATION FOR THE PROPOSED CHANGES

The technical justification for the changes proposed in this LAR is discussed in the subsequent paragraphs.

The technical basis for this LAR, Topical Report BAW-2303P, Revision 4, is also being provided for NRC review and approval. Duke has reviewed Revision 4 and confirms the assumptions and conclusions contained in this document are consistent with the licensing basis for the three Oconee units, except for one parameter. Although the topical report states that the Oconee SG maximum tensile tube load is 2870 lbf, this tube load is not the current licensing basis tensile load. However, this matter has been addressed in a previous LAR (TSCR 1999-01, dated April 26, 1999 and supplemented on May 15, 2000, July 26, 2000, and August 23, 2000) which would revise the Oconee licensing basis maximum tensile tube load to 2870 lbf. TSCR 1999-01 is pending NRC approval.

BAW-2303P, Revision 4 covers the issues of reroll optimization and the implications of MSLB and SBLOCA design consideration on OTSGs. Due to the uncertainties associated with the rerolling repair process, earlier this year Duke suspended use of this process at Oconee. As documented by Duke letter to the NRC dated May 4, 2000, effective with the Oconee Unit 3 End-of-cycle 18 Outage, which began on April 13, 2000, no additional rerolls have

been performed on any of the Oconee SGs. This decision was made pending the generic resolution of the reroll and MSLB/SBLOCA/Large Break LOCA (LBLOCA) issues. On approval of this LAR, the commitment documented in Duke's May 4, 2000 letter to the NRC will no longer remain in effect.

Approval of the FTI LBLOCA risk-informed topical report is also needed in conjunction with the approval and issuance of this LAR. This is because BAW-2303P, Revision 4 does not consider LBLOCA. The LBLOCA issue was excluded as a result of the examination in Topical Report BAW-2374, July 2000, *Justification for Not Including Postulated Breaks in Large-Bore Reactor Coolant System Piping in the Licensing Basis for Existing and Replacement Once-Through Steam Generators*, previously submitted separately for review and approval by B&WOG letter to the NRC dated July 7, 2000. Approval of the LBLOCA topical report does not result in any changes to the Oconee TS and will be implemented at Oconee pursuant to 10CFR50.59 and 10CFR50.71(e).

Schedule

Duke is requesting approval of this LAR by December 1, 2000 in order to allow implementation of the associated changes for use during the upcoming Oconee Unit 1 End-of-cycle 19 Outage.

Assessment and Review

Duke has evaluated the significant hazards considerations associated with this LAR, as required by 10CFR50.92, and has determined that there are none (see Attachment 4 for a complete discussion). Duke has also determined that the proposed amendment is eligible for categorical exclusion as set forth in 10CFR 51.22(c)(9) (see Attachment 5). Therefore, pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed changes. The Oconee Plant Operations Review Committee and the Duke Corporate Nuclear Safety Review Board have reviewed this LAR and have concurred that operation with the proposed changes will not result in an undue risk to the health and safety of the public.

Attachment 3

Description of Proposed Changes and Technical Justification

Conclusion

Implementation of the changes proposed in this LAR will provide greater assurance of SG tube integrity than that offered by the previous reroll topical report. This is because BAW-2303P, Revision 4 establishes updated reroll repair exclusion zones more accurately based upon limiting tube loads resulting from a postulated SBLOCA or MSLB. The changes contained in this LAR are also dependent upon a risk-informed topical report that documents the elimination of LBLOCA from consideration in the design criteria of OTSGs.

Attachment 4

No Significant Hazards Consideration Determination

Duke Energy Corporation (Duke) has made the determination that this amendment request involves a No Significant Hazards Consideration by applying the standards established by NRC regulations in 10CFR50.92. This ensures operation of the facility in accordance with the proposed amendment will not:

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

   No. The proposed change to the Technical Specifications incorporates Revision 4 of Topical Report BAW-2303P, *OTSG Repair Roll Qualification Report*. This document is also being submitted for NRC review and approval. This revision addresses, and is consistent with, the conclusions of all applicable Oconee licensing basis analyses and ensures that previously evaluated accidents are bounding. All the established acceptance criteria for the accidents analyzed in the Oconee licensing basis continue to be met. Therefore, no existing accident probabilities or consequences will be impacted.

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

   No. Revision 4 of BAW-2303P addresses limiting events for steam generator tube reroll repairs. These events include Main Steam Line Break, the Small Break Loss of Coolant Accident, and other transients on B&W Once-Through Steam Generators. For Oconee, the Main Steam Line Break is the limiting event. This revised topical report confirms the acceptability of the reroll repair techniques previously used at Oconee. As a result, no new failure modes are being created. BAW-2303P, as submitted for NRC review and approval, does not create the possibility of a new or different kind of accident.

3. Involve a significant reduction in a margin of safety?

   No. Margin of safety is related to the confidence in the ability of the fission product barriers to perform their design functions during and following an accident

situation. These barriers include the fuel cladding, the reactor coolant system, and the containment system. As part of the reactor coolant system pressure boundary, the steam generator tubes are unique in that they are also relied upon as a heat transfer surface between the primary and secondary systems, such that residual heat can be removed from the primary system. In addition, the steam generator tubes also isolate the radioactive fission products in the primary coolant from the secondary system. Finally, the steam generator tubes may be relied upon to maintain their integrity under conditions resulting from core damage severe accidents consistent with the containment objectives of preventing uncontrolled fission product release. The functions of the steam generator tubes will not be significantly affected by the changes proposed in this license amendment request. Implementation of BAW-2303P, Revision 4, as submitted for NRC review and approval, at Oconee will result in assurance that parameters affecting the integrity of the steam generator tubes continue to meet applicable safety analyses and industry codes and standards. Therefore, no safety margin will be significantly reduced.

Conclusion

Based upon the preceding evaluation, performed pursuant to 10CFR50.92, Duke has concluded that implementation of the Technical Specifications change, as proposed in this license amendment request for Oconee Nuclear Station, will not involve a significant hazards consideration.

Attachment 5

Environmental Assessment/Impact Statement

Duke Energy Corporation has determined that operation at Oconee Nuclear Station with the proposed amendment in place does not involve a significant hazards consideration (as detailed in Attachment 4). Additionally, operation with the proposed amendment will not result in any significant increases in the amounts of any effluents that may be released offsite, nor will there be any significant increases in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is eligible for categorical exclusion as set forth in 10CFR51.22(c)(9). Consequently, pursuant to 10CFR 51.22(b), it is determined that no environmental impact statement or environmental assessment is needed in connection with the approval of the change proposed within this license amendment request.

Attachment 6

Topical Report BAW-2303P, Revision 4, August 2000
Proprietary Version and Affidavit

AFFIDAVIT OF JOSEPH J. KELLY

A. My name is Joseph J. Kelly. I am Manager of B&W Owners Group Services for Framatome Technologies, Inc. (FTI), and as such, I am authorized to execute this Affidavit.

B. I am familiar with the criteria applied by FTI to determine whether certain information of FTI is proprietary and I am familiar with the procedures established within FTI to ensure the proper application of these criteria.

C. In determining whether an FTI document is to be classified as proprietary information, an initial determination is made by the Unit Manager, who is responsible for originating the document, as to whether it falls within the criteria set forth in Paragraph D hereof. If the information falls within any one of these criteria, it is classified as proprietary by the originating Unit Manager. This initial determination is reviewed by the cognizant Section Manager. If the document is designated as proprietary, it is reviewed again by me to assure that the regulatory requirements of 10 CFR Section 2.790 are met.

D. The following information is provided to demonstrate that the provisions of 10 CFR Section 2.790 of the Commission's regulations have been considered:

(i) The information has been held in confidence by FTI. Copies of the document are clearly identified as proprietary. In addition, whenever FTI transmits the information to a customer, customer's agent, potential customer or regulatory agency, the transmittal requests the recipient to hold the information as proprietary. Also, in order to strictly limit any potential or actual customer's use of proprietary information, the substance of the following provision is included in all agreements entered into by FTI, and an equivalent version of the proprietary provision is included in all of FTI's proposals:

"Any proprietary information concerning Company's or its Supplier's products or manufacturing processes which is so designated by Company or its Suppliers and disclosed to Purchaser incident to the performance of such contract shall remain the property of Company or its Suppliers and is disclosed in confidence, and Purchaser shall not publish or otherwise disclose it to others without the written approval of Company, and no rights, implied or otherwise, are granted to produce or have produced any products or to practice or cause to be practiced any manufacturing processes covered thereby.

Notwithstanding the above, Purchaser may provide the NRC or any other regulatory agency with any such proprietary information as the NRC or such other agency may require; provided, however, that Purchaser shall first give Company written notice of such proposed disclosure and Company shall have the right to amend such proprietary information so as to make it non-proprietary. In the event that Company cannot amend such proprietary information, Purchaser shall prior to disclosing such information, use its best efforts to obtain a commitment from NRC or such other agency to have such information withheld from public inspection.

Company shall be given the right to participate in pursuit of such confidential treatment."

(ii) The following criteria are customarily applied by FTI in a rational decision process to determine whether the information should be classified as proprietary. Information may be classified as proprietary if one or more of the following criteria are met:

a. Information reveals cost or price information, commercial strategies, production capabilities, or budget levels of FTI, its customers or suppliers.

b. The information reveals data or material concerning FTI research or development plans or programs of present or potential competitive advantage to FTI.

c. The use of the information by a competitor would decrease his expenditures, in time or resources, in designing, producing or marketing a similar product.

d. The information consists of test data or other similar data concerning a process, method or component, the application of which results in a competitive advantage to FTI.

e. The information reveals special aspects of a process, method, component or the like, the exclusive use of which results in a competitive advantage to FTI.

f. The information contains ideas for which patent protection may be sought.

The document(s) listed on Exhibit "A", which is attached hereto and made a part hereof, has been evaluated in accordance with normal FTI procedures with respect to classification and has been found to contain information which falls within one or more of the criteria enumerated above. Exhibit "B", which is attached hereto and made a part hereof, specifically identifies the criteria applicable to the document(s) listed in Exhibit "A".

(iii) The document(s) listed in Exhibit "A", which has been made available to the United States Nuclear Regulatory Commission was made available in confidence with a request that the document(s) and the information contained therein be withheld from public disclosure.

(iv) The information is not available in the open literature and to the best of our knowledge is not known by Combustion Engineering, EXXON, General Electric, Westinghouse or other current or potential domestic or foreign competitors of FTI.

(v) Specific information with regard to whether public disclosure of the information is likely to cause harm to the competitive position of FTI, taking into account the value of the information to FTI; the amount of effort or money expended by FTI developing the information; and the ease or difficulty with which the information could be properly duplicated by others is given in Exhibit "B".

E. I have personally reviewed the document(s) listed on Exhibit "A" and have found that it is considered proprietary by FTI because it contains information which falls within one or more of the criteria enumerated in Paragraph D, and it is information which is customarily held in confidence and protected as proprietary information by FTI. This report comprises

AFFIDAVIT OF JOSEPH J. KELLY (Cont'd.)

information utilized by FTI in its business which afford FTI an opportunity to obtain a competitive advantage over those who may wish to know or use the information contained in the document(s).

JOSEPH J. KELLY

State of Virginia)
) SS. Lynchburg
City of Lynchburg)

Joseph J. Kelly, being duly sworn, on his oath deposes and says that he is the person who subscribed his name to the foregoing statement, and that the matters and facts set forth in the statement are true.

JOSEPH J. KELLY

Subscribed and sworn before me
this 11th day of September 2000.

I was commissioned a notary public as Brenda C. Cardona,

Brenda C. Maddox
Notary Public in and for the City
of Lynchburg, State of Virginia.

My Commission Expires July 31, 2003

EXHIBITS A & B

EXHIBIT A

The B&W Owners Group Steam Generator Committee Topical Report BAW-2303P, Rev. 4, "OTSG Repair Roll Qualification Report," August 2000.

EXHIBIT B

The above listed document contains information which is considered Proprietary in accordance with Criteria b, c, d and e of the attached affidavit.