

October 27, 1999

Mr. William R. McCollum, Jr.
Vice President, Oconee Nuclear Site
Duke Energy Corporation (Duke)
P. O. Box 1439
Seneca, SC 29679

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SUBJECT: RENEWAL APPLICANT ACTION ITEMS FOR BAW-2248, "DEMONSTRATION OF THE MANAGEMENT OF AGING EFFECTS FOR THE REACTOR VESSEL INTERNALS"

Dear Mr. McCollum:

The Nuclear Regulatory Commission will not be able to issue the final safety evaluation (FSE) for BAW-2248 until mid-November because of scheduler conflicts and workload priorities. In order to minimize any impacts on the review of the Oconee license renewal application, the staff has enclosed the proposed renewal applicant action items for BAW-2248.

As discussed with Duke in a September 29, 1999, meeting, the open items that existed in the draft safety evaluation for BAW-2248 have either been closed based on supplemental information provided by the Babcock and Wilcox Owners Group or have been turned into renewal applicant action items. It is hoped that by providing you with the renewal applicant action items before the FSE is issued you will be able to assess each action item to determine what impact, if any, they will have on the Oconee license renewal application.

If you have any questions regarding this issue please contact me at 301-415-1183, or the project manager for the Oconee license renewal application, Mr. Sebrosky, at 301-415-1132.

Sincerely,

Original Signed By

Christopher I. Grimes, Chief
License Renewal and Standardization Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270,
and 50-287

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DATE	10/27/99	10/27/99	10/27/99	10/27/99	10/27/99

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As discussed with Duke in a September 29, 1999, meeting, the open items that existed in the draft safety evaluation for BAW-2248 have either been closed based on supplemental information provided by the Babcock and Wilcox Owners Group or have been turned into renewal applicant action items. It is hoped that by providing you with the renewal applicant action items before the FSE is issued you will be able to assess each action item to determine what impact, if any, they will have on the Oconee license renewal application.

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Renewal Applicant Action Items for BAW-2248

The following are license renewal applicant action items to be addressed in the plant-specific license renewal application when incorporating Babcock and Wilcox Owners Group (B&WOG) topical report BAW-2248 in a renewal application:

- (1) The license renewal applicant is to verify that the critical parameters for the plant are bounded by the topical report. Further, the renewal applicant is to commit to programs described as necessary in the topical report to manage the effects of aging during the period of extended operation on the functionality of the reactor vessel components. Applicants for license renewal will be responsible for describing any such commitments and identifying the appropriate regulatory control. Any deviations from the aging management programs within this topical report described as necessary to manage the effects of aging during the period of extended operation and to maintain the functionality of the reactor vessel internal components or other information presented in the report, such as materials of construction, will have to be identified by the renewal applicant and evaluated on a plant-specific basis in accordance with 10 CFR 54.21(a)(3) and (c)(1).
- (2) A summary description of the programs and evaluation of time-limited aging analyses (TLAAs) is to be provided in the license renewal final safety analysis report (FSAR) supplement in accordance with 10 CFR 54.21(d).
- (3) License renewal applicants must identify whether the intended function of the reactor vessel internals (RVI) is to provide shielding for the reactor pressure vessel (RPV). If not an intended function, the license renewal applicant should provide justification for that conclusion. Should a license renewal applicant determine that the RVI's intended function is to provide shielding for the RPV, then the items that support this intended function, such as, the thermal shield and the thermal shield upper restraint assemblies, must be identified and reviewed in accordance with 10 CFR 54.21(a)(3).
- (4) Applicants must commit to participation in the B&WOG reactor vessel internal aging management program (RVIAMP), and any other industry programs as appropriate, to continue the investigation of potential aging effects for RVI components and to establish monitoring and inspection programs for RVI components. The applicant shall provide to the NRC written reports on the status of the RVIAMP on approximately an annual basis, commencing within one year of the issuance of the renewed license.
- (5) The applicant must describe plans for augmented inspection of RVI components for management of stress corrosion cracking/ irradiation-assisted stress corrosion cracking (SCC/IASCC) and loss of fracture toughness (neutron embrittlement) of the RVI components. This description should specify the sample size, the examination method, acceptance criteria and timing of the inspection, or the process to be used to specify these items.
- (6) According to the B&WOG, one of its objectives in BAW-2248 states, "It is intended that NRC review and approval of this report will allow that no further review of the matters described herein will be needed when the report is incorporated by reference in a plant specific renewal license application." The license renewal applicant must address matters not described in the report, such as the baffle-former bolt cracking issues addressed in Section 3.3.1 of this SE pertaining to Refs. 1 and 2, with regard to the industry issues task

Enclosure

group (ITG) project, initiated after April 23, 1998, to address generic RVI materials issues. The B&WOG indicates this industry effort resulted in subsequent changes in the B&WOG RVI aging management program. The ITG is currently addressing the issues of cracking of baffle bolts. The B&WOG indicates that the changes in the aging management program now requires the applicants to be responsible for using the industry ITG project developed information to determine the necessary steps (e.g., inspection, operability determinations, and replacements) to manage the applicable baffle bolt aging effects.

- (7) The applicant must describe plans for augmented inspection of RVI components for management of loss of fracture toughness due to thermal aging embrittlement of the RVI components. This description should specify the sample size, the examination method, acceptance criteria and timing of the inspection, or the process to be used to specify these items.
- (8) The applicant must describe plans for management of stress relaxation for bolted closures of the RVI. This description should specify the critical locations, and monitoring and inspection techniques, and timing of the inspection, or the process to be used to specify these items.
- (9) The applicant must describe plans for augmented inspection of RVI components for management of change of dimension (void swelling) of the RVI components. This description should specify the sample size, the examination method, acceptance criteria and timing of the inspection, or the process to be used to specify these items.
- (10) If flaws have been detected in the reactor vessel internals, a TLAAs plant-specific evaluation must be performed to determine the flaw growth acceptance in accordance with the ASME B&PV Code, Section XI, inservice inspection requirements.
- (11) The applicant must address the plant-specific plans to continue monitoring and tracking design transient occurrences.
- (12) Plant-specific analysis is required to demonstrate that, under loss-of-coolant-accident (LOCA) and seismic loading, the internals have adequate ductility to absorb local strain at the regions of maximum stress intensity and that irradiation accumulated at the expiration of the renewal license will not adversely affect deformation limits. The RVIAMP must develop data to demonstrate that the internals will meet the deformation limits at the expiration of the renewal license.

References

1. Letter from William R. Gray (B&WOG) to David B. Mathews (NRC), dated February 18, 1999, "B&WOG Generic License Renewal Program Topical Report BAW-2248, "Demonstration of the Management of Aging Effects for the Reactor Vessel Internals" (RAIs 1 through 14 from December 4, 1998)."
2. Letter from Raj K. Anand (NRC), to David J. Firth (B&WOG), December 2, 1998, "Request for Additional Information Regarding the Babcock & Wilcox Owners Group Generic License Renewal Program Topical Report Entitled Demonstration of the Management of Aging Effects for the Reactor Vessel Internals, BAW-2248, July 1997."