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SUBJECT: Forwards addl info in response to 860421 meeting re results of ultrasonic testing (UT) of reactor vessel shell-to-flange weld completed during Cycle 9. Development of enhanced UT techniques & discriminatory methods intended.

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April 24, 1986

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

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

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

Dear Sir:

Ultrasonic testing (UT) of the Oconee Unit 1 Reactor Vessel Shell-to-flange weld was recently completed during the end-of-cycle 9 Refueling outage. The results of the UT exam found a total of twenty-two (22) indications, nine (9) were determined to be acceptable per IWB-3510-1 of Section XI of the ASME Code and the other thirteen (13) indications were found to be acceptable per IWB-3600.

On April 8, 1986 a meeting was held with the NRC in Atlanta to discuss these indications and Duke's evaluation of acceptability. As a result of this meeting, the NRC requested additional information. A second meeting was held on April 21, 1986 with the NRC in Atlanta to discuss the additional information. Attachment A to this letter provides a copy of the slides utilized by Duke during the April 21, 1986 meeting.

As a result of the April 21, 1986 discussions, the NRC requested further information. Attached, please find the additional requested information. Briefly the attachments provides the following subject areas:

Attachment B - Stress components and method of determination for LEFM Analysis

Attachment C - Justification for Unanalyzed Transients

Attachment D - Summary of indication dimensions

Attachment E - Postulated Service Induced Growth

As indicated during the meetings, Duke has concluded that the indications found during the Oconee Unit 1 1986 Inservice Inspection and Evaluation of the reactor vessel flange-to-shell weld does not impact the integrity of this weld, thus the reactor vessel is fit for continued service. Principally, this conclusion is based on the facts that; 1) the technique utilized in sizing the indications was performed in accordance with ASME Code

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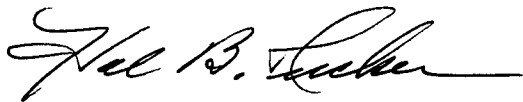
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Harold R. Denton  
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requirements and provides conservative results; and 2) based upon the results of the Fracture Mechanics Analysis, which was performed in accordance with ASME Code Requirements, indicated that there exists a considerable amount of margin prior to exceeding ASME Code Limitations for Acceptability. More detailed information and data in support of this conclusion are provided in the attachments (Attachments A through E).

In a parallel effort Duke has initiated a testing program at the Babcock & Wilcox Mt. Vernon facility. The objectives of this test program is outlined within Attachment A. Briefly, it is Duke's intent to develop enhanced UT techniques and discriminatory methods to be used during future inspections. These enhanced techniques and discriminatory methods will assist Duke in determining if these twenty-two (22) indications are Geometric Reflectors.

Very truly yours,



Hal B. Tucker

PFG/jgm

Attachments

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