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SUBJECT: Responds to Generic Ltr 88-11, "NRC Position on Radiation Embrittlement of Reactor Vessel Matls & Impact On...." 3

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January 31, 1989

U. S. Nuclear Regulatory Commission
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Washington, D. C. 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Response to Generic Letter 88-11

Gentlemen:

By letter dated July 12, 1988, NRC issued Generic Letter 88-11, "NRC Position on Radiation Embrittlement of Reactor Vessel Materials and its Impact on Plant Operations." Generic Letter 88-11 requires that within 180 days of the effective date of Reg. Guide 1.99, Revision 2, licensees should submit the results of their technical analysis and a proposed schedule for whatever action they propose to take. By letter dated November 21, 1988 I submitted a preliminary response for Oconee Nuclear Station. Within the letter, I stated that the present 15 EFPY pressure-temperature limits were being analyzed to determine the impact of Reg. Guide 1.99, Rev. 2, and that I anticipated a response addressing the concerns of Generic Letter 88-11 to be provided by January 31, 1988. This letter is the response for Oconee Nuclear Station.

The reanalysis of the present Technical Specification 15 EFPY Pressure-temperature (P/T) limits using the methodology of Reg. Guide 1.99, Rev. 2 has been completed. As anticipated, the major impact was on the heatup evaluation as a result of the conservative methods of Reg. Guide 1.99, Rev. 2 damage attenuation through the vessel wall. The results show more restrictive heatup P/T curves than the cooldown P/T curves, particularly for temperatures below 280 degrees F. Although the 15 EFPY P/T curves based on Reg. Guide 1.99, Rev. 2 are more restrictive, sufficient margins exist to allow the heat up operations for all three Oconee Units. As of November 1988, Units 1, 2, and 3 had operated for approximately 10.5, 10.0 and 9.7 EFPYs, respectively. Therefore, the Oconee vessels have not received fluences equivalent to 15 EFPY. In addition, to further improve the window of maneuverability during the heatup operation, a procedural change for RC pump startup configuration during the heatup operations is planned. The final P/T curves which will include improvements due to procedural changes for RC pump operation during heatup are not expected to be more restrictive than the present technical specification curves based on Reg. Guide 1.99, Rev. 1. We intend to submit the 15 EFPY P/T curves as part of a Technical Specification amendment request by August 16, 1989.

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The current pressure-temperature limit curves in Oconee Nuclear Station Technical Specifications were generated based on the methodology required by Reg. Guide 1.99, Revision 1 and reactor vessel surveillance program capsule data for 15 EFPY (Amendments Nos. 119/119/116). At present time, all Oconee units have approximately 6 calendar years before these units accumulate fluences equivalent to 15 EFPY. Therefore, the present P/T curves will remain conservative for the operation of the Oconee units until the proposed Technical Specifications to be submitted on August 16, 1989 are approved.

In addition, by letter dated October 31, 1988, I submitted the results of surveillance capsules OCI-C and OCII-E for Oconee Units 1 and 2, respectively. These capsule results, which are based on Reg. Guide 1.99, Rev. 2, projected a generally lower fluence for vessel inside surface at the end of 32 EFPY compared to the previous capsules' results. Furthermore, the shift in RT_{NDT} for both forging and weld materials calculated for 21 EFPY was determined to be conservative with respect to prediction methodology of Reg. Guide 199, Rev. 2. Also, the capsule analyses demonstrated that the most limiting weld metal has adequate irradiated toughness properties to assure adequate margins of safety in accordance with the requirements of 10 CFR 50, Appendix G, for fluence values equivalent to 32 EFPY operation of the Oconee reactor vessels.

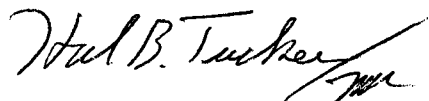
The low temperature overpressure protection (LTOP) envelope for operation is expected to be impacted by the methodology imposed by the use of RG 1.99, Rev. 2. Appropriate changes to LTOP setpoints, if necessary, will be proposed along with the new P/T curves by August 16, 1989. In addition, we are considering participation in a B&WOG generic program to address the LTOP issue based on other approaches as alternative to Appendix G LTOP setpoints as proposed in GL 88-11. Details of this program are not available at this time, however, the results of this program will be generically submitted when they become available.

In regards to LTOP requirements, the NRC inspector at Oconee has recently identified an unresolved item, URI-269, 270, 287/88-34-04, concerning what appears to be an area of conflict between the LTOP requirements as set forth in the technical specifications approved by the NRC and the corresponding NRC SER (Amendments Nos. 156/156/153). The SER states that the worst overpressurization event at Oconee with a failed closed power operated relief valve (PORV) is an inadvertent actuation of the high pressure injection (HPI) system and that Duke Power had agreed to incorporate technical specifications which would require that four HPI motor operated valves to be locked out in the closed position prior to cooling down below 325 degrees F. The approved technical specification identified this as an option and not a requirement. This is not considered to be a significant safety issue by the NRC at this time since operating procedures address operation of the LTOP protection. However, Duke will prepare appropriate proposed technical specifications to address this discrepancy and will be submitted by August 16, 1989 along with the new P/T curves based on Reg. Guide 1.99, Rev. 2.

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Finally, we have completed a check of the RT^{PTS} as suggested by NRC in GL 88-11 to determine whether any of the Oconee units would exceed the PTS screening criteria if the NRC were to implement Reg. Guide 1.99, Rev. 2 in 10 CFR 50.61. The results show that all three Oconee units are still well below the screening criteria at 32 EFPY.

Very truly yours,



Hal B. Tucker

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