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SUBJECT: Application for amends to Licenses DPR-38, DPR-47 & DPR-55, changing TS re LOCA linear heat rate limit. "MK-B9 Spectrum LOCA LHR Limit Analyses for 177-Fuel Assembly Lowered Loop Plants" encl. Rept withheld.

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NOTES: *see Proposed Changes To Tech Specs*

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DUKE POWER

March 3, 1992

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287  
LOCA Linear Heat Rate Limits

References: January 14, 1991 letter from M. S. Tuckman (Duke) to NRC  
Document Control Desk.

September 3, 1991 letter from J. H. Taylor (B&W) to Dr. Thomas  
Murley, Director, Office of Nuclear Reactor Regulations.

October 23, 1991 letter from M. S. Tuckman (Duke) to NRC  
Document Control Desk.

September 16, 1991 letter from L. A. Wiens (NRR) to M.S.  
Tuckman (DUKE).

Gentlemen:

Enclosed are changes to the bases of Oconee Technical Specifications,  
Attachment 1, which reflect changes in the LOCA linear heat rate limits. The  
technical justification for these changes is provided in Attachment 2. The  
LOCA linear heat rate limits have changed due to the following reasons:

- 1) As the result of a critical heat flux correlation error in the B&W  
LOCA Evaluation Model(EM), the LOCA linear heat rate limit at the 6  
foot elevation has changed from 16.5 kw/ft (0-1000 MWd/mtU) and 18.0  
kw/ft (after 1000 MWd/mtU) to 16.1 kw/ft for all burnups. The NRC was  
notified of this change in the referenced letter of January 14, 1991.
- 2) Beginning with Oconee unit 1 cycle 14, the Mark B9 fuel assembly  
design has been implemented at Oconee. This fuel assembly design was  
described in the O1C14 reload submittal and approved by the NRC in the  
referenced SER dated September 16, 1991. A new set of LOCA limits have  
been calculated for this advanced fuel assembly design. Attachment 3  
is a B&W report summarizing the results of the Mark B9 LOCA analysis.  
It should be noted the currently operating fuel cycles at Oconee are  
conservatively based on the Mark B8 LOCA limits given in Figure 3.5.2-  
16a of Attachment 1. Duke intends to implement the Mark B9 LOCA limits  
given in Figure 3.5.2-16b of Attachment 1 beginning with the reload

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Document Control Desk  
March 3, 1992  
Page 2 of 3

design O2C14. This analysis will commence in October of 1992. Future reload design analyses will apply the LOCA limits in Figure 3.5.2-16b to Mark B9 fuel assemblies and the LOCA limits in Figure 3.5.2.16a to Mark B8 and earlier fuel assembly designs.

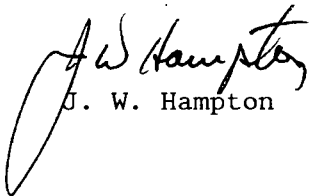
Additionally, in a January 28, 1992 meeting, a recent error in the B&W large break LOCA Evaluation Model (EM) was discussed with the NRC. B&W reported this cross flow error in the CRAFT2 code and its' impact on the peak cladding temperature (PCT) in accordance with 10 CFR50.46 to the NRC in reference 2. This flow error and the change in PCT was confirmed by Duke in reference 3. In the meeting that followed, B&W described the analysis approach used to resolve the cross flow error. The NRC agreed with B&W's assessment that adequate margin exists in the present Mark B8 LOCA linear heat rate limits to accommodate the cross flow error.

At the January 28, 1992 meeting, B&W also presented the revised LOCA linear heat rate limits associated with the Mark B9 fuel assembly. The cross flow error has been corrected in the Mark B9 LOCA limit analyses. For the Mark B8 LOCA limits, the impact of the cross flow error was explicitly analyzed for the 4 foot elevation. The adequacy of the LOCA linear heat rate limits for the remaining elevations was determined by an engineering evaluation. The CRAFT2 cross flow error will be corrected in any future analyses of these elevations.

Attachment 1 contains the revisions to the Technical Specification Bases and Attachment 2 is a technical justification for the changes. Please note that Attachment 3, BWNT Document 86-1202153-00, "MK-B9 Spectrum LOCA LHR Limit Analyses For 177-Fuel Assembly Lowered Loop Plants" is considered "Proprietary" by B&W and an affidavit from B&W will be forth coming.

Duke has performed a 10 CFR 50.59 evaluation of these changes to the bases of the Technical Specifications described in Attachment 1 and has concluded that these changes do not involve an unreviewed safety question. If any additional information is needed or if there are any questions please contact Mark E. Patrick at (803) 885-3292.

Very truly yours,

  
J. W. Hampton

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March 3, 1992  
Page 3 of 3

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