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AUTH. NAME	AUTHOR AFFILIATION
TUCKMAN, M.S.	Duke Power Co.
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DUKE POWER

April 22, 1997

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

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Numbers 50-269, -270, and -287
Use of BWU-Z Critical Heat Flux Correlation for
Mark-B11 Fuel

References

- 1) Addendum 1 to BAW-10199P-A, The BWU Critical Heat Flux Equations, Applications to the Mark B11 and Mark BW17 MSM Designs, submitted September 30, 1996.
- 2) DPC-NE-2005, Duke Power Company Thermal-Hydraulic Statistical Core Design Methodology, November 7, 1996.

A universal form Critical Heat Flux (CHF) correlation for mixing vane 15x15 fuel (denoted Mark-B11) was developed by Framatome Cogema Fuels (FCF) in mid 1996. This correlation, designated BWU-Z, was submitted to the NRC for approval by FCF in Reference 1. This version of the correlation is applicable to the Mark-B11 fuel design as described in Appendix E of Reference 1. The correlation form and coefficients are the same as for the Mark-BW17 fuel with the addition of a FB11 multiplier of 0.98. The justification for this application is described in detail in Appendix E of Reference 1. This submittal by Duke Power includes a new Appendix D to Reference 2 to justify use of the same correlation on Mark B11 fuel in the Oconee units.

The BWU-Z correlation for Mark B11 fuel used by Duke is exactly the same as the correlation described in Reference 1. As with all previous applications of CHF correlations, the correlation coding was transferred by Duke to the VIPRE-

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01 computer code and confirmed to be applicable based on the CHF test data base. Following confirmation, the statistical design limit for the BWU-Z form of the BWU correlation for Mark-B11 fuel at Oconee was calculated according to the methodology in Reference 2 (main body of the report). Both of these steps are documented in the attached Appendix D to DPC-NE-2005.

Note that the methodology contained in Reference 2 and the attached Appendix D are proprietary to Duke Power. An affidavit attesting to that fact, pursuant to 10 CFR 2.790, is attached. A non-proprietary version is also enclosed.

It is requested that review and approval of this Appendix be completed by September 30, 1997, to accommodate ongoing reload design schedules.

If there are any questions, or additional information is required, please call Scott Gewehr at (704) 382-7581.

Very truly yours,



M. S. Tuckman


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Senior Resident Inspector
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AFFIDAVIT OF M. S. TUCKMAN

1. I am Senior Vice President, Nuclear Generation Department, Duke Power Company ("Duke"), and as such have the responsibility of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear plant licensing, and am authorized to apply for its withholding on behalf of Duke.
- 2 I am making this affidavit in conformance with the provisions of 10 CFR 2.790 of the regulations of the Nuclear Regulatory Commission ("NRC") and in conjunction with Duke's application for withholding which accompanies this affidavit.
3. I have knowledge of the criteria used by Duke in designating information as proprietary or confidential.
4. Pursuant to the provisions of paragraph (b)(4) of 10 CFR 2.790, the following is furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned by Duke and has been held in confidence by Duke and its consultants.
 - (ii) The information is of a type that would customarily be held in confidence by Duke. The information consists of analysis methodology details, analysis results, supporting data, and aspects of development programs, relative to a method of analysis that provides a competitive advantage to Duke.
 - (iii) The information was transmitted to the NRC in confidence and under the provisions of 10 CFR 2.790, it is to be received in confidence by the NRC.
 - (iv) The information sought to be protected is not available in public to the best of our knowledge and belief.


M. S. Tuckman

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- (v) The proprietary information sought to be withheld in this submittal is that which is marked in the proprietary version of the report DPC-NE-2005, "Duke Power Company Thermal-Hydraulic Statistical Core Design Methodology" and supporting documentation, and omitted from the non-proprietary versions. This information enables Duke to:
- (a) Respond to Generic Letter 83-11, "Licensee Qualification for Performing Safety Analyses in Support of Licensing Actions."
 - (b) Support license amendment and Technical Specification revision requests for Babcock & Wilcox PWRs.
 - (c) Perform safety reviews per 10 CFR 50.59.
- (vi) The proprietary information sought to be withheld from public disclosure has substantial commercial value to Duke.
- (a) It allows Duke to reduce vendor and consultant expenses associated with supporting the operation and licensing of nuclear power plants.
 - (b) Duke intends to sell the information to nuclear utilities, vendors, and consultants for the purpose of supporting the operation and licensing of nuclear power plants.
 - (c) The subject information could only be duplicated by competitors at similar expense to that incurred by Duke.


M. S. Tuckman

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AFFIDAVIT OF M. S. TUCKMAN (Page 3)

5. Public disclosure of this information is likely to cause harm to Duke because it would allow competitors in the nuclear industry to benefit from the results of a significant development program without requiring a commensurate expense or allowing Duke to recoup a portion of its expenditures or benefit from the sale of the information.

M. S. Tuckman, 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.


M. S. Tuckman

Sworn to and subscribed before me this 24th day of April, 1997. Witness my hand and official seal.


Notary Public

My commission expires JAN 22, 2001.