

Mr. Ian C. Rickard, Director
 Nuclear Licensing
 ABB Combustion Engineering Nuclear Operations December 8, 1999
 Post Office Box 500
 2000 Day Hill Road
 Windsor, Connecticut 06095-0500

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING
 CENPD-387-P, "ABB CRITICAL HEAT FLUX CORRELATION FOR PWR FUEL"
 (TAC NO. MA6109)

Dear Mr. Rickard:

CENPD-387-P, "ABB Critical Heat Flux Correlation for PWR Fuel" was submitted for staff review by ABB Combustion Engineering (ABB-CE) letter LD-99-038 dated June 30, 1999. As a result of the review, the staff has determined that additional information is needed to complete the review. The information needed is detailed in the enclosure.

The enclosed request was discussed with Mr. Pagen of your staff on November 30, 1999. A mutually agreeable target date of December 13, 1999, was established for responding to the RAI. If circumstances result in the need to revise the target date, please call me at your earliest opportunity at (301) 415-1424.

Sincerely,

/s/

Jack Cushing, Project Manager, Section 2
 Project Directorate IV & Decommissioning
 Division of Licensing Project Management
 Office of Nuclear Reactor Regulation

Project No. 692

Enclosure: Request for Additional Information

cc w/encl: Mr. Charles B. Brinkman, Manager
 Washington Operations
 ABB Combustion Engineering Nuclear Power
 12300 Twinbrook Parkway, Suite 330
 Rockville, MD 20852

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in black ink, appearing to read "J. Cushing".

Jack Cushing, Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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REQUEST FOR ADDITIONAL INFORMATION

CENPD-387-P. "ABB CRITICAL HEAT FLUX CORRELATION FOR PWR FUEL"

1. In Section 1.2, page 1-2, the last paragraph states that two new correlations were developed, ABB-NV for the 14x14 and 16x16 non-mixing vane (NV) and the ABB-TV for the 14x14 Turbo mixing vane (TV) fuel.
 - a. Does this mean that there is two databases, (14x14 and 16x16 NV and the 14x14 TV)?
 - b. Is there a 16x16 Turbo mixing vane fuel database?
2. On page 3-11, the last paragraph states that "outliers" were weeded out. Does this mean that these outliers were not included in the statistical process?
3. The ABB-NV and the ABB-TV correlations were developed from steady-state data. Justify that the use of these correlations are conservative for each type of transient (power increase, flow decrease, rapid and slow depressurization, etc.) that you plan to analyze.
4. In Section 7.1.1, it is stated that "options" to the TORC and CETOP-D codes will allow TORC and CETOP-D to use the ABB-NV and/or ABB-TV critical heat flux (CHF) correlations in departure from nucleate boiling ratio (DNBR) calculations. Please state these options and justify their applicability.
5. In Section 7.2.1, it is stated that the methods described in Supplement 2-P-A of reference 18 in the June 1999 submittal remain applicable with application of the ABB-NV correlation. Please provide technical justifications in support of these claims.

Enclosure