FRAMATOMEANP

January 21, 2002
NRC:02:005

Document Control Desk
ATTN: Chief, Planning, Program and Management Support Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

BWR CHF Correlation Bounds Checking

The NRC requested clarification of the equation for the new value of enthalpy (HNEW) discussed in a letter from Framatome ANP of January 11, 2002 (NRC:02:003). Specifically, the NRC asked for an explanation of how the term 0.01 was selected.

As explained in the letter, the objective of this equation is to ensure that the enthalpy of the limiting node is never less than the lower bound enthalpy limit of the correlation. To achieve this objective, the following logic was used:

(1) A zero correction factor could have been used (instead of 0.01). Because of very slight differences in the calculation of enthalpy, it might be possible to arrive at a new enthalpy that is less than the lower limit by some small amount, such 0.002, for example.

(2) To preclude the calculation of a new enthalpy that might be less than the lower bound by even a very small amount, a positive, non-zero correction factor was applied. The value of this correction factor is arbitrary. The selected value of 0.01 precludes any round-off error producing a new enthalpy value less than the lower bound.

(3) This equation is always used following the test by which it is determined whether the new enthalpy value is less than the lower limit.

We believe this explanation is adequate for the NRC to concur with the clarification letter of June 12, 2001.

Very truly yours,

James F. Mallay, Director
Regulatory Affairs

/lmk

cc: J. S. Cushing
Project 693

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