

December 17, 2002

Mr. James F. Mallay
Director, Regulatory Affairs
Framatome ANP, Richland, Inc.
2101 Horn Rapids Road
Richland, WA 99352

SUBJECT: EMF-85-74(P)(A), REVISION 0, SUPPLEMENT 1 AND SUPPLEMENT 2,
"RODEX2A (BWR) FUEL ROD THERMAL-MECHANICAL EVALUATION
MODEL" - CLARIFICATION OF EXPOSURE LIMIT APPLICABLE TO
FRAMATOME ANP BWR FUEL (TAC NO. MB6335)

Dear Mr. Mallay:

By letter dated June 27, 2002, you presented a Framatome ANP position regarding the boiling water reactor (BWR) part-length rod exposure limits documented in the approved methodology in Topical Report EMF-85-74(P)(A), Revision 0, Supplement 1 and Supplement 2. The exposure limits are: (1) 62 GWd/MTU rod average for the RODEX2A code, and (2) 54 GWd/MTU assembly average for ATRIUM 9 and 10 fuel designs. These limits are normally approved for full-length fuel rods. Your letter was in response to a recent staff question regarding whether these limits should also apply to part-length rods which could significantly restrict assembly exposure. You provided a table comparing axial exposure distribution between a part-length rod and a full-length rod. The comparison was made in two cases: (1) exposures averaged along an entire full rod length which included an imaginary length containing no fuel for the part-length rod, and (2) exposures averaged only for the length corresponding to the active portion of the part-length rod. The results showed that the exposures in the part-length rod were consistently less than the exposures in the full-length rod.

In a second letter dated September 4, 2002, you reiterated that the part-length rod seldom becomes a limiting rod, except in a rod internal pressure analysis, for thermal, mechanical and safety analyses. Since it has a shorter plenum region than full-length rods, in some instances a part-length rod could become limiting in the internal pressure analysis, that is, highest internal pressure in a bundle. You stated that Framatome ANP will continue to demonstrate that all fuel rods, including full- and part-length rods, meet all the required fuel design and safety criteria. Thus, you proposed a position of applying the exposure limits to the full-length rods only, not the part-length rods.

James F. Mallay

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The staff has reviewed your proposed position including the supporting analysis. Since there are a very limited number of part-length rods in an assembly and the full-length rods bear most critical requirements of fuel thermal-mechanical performance and safety, the staff concludes that the proposed position of applying the exposure limits in the approved methodology to the full-length rods, not the part-length rods, is reasonable and thus acceptable.

Sincerely,

/RA/

William H. Ruland, Director
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Project No. 693

The staff has reviewed your proposed position including the supporting analysis. Since there are a very limited number of part-length rods in an assembly and the full-length rods bear most critical requirements of fuel thermal-mechanical performance and safety, the staff concludes that the proposed position of applying the exposure limits in the approved methodology to the full-length rods, not the part-length rods, is reasonable and thus acceptable.

Sincerely,

/RA/

William H. Ruland, Director
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Project No. 693

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