August 13, 2003

Mr. James Mallay
Director, Regulatory Affairs
Framatome ANP
3815 Old Forest Road
Lynchburg, VA 24501

SUBJECT: TOPICAL REPORT BAW-2241-P, REVISION 2, "FLUENCE AND UNCERTAINTY METHODOLOGIES" (TAC NO. M98692)

Dear Mr. Mallay:

By letter dated June 2, 2003, Framatome ANP (FANP) submitted Appendix G to Topical Report BAW-2241-P, Revision 2. Appendix G outlined a boiling water reactor (BWR) fluence methodology, but had not benchmarked the proposed method.

The regulatory requirements for pressure vessel fluence calculations are stated in General Design Criteria (GDCs) 14, 30 and 31 in Appendix A to 10 CFR Part 50. The staff issued Regulatory Guide (RG) 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," which describes the attributes of methodologies which satisfy GDCs 14, 30 and 31. A recommended approach involves the use of a database for code benchmarking and the calculation of bias and uncertainty.

BAW-2241-P, Revision 2, did not include a database nor did it use publicly available data to benchmark the proposed methodology. The guidance in RG 1.190 was not followed and an alternative for satisfying the GDC requirements was not provided. Therefore, the staff cannot undertake a review of the FANP submittal. However, the staff believes that with the necessary data and benchmarking, the proposed methodology can be shown to meet the guidance of RG 1.190 and the relevant GDCs.

Due to the lack of a plant-measurement database and at FANP's request, the staff suggests the following path to achieve approval of the proposed methodology:

- provide a comparison to NUREG-6115's, "PWR and BWR Pressure Vessel Fluence Calculation Benchmark Problems and Solutions," BWR benchmark problem,
- provide a comparison to the most suitable case in the pool critical assembly experiment,
- provide a plant-specific analysis of an existing capsule, and
- on the basis of the above, request NRC approval for a plant-specific analysis of another capsule of the same plant.

If the above process is repeated a few times, FANP will acquire a sufficient database to request and achieve final approval of the proposed methodology.

The NRC is willing to engage in further dialogue in the form of a meeting or an additional conference call(s) to complete the review of this important work, but is unable to proceed with a review at this time.

Sincerely,

/RA/

Drew Holland, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Project No. 693

The NRC is willing to engage in further dialogue in the form of a meeting or an additional conference call(s) to complete the review of this important work, but is unable to proceed with a review at this time.

Sincerely,

/RA/

Drew Holland, Project Manager, Section 2
Project Directorate IV
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Office of Nuclear Reactor Regulation

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