



FRAMATOME ANP

An AREVA and Siemens Company

FRAMATOME ANP, Inc.

October 3, 2003
NRC:03:067

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

Catawba Nuclear Station and McGuire Nuclear Station, Partial Response to Request for Additional Information Regarding Use of Mixed Oxide Lead Fuel Assemblies.

Ref.: 1. William B. McGuire Nuclear Station Units 1 and 2 and Catawba Nuclear Station Units and 2: Mixed Oxide Lead Fuel Assemblies (TAC Nos. MB7863, MB7864, MB7865, and MB7866), Request for Additional Information, July 25, 2003.

In Reference 1, the NRC requested additional information to facilitate the completion of its review of the Duke Power Corporation license amendment request (LAR) for mixed oxide (MOX) fuel. In response to this request, Framatome ANP submits the enclosed information to support the NRC's review of the deterministic LOCA analyses for MOX fuel related to the Duke Power LAR. This submittal, which includes selected input decks, is made at the request of Duke Power and supports the response to Question 13 in the NRC's request for additional information.

Attachment 1 to this letter provides a supplementary response to Question 13 of the RAI contained in Reference 1.

One CD containing the proprietary information is enclosed. Framatome ANP considers the material contained in the enclosed documents to be proprietary. As required by 10 CFR 2.790(b), an affidavit is enclosed to support the withholding of the information from public disclosure. The entire input deck is considered proprietary and therefore a non-proprietary version will not be included with this letter.

Very truly yours,

James F. Mallay, Director
Regulatory Affairs

Enclosure

cc: R.E. Martin – NRC (w/enclosure)
E.S. Peyton - NRC

AP01

ATTACHMENT 1

Question 13 of Reference 1 states:

"To allow the NRC staff to perform confirmatory analysis, please provide both the McGuire and Catawba loss-of-coolant (LOCA) input decks for the low enriched uranium (LEU) as well as the MOX fuel rods. Provide the decks in an electronic format, including nodalization diagrams."

Response:

The accompanying CD includes two RELAP5/MOD2-B&W input decks in UNIX format. These decks describe the modeling for the deterministic evaluations of the MOX and LEU fuel pins reported in Duke's licensing amendment request (LAR). The deterministic LEU calculations within the LAR were performed to determine the relative differences in LOCA performance between MOX and LEU fuel. The licensing calculations of record for the LEU fuel is performed with a Westinghouse realistic model not the Framatome ANP LEU deterministic model provided herein.

1. r5moxnrc.in Blowdown input deck for MOX fuel pins.
2. r5uo2nrc.in Blowdown input deck for LEU fuel pins.

RELAP5/MOD2-B&W (BAW-10164PA) is a derivative of RELAP5/MOD2. Because the input for this version may not be recognizable by other versions of RELAP5, the following list of related input card images is provided to assist in resolving run difficulties.

Card 190: EM Choking Model Specification Card
(Activates Framatome ANP specific choked flow break modeling.)

Card 192: EM Critical Flow Transition Data
(Activates Framatome ANP specific critical flow break modeling.)

Card 195: Interface Heat Transfer Weighting
(Activates Framatome ANP specific interface height transfer weighting.)

Card 10000020-10000029: Heat Structure Cards
(Activates Framatome ANP specific filtered flow model (10CFR50.46 Appendix-K requirement).)

Card 10000S80-10000S99: Reflood Grid and Wall Heat Transfer Factor Data
(Activates Framatome ANP specific grid model for droplet breakup and convective heat transfer due to grids.)

Card 1CCCG801-1CCCG899: Left Boundary Heat Structure Cards

Card 1CCCG901-1CCCG999: Right Boundary Heat Structure Cards

(Activates the Framatome ANP specific EM heat transfer package.)

Card 19997000-19999999: EM Pin Model Specification

(Activates Framatome ANP specific EM core package providing for dynamic fuel-clad gap conductance and fuel rod swell and rupture. Also provides the M5™ cladding properties.)

6. The following criteria are customarily applied by FANP to determine whether information should be classified as proprietary:

- (a) The information reveals details of FANP's research and development plans and programs or their results.**
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.**
- (c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for FANP.**
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for FANP in product optimization or marketability.**
- (e) The information is vital to a competitive advantage held by FANP, would be helpful to competitors to FANP, and would likely cause substantial harm to the competitive position of FANP.**

7. In accordance with FANP's policies governing the protection and control of information, proprietary information contained in this Document has been made available, on a limited basis, to others outside FANP only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. FANP policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

A handwritten signature in black ink, appearing to be "A. H. ...", written over a horizontal line.

SUBSCRIBED before me this 3rd
day of October, 2003.

A handwritten signature in black ink, appearing to be "Ella F. Carr-Payne", written over a horizontal line.

Ella F. Carr-Payne
NOTARY PUBLIC, STATE OF VIRGINIA
MY COMMISSION EXPIRES: 8/31/05

