



May 19, 2009
NRC:09:058

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Update of the Empirical Assembly Growth Models Used for Assembly Designs

Ref. 1: BAW-10227PA-01, "Evaluation of Advanced Cladding and Structural Material (M5) in PWR Reactor Fuel," June 2003.

Ref. 2: BAW-10186PA-02, "Extended Burnup Evaluation," June 2003.

Ref. 3: Letter, Ronnie L. Gardner (AREVA NP Inc.) to Document Control Desk (NRC), "Update of the Empirical Assembly Growth Models Used for Assembly Designs," NRC:08:065, August, 29, 2008.

References 1 and 2 require acquisition of additional post-irradiation examination (PIE) data including cladding oxide, rod and assembly growth, shoulder gap, rod bow, control rod drop time and cladding wear inspections. This data is used to update, as necessary, the performance models presented in References 1 and 2. Reference 3 was submitted to inform the NRC of an update of the performance models. This letter provides an update to the information submitted to the NRC in Reference 3.

Specific to M5 fuel assembly growth, the Safety Evaluation Report for Reference 1 cites AREVA NP Inc.'s (AREVA NP) commitment to obtain M5 guide tube growth data up to approved burnup limits as a condition of approval. AREVA NP has acquired additional fuel assembly length measurements for the Advanced Mark-BW, Mark-BW, Mark-B12, Mark-B11A and Mark-B HTP fuel designs. This information has been used to update the empirical assembly growth models used for those assembly designs.

The updated growth models will be used to support AREVA NP's fuel licensing calculations in lieu of the M5 fuel assembly growth model depicted in References 1 and 2. The assembly designs are classed according to the set of features corresponding to each growth behavior. This is consistent with past practice for all Zirconium Alloy fuel designs. The Advanced Mark-BW and Mark-BW fuel designs are classed together for purposes of fuel assembly growth rates since they are very similar in design. The non-HTP Mark-B designs (Mark-B12, Mark-B11A, and Mark-B10K SA) are also classed together for purposes of fuel assembly growth, and the Mark-B HTP design is currently classed separately. The similarities in the assembly design classes are further borne out by the measurements. AREVA NP will continue to follow the methodology described in the Technical Evaluation Report and approved in the Safety Evaluation Report for Reference 2.

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AREVA NP INC.
An AREVA and Siemens company

The updated design correlation for Advanced Mark-BW and Mark-BW fuel assembly axial growth is provided for information in Figure 1. Figure 2 provides the updated design correlation for the non-HTP Mark-B designs. Figure 3 provides the updated design correlation for the Mark-B HTP design. When more data is accumulated, the design correlations will be further updated.

The NRC will be notified via an informational letter when unanticipated measurements necessitate model changes.

AREVA NP requests concurrence with the above position. A response would be appreciated by July 31, 2009.

AREVA NP considers the information contained in the enclosed attachment to be proprietary. As required by 10 CFR 2.390(b), an affidavit is enclosed to support the withholding of the information from public disclosure.

If you have any questions related to this subject, please contact Ms. Gayle Elliott at 434-832-3347 or by e-mail at gayle.elliott@areva.com.

Sincerely,


Ronnie L. Gardner, Manager
Corporate Regulatory Affairs
AREVA NP Inc.

Enclosure

cc: H. D. Cruz
R. Subbaratnam
Project 728

accordance with 10 CFR 2.390. The information for which withholding from disclosure is requested qualifies under 10 CFR 2.390(a)(4) "Trade secrets and commercial or financial information."

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

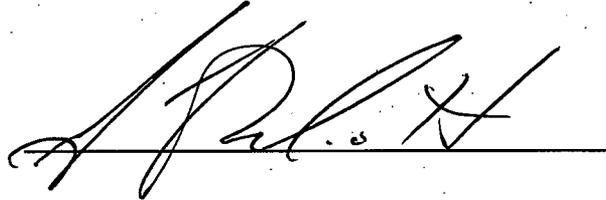
- (a) The information reveals details of AREVA NP's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or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

The information in the Document is considered proprietary for the reasons set forth in paragraphs 6(b) and 6(c) above.

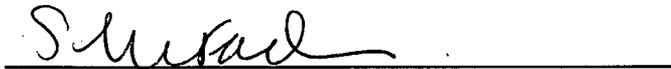
7. In accordance with AREVA NP's policies governing the protection and control of information, proprietary information contained in this Document have been made available, on a limited basis, to others outside AREVA NP only as required and under suitable agreement providing for nondisclosure and limited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

8. AREVA NP 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 "S. L. McFaden", written over a horizontal line.

SUBSCRIBED before me this 19th
day of May 2009.

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

Sherry L. McFaden
NOTARY PUBLIC, COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: 10/31/10
Reg. # 7079129

