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CALVERT CLIFFS
NUCLEAR POWER PLANT

July 23, 2010

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Response to Request for Additional Information Re: Proposed Transition from
Westinghouse to AREVA Fuel

REFERENCES:

- (a) Letter from Mr. D. V. Pickett (NRC) to Mr. G. H. Gellrich (CCNPP), dated June 23, 2010, Request for Additional Information Re: Proposed Transition from Westinghouse to AREVA Fuel
- (b) Letter from Mr. T. E. Trepanier (CCNPP) to Document Control Desk (NRC), dated November 23, 2009, License Amendment Request: Transition from Westinghouse Nuclear Fuel to AREVA Nuclear Fuel

Reference (a) requested additional information related to the proposed license amendment to support the transition from Westinghouse fuel to AREVA Advanced CE-14 High Thermal Performance fuel. Attachment (1) contains the response to that request. This response does not change the No Significant Hazards determination previously provided in Reference (b).

ADD1
NRK

ATTACHMENT (1)

**RESPONSE TO REQUEST FOR ADDITIONAL – TRANSITION TO
AREVA NUCLEAR FUEL**

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL – TRANSITION TO AREVA NUCLEAR FUEL

NRC RAI 1:

A modification to the licensing basis fuel type can have the potential to change the core isotopic distribution assumed in post accident conditions. Based upon this, please provide additional information regarding the effect the proposed fuel type change has on the current radiological consequence design basis analyses. Please provide any changes to the parameters, assumptions, or methodologies in the radiological design-basis accident (DBA) analyses as a result of the proposed fuel type change and justification for those changes. If there are changes to the radiological DBA analyses, please provide the resulting change to the calculated radiological consequence of the DBAs.

CCNPP Response:

Previously, an analysis was done to develop a bounding source-term that is used for the radiological DBAs with failed fuel. This analysis was performed based on Westinghouse fuel and Regulatory Guide 1.183 release fractions. An additional analysis was performed to demonstrate that the core source-term previously developed remained bounding for AREVA Advanced CE-14 High Thermal Performance fuel using Gd_2O_3 burnable poison irradiated to a maximum burnup to 62 GWd/MTU. Both analyses calculated the core isotope activity with SAS2H/ORIGEN-S. Each analysis examined 11 core power distribution scenarios to determine the most limiting case. The AREVA fuel source-term was compared to the Westinghouse fuel source-term assuming the most limiting case for each fuel type. The results for both dose rates and dose show that the Westinghouse fuel source-term is most limiting. Therefore, the source-term input for the radiological DBAs does not need to be updated based on the transition to AREVA fuel and the current accident dose analysis results remain bounding.