your energy partner
OPPD
Omaha Public Power District

444 South 16th Street Mall
Omaha NE 68102-2247

May 23, 2006
LIC-06-0060

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Reference:
1. Docket No. 50-285
2. Letter from Ross Ridenoure (OPPD) to Document Control Desk (NRC) dated September 30, 2005, Fort Calhoun Station Unit No. 1 - License Amendment Request to Support Use of AREVA Realistic Large Break Loss of Coolant Accident Methodology (LIC-05-0106) (ML052770174)

SUBJECT: Response to Request for Additional Information Related to the License Amendment Request to Support Use of AREVA Realistic Large Break Loss of Coolant Accident Methodology

Reference 2 provided the Omaha Public Power District's request for a license amendment to support use of AREVA Realistic Large Break Loss of Coolant Accident (RLBLOCA) Methodology. In emails dated February 10, 2006 and May 2, 2006, the NRC requested additional information regarding Reference 2.

Attachment 1 provides the AREVA proprietary authorization affidavit supporting the FCS specific RLBLOCA analysis. This affidavit will form the basis on which the NRC may withhold the information from public disclosure based on considerations listed in 10 CFR 2.390.

Attachment 2 to this submittal is the proprietary version of the response to the request for additional information for the FCS Unit No. 1. The proprietary information in the report is enclosed in brackets. OPPD requests that Attachment 2 which is proprietary to AREVA be withheld from public disclosure in accordance with 10 CFR 2.390. For information on the proprietary aspects of the items listed above, please reference the affidavit and address any correspondence to Jerry Holm, Manager, Product Licensing, Framatome ANP Inc., 3315 Old Forest Road, Lynchburg, VA 24501.

The non-proprietary version of the response to the request for additional information for FCS is enclosed as Attachment 3.

I declare under penalty of perjury that the foregoing is true and correct. (Executed on May 23, 2006.)

A001

If you have additional questions, or require further information, please contact Thomas R. Byrne at (402) 533-7368.

Sincerely,

Jeffrey A. Reinhart
Site Director
Fort Calhoun Station

JAR/TRB/trb

Attachments:

1. AREVA Affidavit
2. Response to Request for Additional Information Related to the License Amendment Request to Support Use of AREVA Realistic Large Break Loss of Coolant Accident Methodology - Proprietary
3. Response to Request for Additional Information Related to the License Amendment Request to Support Use of AREVA Realistic Large Break Loss of Coolant Accident Methodology - Non-Proprietary

ATTACHMENT 1

AREVA Affidavit

AFFIDAVIT

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

1. My name is Jerald S. Holm. I am Manager, Product Licensing, for AREVA NP Inc. and as such I am authorized to execute this Affidavit.

2. I am familiar with the criteria applied by AREVA NP to determine whether certain AREVA NP information is proprietary. I am familiar with the policies established by AREVA NP to ensure the proper application of these criteria.

3. I am familiar with the AREVA NP information contained in the attachments to the OPPD letter LIC-06-0060, dated May 19, 2006 and referred to herein as "Document." Information contained in this Document has been classified by AREVA NP as proprietary in accordance with the policies established by AREVA NP for the control and protection of proprietary and confidential information.

4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by AREVA NP and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in this Document as proprietary and confidential.

5. This Document has been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in this Document be withheld from public disclosure.

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.

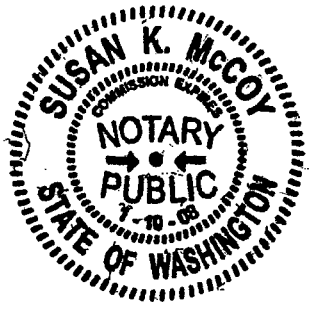
(e) The information is vital to a competitive advantage held by AREVA NP, would be helpful to competitors to AREVA NP, and would likely cause substantial harm to the competitive position of AREVA NP.

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.

SUBSCRIBED before me this 17th day of May, 2006.



Susan K. McCoy
NOTARY PUBLIC, STATE OF WASHINGTON
MY COMMISSION EXPIRES: 1/10/2008

ATTACHMENT 3

Response to Request for Additional Information Related to the License Amendment Request to Support Use of AREVA Realistic Large Break Loss of Coolant Accident Methodology - Non-Proprietary

Response to Request for Additional Information Related to the License Amendment Request to Support Use of AREVA Realistic Large Break Loss of Coolant Accident Methodology - Non-Proprietary

NRC Request #1

Please provide a statement to the effect that: OPPD and its LBLOCA analyses vendor have ongoing processes that assure that the input values and ranges of parameters for the Fort Calhoun Unit 1 LBLOCA analyses conservatively bound the values and ranges of those parameters for the as operated Fort Calhoun Unit 1 plant. (This statement addresses certain of the programmatic requirements of 10 CFR 50.46, Section (c).)

OPPD Response

OPPD and its LOCA analyses vendor have in place processes to assure that the input parameters for the Fort Calhoun, Unit 1 LBLOCA analyses bound the ranges and values of the as-operated plant parameters. Each cycle, a plant parameters document is created to provide the vendor with a current plant description which is used to assure that the analyses and plant specific parameters are consistent.

NRC Request #2

Please address slot breaks at the top and side of the Fort Calhoun cold leg RCS pump discharge pipe. One way to do this might be to confirm that operators implementing Fort Calhoun emergency response procedures would prevent from developing the conditions that would lead to extended core uncovery. (Cite analyses confirming the timeliness and effectiveness of the actions.)

OPPD Response

The Safety Evaluation (SE) restrictions and limitations are addressed in Table 3.4 of the report BAW-2502(P). The issue of the top slot breaks is item 4 in the table.

The SE for the RLBLOCA topical report states that the evaluation of slot breaks may be based on relevant engineering experience and may be documented in either the RLBLOCA guideline or plant specific calculation file. Table 3.4 states that this issue is not applicable to the Fort Calhoun Station because it does not have, "deep loop seals."

NRC Request #3

The review I did of the containment portion of the AREVA topical report was for a sub-atmospheric containment. The uncertainties were derived for a sub-atmospheric containment.

How can the code be applied to a large dry containment? Have changes been made? Should they be made?"

OPPD Response

The RLBLOCA topical report, EMF-2103(P)(A), is applicable to Westinghouse 3 and 4 loop and Combustion Engineering plants. The methodology is applicable to all of the containment designs for these plants including dry containments, ice condenser containments and sub-atmospheric containments. The NRC SER for the topical report explicitly approves the methodology for these plant types.

The first LAR by a licensee to use the methodology was for a sub-atmospheric containment plant. This was just an individual application of the methodology.

The RLBLOCA methodology does not define uncertainties for any single plant type. The methodology is statistical in nature and each application of the methodology results in a unique uncertainty for the plant conditions being analyzed. Similarities exist between the uncertainties for each individual application of the methodology but the exact values are different.

NRC Request #4

To facilitate the staff review of AREVA Realistic Large-Break Loss of Coolant Accident Methodology please provide the following: a table comparing model parameters recommended by Branch Technical Position CSB 6-1, in Standard Review Plan Section 6.2.1.5, "Minimum Containment Pressure Model for PWR ECCS Performance Evaluation," NUREG-0800, similar to Table 1 of attachment 1 to Virginia Electric and Power Company letter on "North Anna Power Station Units 1 and 2 request for use of Framatome and advanced Mark-BW Fuel Supplemental Information for Realistic Large-Break Loss of Coolant Accident (LBLOCA) Analysis Results," dated November 10, 2003.

OPPD Response

Table 1 herein provides the requested Fort Calhoun Station containment information. The table sets forth the basic modeling parameters used in the Fort Calhoun Station RLBLOCA analysis containment model. The information is analogous to information presented in response to an RAI on AREVA NP's North Anna RLBLOCA analyses.

NRC Request #5

Table 1 of the draft response references the USAR for the passive heat sinks used to calculating the minimum containment pressure during a loss of coolant accident. However, the staff could find the passive heat sinks used for the maximum but not the minimum containment pressure during a loss of coolant accident. Please provide the correct reference.

OPPD Response

The passive heat sinks used in the Fort Calhoun Station RLBLOCA analysis were taken from the current LBLOCA analysis of record—a deterministic 10CFR50.46 Appendix K-based analysis. The material was reviewed by OPPD. It complies with the guidance provided by NUREG-0800, CSB 6-1. The USAR was mentioned in the context of it being a public domain document that provides a summary of the LBLOCA analysis of record. The description in Table 1 was updated.

NRC Request #6

Table 1 of the draft response shows that realistic large break loss of coolant accident methodology of FANP used a multiplier of 1.7 for Uchida heat transfer coefficient while Fort Calhoun used a multiplier of [ ]. Please (1) provide the portion of the calculation for determining the Uchida multiplier and (2) list and explain the major contributors for the difference between the FANP and Fort Calhoun multipliers.

OPPD Response

The RLBLOCA evaluation model (EM) and implementing guidelines require a plant-specific confirmation of the 1.7 Uchida heat transfer multiplier. This is because the original 1.7 value was derived from a specific plant application, not generically. For a given application, failing to confirm the 1.7 value, a new Uchida multiplier should be established by following the procedure set forth in the RLBLOCA EM, EMF-2103; it is also discussed in Reference 1, Appendix H, and in Reference 2. For the Fort Calhoun Station RLBLOCA analysis, the 1.7 Uchida multiplier was not confirmed. This can occur for any number of reasons: containment size, mass and energy release, passive heat sink structures, wet or dry containment, etc. Accordingly, AREVA NP recalculated the multiplier in a manner similar to that in which it was originally derived—following the EM procedure. A value of [ ] was determined and used in the Fort Calhoun Station RLBLOCA analysis.

References

1. AREVA NP Letter, James F. Mallay (Framatome ANP) to Document Control Desk (NRC), "Request for Review and Approval of EMF-2103(P) Revision 1, 'Realistic Large Break LOCA Methodology for Pressurized Water Reactors'," NRC:04:027, August 9, 2004.

2. AREVA NP Letter, James F. Mallay (Framatome ANP) to Document Control Desk (NRC), "Response to a Request for Additional Information regarding EMF-2103(P) Revision 1, 'Realistic Large Break LOCA Methodology for Pressurized Water Reactors'," NRC:04:072, December 17, 2004.