



**Progress Energy**

**Michael J. Annacone**  
Vice President  
Brunswick Nuclear Plant

**JUL 29 2010**

SERIAL: BSEP 10-0093  
TSC-2010-01 & TSC-2010-02

10 CFR 50.90

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

Subject: Brunswick Steam Electric Plant, Unit Nos. 1 and 2  
Renewed Facility Operating License Nos. DPR-71 and DPR-62  
Docket Nos. 50-325 and 50-324  
Brunswick Unit 2 Cycle 20 Thermal-Hydraulic Design Report

**References:**

1. Letter from Michael J. Annacone to the U.S. Nuclear Regulatory Commission (Serial: BSEP 10-0052), "Request for License Amendment - Addition of Analytical Methodology Topical Report to Technical Specification 5.6.5, "Core Operating Limits Report (COLR)," dated April 29, 2010 (ADAMS Accession Number ML101310388)
2. Letter from Michael J. Annacone to the U.S. Nuclear Regulatory Commission (Serial: BSEP 10-0057), "Request for License Amendment - Addition of Analytical Methodology Topical Report to Technical Specification 5.6.5, "Core Operating Limits Report (COLR)," dated April 29, 2010 (ADAMS Accession Number ML101310389)

**Ladies and Gentlemen:**

By letters dated April 29, 2010 (i.e., References 1 and 2), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., requested license amendments to revise the Technical Specifications (TS) for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2. The proposed license amendments revise Technical Specification 5.6.5.b by adding: (1) AREVA Topical Report ANP-10298PA, *ACE/ATRIUM 10XM Critical Power Correlation*, Revision 0, March 2010, and (2) AREVA Topical Report BAW-10247PA, *Realistic Thermal-Mechanical Fuel Rod Methodology for Boiling Water Reactors*, Revision 0, April 2008, to the list of analytical methods that have been reviewed and approved by the NRC for determining core operating limits.

In these requests, CP&L stated that the Unit 2 Cycle 20 Thermal-Hydraulic Design Report would be provided to the NRC, for information, in August 2010. The thermal-hydraulic design report (i.e., ANP-2936(P), Revision 0, *Brunswick Unit 2 Thermal-Hydraulic Design*

**Progress Energy Carolinas, Inc.**  
P.O. Box 10429  
Southport, NC 28461

T > 910.457.3698

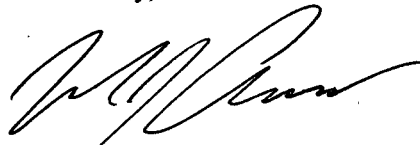
A001  
NRL

*Report for ATRIUM™ 10XM Fuel Assemblies*, dated July 2010) has been completed and is provided in Enclosure 1. ANP-2936(P), Revision 0, contains information that AREVA considers to be proprietary as defined by 10 CFR 2.390. AREVA, as the owner of the proprietary information, has executed the affidavit provided in Enclosure 2, which identifies that the enclosed proprietary information has been handled and classified as proprietary, is customarily held in confidence, and has been withheld from public disclosure. AREVA requests that the enclosed proprietary information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. A non-proprietary version of ANP-2936(P), Revision 0, is provided in Enclosure 3.

No regulatory commitments are contained in this submittal. Please refer any questions regarding this submittal to Ms. Annette Pope, Supervisor – Licensing/Regulatory Programs, at (910) 457-2184.

I declare, under penalty of perjury, that the foregoing is true and correct. Executed on July 29, 2010.

Sincerely,



Michael J. Annacone

WRM/wrm

Enclosures:

1. AREVA Report ANP-2936(P), Revision 0, *Brunswick Unit 2 Thermal-Hydraulic Design Report for ATRIUM™ 10XM Fuel Assemblies*, dated July 2010  
**(Proprietary Information – Withhold from Public Disclosure in Accordance With 10 CFR 2.390)**
2. AREVA Affidavit Regarding Withholding ANP-2936(P), Revision 0, from Public Disclosure
3. AREVA Report ANP-2936(NP), Revision 0, *Brunswick Unit 2 Thermal-Hydraulic Design Report for ATRIUM™ 10XM Fuel Assemblies*, dated July 2010

cc (with Enclosures 1, 2, and 3):

U. S. Nuclear Regulatory Commission, Region II  
ATTN: Mr. Luis A. Reyes, Regional Administrator  
245 Peachtree Center Avenue, NE, Suite 1200  
Atlanta, GA 30303-1257

U. S. Nuclear Regulatory Commission  
ATTN: Mr. Philip B. O'Bryan, NRC Senior Resident Inspector  
8470 River Road  
Southport, NC 28461-8869

U. S. Nuclear Regulatory Commission **(Electronic Copy Only)**  
ATTN: Mrs. Farideh E. Saba (Mail Stop OWFN 8G9A)  
11555 Rockville Pike  
Rockville, MD 20852-2738

cc (with Enclosures 2 and 3):

Chair - North Carolina Utilities Commission  
P.O. Box 29510  
Raleigh, NC 27626-0510

Mr. W. Lee Cox, III, Section Chief  
Radiation Protection Section  
North Carolina Department of Environment and Natural Resources  
1645 Mail Service Center  
Raleigh, NC 27699-1645