CP&L
A Progress Energy Company

John S. Keenan
Vice President
Brunswick Nuclear Plant

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING
REQUEST FOR LICENSE AMENDMENTS - EXTENDED POWER UPRATE
(NRC TAC NOS. MB2700 AND MB2701)

Ladies and Gentlemen:

On August 9, 2001 (Serial: BSEP 01-0086), Carolina Power & Light (CP&L) Company requested a revision to the Operating Licenses (OLs) and the Technical Specifications for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The proposed license amendments increase the maximum power level authorized by Section 2.C.(1) of OLs DPR-71 and DPR-62 from 2558 megawatts thermal (MWt) to 2923 MWt. Subsequently, on January 30, 2002, the NRC provided an electronic version of a Request for Additional Information (RAI) concerning the difference in turbine bypass valve capability of the two BSEP units and how this difference was addressed in the BSEP probabilistic safety analysis of the planned extended power uprate. The response to this RAI is enclosed.

Please refer any questions regarding this submittal to Mr. Leonard R. Beller, Manager - Regulatory Affairs, at (910) 457-2073.

Sincerely,

John S. Keenan

MAT/mat

P.O. Box 10429
Southport, NC 28461

T > 910.457.2496
F > 910.457.2803

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Enclosure:
Response to Request for Additional Information (RAI) 15

John S. Keenan, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, and agents of Carolina Power & Light Company.

Dean S. Mason
Notary (Seal)

My commission expires: 8-29-04

cc: U. S. Nuclear Regulatory Commission, Region II
ATTN: Mr. Luis A. Reyes, Regional Administrator
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, GA 30303-8931

U. S. Nuclear Regulatory Commission
ATTN: Mr. Theodore A. Easlick, NRC Senior Resident Inspector
8470 River Road
Southport, NC 28461-8869

U. S. Nuclear Regulatory Commission **(Electronic Copy Only)**
ATTN: Mr. Allen G. Hansen (Mail Stop OWFN 8G9)
11555 Rockville Pike
Rockville, MD 20852-2738

U. S. Nuclear Regulatory Commission
ATTN: Mr. Mohammed Shuaibi (Mail Stop OWFN 8H4A)
11555 Rockville Pike
Rockville, MD 20852-2738

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

Mr. Mel Fry
Director - Division of Radiation Protection
North Carolina Department of Environment and Natural Resources
3825 Barrett Drive
Raleigh, NC 27609-7221

ENCLOSURE

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Response to Request for Additional Information (RAI) 15

Background

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NRC Question 15-1

The EPU PRA evaluation was based on Unit 2, with the argument that the two units are essentially identical. However, one area in which the two units are not similar is in the turbine bypass valve (TBV) capacity. With the increased power level, the Unit 2 capability will clearly remain acceptable and its success criteria, even if it increased in the number of TBVs needed, would not appreciably affect the results due to the numerous TBVs (10). However, the Unit 1 TBV capability may become marginal or even inadequate at the EPU conditions since there are fewer TBVs (4), which are also smaller than the Unit 2 TBVs. Has the TBV capacity (i.e., success criteria) at Unit 1 been confirmed to remain acceptable at EPU conditions? If not, the licensee should evaluate the success criteria for the TBVs at Unit 1 to assure the staff that this difference in the units has been properly evaluated. One approach that may be acceptable would be to perform a sensitivity calculation in which the TBV condenser cooling (i.e., steam dumping) function is defeated in the EPU model and the change in risk (i.e., CDF and LERF) due to this change is presented to the staff and shown to be acceptable per RG 1.174. Finally, if there are any other major success criteria differences between Unit 1 and Unit 2, these differences need to be presented to the staff and shown to either be unaffected by the EPU or the evaluation reflecting these differences provided.

Response to Question 15-1

The impact of EPU conditions on Unit 1 turbine bypass valve (TBV) capability has been previously evaluated and it was concluded that, while a reduction of the relative steam bypass capacity for each unit would occur, the Pressure Control System (PCS) remains able to perform its design function under EPU conditions.

As a result of EPU, the turbine bypass capacity will be reduced from 23.79% to 20.6% for Unit 1 and from 80.26% to 69.6% for Unit 2. These relative changes are small and do not impact the success criteria in the BSEP Unit 1 PSA analysis, which requires the opening of all four turbine bypass valves. It should be noted that the PSA assumes the same bypass requirements for both units, however the success criteria for Unit 2 reflects the larger number of bypass valves available. Section 4.1.2.3 of Enclosure 2 to CP&L's response to RAI 6, (i.e., BSEP 01-0141, dated November 30, 2001) provides further discussion of the systemic success criteria.

Since the percent change in turbine bypass capacity is relatively small and does not impact the success criteria or accident sequences modeling in the PSA, no model sensitivity calculation is necessary.

There are no other significant success criteria in the BSEP PSA model that relate to differences between Unit1 and Unit 2. While some minor differences exist between the units (e.g., an alternate pump may be powered by Division I AC power versus Division II AC power and slightly different location of equipment as in the Control Rod Drive pumps), these differences have a negligible impact on the risk profile.