



Carolina Power & Light Company

P.O. Box 1551 • Raleigh, N.C. 27602

APR 23 1991

G. E. VAUGHN
Vice President
Nuclear Services Department

SERIAL: NLS-91-070
10 CFR 50.90
TSC 91TSB04

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324/LICENSE NO. DPR-62
REQUEST FOR LICENSE AMENDMENT
FUEL CYCLE 10 RELOAD LICENSING

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company (CP&L) hereby requests a revision to the Technical Specifications for the Brunswick Steam Electric Plant (BSEP), Unit 2.

The proposed amendment revises the Minimum Critical Power Ratio (MCPR) safety limit specified in Technical Specification 2.1.2 from 1.06 to 1.07 for Cycle 10 operation. In addition, Technical Specification 5.3.1 is being revised to reflect the new fuel type (GE8x8NB-3) which will be inserted in the upcoming refueling outage.

Enclosure 1 provides a detailed description of the proposed changes and the basis for the changes.

Enclosure 2 details the basis for the Company's determination that the proposed changes do not involve a significant hazards consideration.

Enclosure 3 provides instructions for incorporation of the proposed changes into the Technical Specifications for Unit 2.

Enclosure 4 provides a summary of the proposed Technical Specification changes for Unit 2 on a page by page basis.

In accordance with 10 CFR 50.91(b), CP&L is providing the State of North Carolina with a copy of the proposed license amendment.

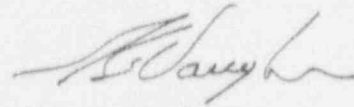
In order to allow time for procedure revision and orderly incorporation into copies of the Technical Specifications, CP&L requests that the proposed amendment, once approved by the NRC, be issued with an effective date to be no later than 60 days from the issuance of the amendment. The Company requests the NRC issue the proposed license amendment by September 1, 1991 to support activities scheduled for the upcoming Unit 2 refueling outage.

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Please refer any questions regarding this submittal to Mr. W. R. Murray at
(919) 546-4661.

Yours very truly,



G. E. Vaughn

WRM/wrm (\cor\b2r9fuel)

Enclosures:

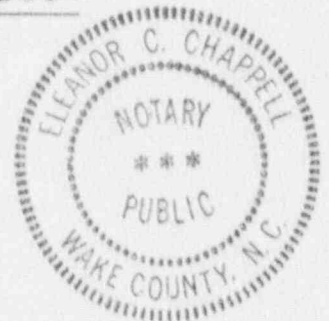
1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Technical Specification Pages - Unit 2

cc: Mr. Dayne H. Brown
Mr. S. D. Ebnetter
Mr. N. B. Le
Mr. R. L. Prevatte

G. E. Vaughn, 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, contractors, and agents of Carolina Power & Light Company.

Eleanor C. Chappell
Notary (Seal)

My commission expires: 2/6/96



ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2
NRC DOCKET NO. 50-324
OPERATING LICENSE NO. DPR-62
REQUEST FOR LICENSE AMENDMENT
FUEL CYCLE 10 RELOAD LICENSING

BASIS FOR CHANGE REQUEST

Proposed Change:

The proposed amendment revises the Minimum Critical Power Ratio (MCPR) safety limit specified in Technical Specification 2.1.2 from 1.06 to 1.07 for Cycle 10 operation. In addition, the proposed amendment incorporates the GE8x8NB-3 fuel type into Technical Specification 5.3.1.

Basis:

Currently, the Brunswick-2 Technical Specifications reference the use of a safety limit Minimum Critical Power Ratio (MCPR) of 1.06. The proposed amendment changes the MCPR safety limit in Technical Specification 2.1.2 from 1.06 to 1.07.

The MCPR safety limit is established to protect the integrity of the fuel cladding during normal plant operations and anticipated transients, as required by Criterion 10 of 10 CFR 50, Appendix A. As such, the MCPR safety limit bounds the acceptable consequences of anticipated operational occurrences. The current MCPR safety limit of 1.06 provides adequate margin to assure that more than 99.9 percent of the fuel rods in the Cycle 9 core avoid transition boiling. The revised MCPR safety limit of 1.07 maintains this margin, taking into account the new GE8x8NB-3 fuel type to be loaded in Cycle 10.

The GE8x8NB-3 design consists of the GE8x8NB fuel design with an interactive channel and offset lower tie plate. The NRC has approved the use of the C-lattice GE8x8NB safety limit of 1.07 for evaluations of GE8x8NB-3 reloads in Amendment 21 to NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (GESTAR-II). The GE8x8NB-3 design has a geometry between C-lattice and D-lattice designs. The offset lower tie plate makes D-lattice bundles more compatible with C-lattice bundles for analyses purposes. Use of the GE8x8NB bounding C-lattice MCPR safety limit, which is greater than the D-lattice safety limit, constitutes a conservative approach and maintains the current margin of safety.

A similar change to the Technical Specifications was previously reviewed and approved by the NRC as Amendment No. 142 for the Brunswick Steam Electric Plant Unit No. 1 (Reference 2). That amendment request was noticed in the Federal Register on May 16, 1990 (Reference 3).

References:

1. NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (GESTAR-II).
2. Letter dated June 18, 1990 from Mr. N. B. Le (USNRC) to Mr. L. W. Eury (CP&L), "Issuance of Amendment No. 142 to Facility Operating License No. DPR-71 - Brunswick Steam Electric Plant, Unit 1."
3. Federal Register Notice for Brunswick Unit 1 Amendment No. 142, 55 FR 20351, dated May 16, 1990.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2
NRC DOCKET NO. 50-324
OPERATING LICENSE NO. DPR-62
REQUEST FOR LICENSE AMENDMENT
FUEL CYCLE 10 RELOAD LICENSING

10 CFR 50.92 EVALUATION

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. Carolina Power & Light Company has reviewed this proposed license amendment request and determined that its adoption would not involve a significant hazards consideration. The bases for this determination are as follows:

Proposed Change:

The proposed amendment revises the Minimum Critical Power Ratio (MCPR) safety limit specified in Technical Specification 2.1.2 from 1.06 to 1.07 for Cycle 10 operation. In addition, the proposed amendment incorporates the GE8x8NB-3 fuel type into Technical Specification 5.3.1.

Basis:

The change does not involve a significant hazards consideration for the following reasons:

1. The NRC accepted methodology used to derive the updated safety limit MCPR of 1.07 applies the same criteria as that used to derive the current safety limit MCPR value of 1.06. The updated safety limit MCPR value of 1.07 assures that fuel cladding protection equivalent to that provided with the safety limit MCPR value of 1.06 is maintained. Thus, the consequences of accidents previously evaluated are not significantly increased. The safety limit MCPR does not affect any physical system or equipment which could change the probability of an accident.

Use of the GE8x8NB-3 fuel type was generically found to be acceptable by the NRC in Amendment 21 to GESTAR-II. The fuel design has been analyzed using approved methods documented in GESTAR-II with the results being within accepted limits. As discussed above, the MCPR safety limit was selected to maintain the fuel cladding integrity safety limit. The GE8x8NB-3 fuel response to analyzed transients will be performed and appropriate operating limit MCPR values will be incorporated in the Core Operating Limits Report as required by Technical Specification 6.9.3.1.

Therefore, based on the arguments presented above, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Adoption of the proposed MCPR safety limit does not affect the function of any component or system. The GE8x8NB-3 fuel type was previously reviewed and found acceptable by the NRC for use as documented in Amendment 21 to GESTAR-II. No new mode or condition of plant operation will be authorized by this change. Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.
3. The safety limit MCPR value is determined for cycle specific application of fuel types as described in NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," to meet Criterion 10 of 10 CFR 50, Appendix A. The GE8x8NB-3 fuel type and its associated analysis methodologies were reviewed and found acceptable by the NRC in Amendment 21 to GESTAR-II.

Analyses of the limiting anticipated operational occurrences for each cycle are used in conjunction with the applicable safety limit MCPR value to determine cycle specific operating limit MCPR values. The above referenced methods are used to ensure required margins to safety (e.g., fuel cladding integrity safety limit and reactor coolant system integrity) are maintained. The MCPR safety limit was selected to maintain the fuel cladding integrity safety limit (i.e., that 99.9 percent of all fuel rods in the core be expected to avoid boiling transition). Use of the 1.07 safety limit MCPR for Cycle 10 will result in equivalent fuel cladding protection as that provided by the current cycle limit of 1.06. Therefore, the proposed amendment does not involve a significant reduction in the margin of safety.