



Carolina Power & Light Company

APR 04 1990

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10CFR50.90  
90TSB01

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1  
DOCKET NO. 50-325/LICENSE NO. DPR-71  
SUPPLEMENT TO REQUEST FOR LICENSE AMENDMENT  
FUEL CYCLE 8 - RELOAD LICENSING

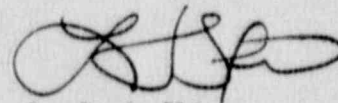
Gentlemen:

On February 28, 1990, Carolina Power & Light Company (CP&L) submitted a request to revise the Technical Specifications for the Brunswick Steam Electric Plant (BSEP), Unit 1. The proposed amendment will revise the minimum critical power ratio (MCPR) safety limit specified in Technical Specification 2.1.2 from 1.04 to 1.07 for Unit 1 Cycle 8 operation. In addition, Technical Specification 5.3.1 is being revised to incorporate the GE8X8NE-3 fuel type and to delete fuel types that will no longer be used in the core during Cycle 8.

At the request of the NRR Project Manager, additional information in support of the Company's finding that the request does not involve a significant hazards consideration is enclosed.

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

Yours very truly,



L. I. Loflin

WRM/wrm (\cor\ulreload)

Enclosure

cc: Mr. Dayne H. Brown  
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ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1  
NRC DOCKET NO. 50-325  
OPERATING LICENSE NO. DPR-71  
SUPPLEMENT TO REQUEST FOR LICENSE AMENDMENT  
FUEL CYCLE 8 - RELOAD LICENSING

10 CFR 50.92 EVALUATION (REVISED)

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 1

Revise the Minimum Critical Power Ratio (MCPR) Safety Limit specified in Technical Specification 2.1.2 from 1.04 to 1.07.

Basis

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

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated. The MCPR Safety Limit is set to protect the integrity of the fuel cladding from undergoing boiling transition following any design basis transient. The MCPR Safety Limit is defined as the critical power ratio in the limiting assembly for which more than 99.9 percent of the fuel rods in the core are expected to avoid boiling transition considering the power distribution within the core and all uncertainties. The NRC has reviewed and accepted the application of the GE8X8NB (C-lattice) MCPR Safety Limit for the GE8X8NB-3 (D-lattice) fuel type in Amendment 21 to NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (GESTAR II). The MCPR Safety Limit value for C-lattice fuel is higher than the MCPR Safety Limit for D-lattice fuel. Therefore, the 1.07 MCPR Safety Limit for C-lattice fuel conservatively bounds the GE8X8NB-3 fuel (a D-lattice fuel type). As a result, the 1.07 MCPR Safety Limit assures that fuel cladding protection equivalent to that provided with the 1.04 MCPR Safety Limit (i.e., 99.9 percent of all fuel rods in the core being expected to avoid boiling transition) is maintained.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated. No plant controls or equipment are modified that will change the plant's response to any accident or transient as given in any current analysis. Also, the 1.07 MCPR Safety Limit does not allow any new mode or condition of plant operation different from that currently stated in the Updated Final Safety Analysis Report.
3. The proposed amendment does not involve a significant reduction in the margin of safety. The MCPR Safety Limit is set to protect the integrity of the fuel cladding from undergoing boiling transition following any design basis transient. Margin is incorporated into the limit to allow for uncertainties in monitoring the core operating state and in calculating the critical power ratio so that 99.9 percent of all rods do not experience boiling transition following any design basis transient. The NRC accepted methodology used to derive the 1.07 MCPR Safety Limit applies the same criteria as that used to derive the current 1.04 MCPR Safety Limit, thus providing equivalent fuel cladding protection as that provided by the current MCPR Safety Limit of 1.04.

#### Proposed Change 2

Incorporate the GE8X8NB-3 fuel type into Specification 5.3.1 and delete the 8X8R and P8X8R fuel types that will not be used in the core during Cycle 8.

#### Basis

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

1. 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 in Proposed Change 1 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 Specification 6.9.3.1, thereby assuring the probability or consequences of an accident previously evaluated are not significantly increased.

The 8X8R and P8X8R fuel types will be removed from the Unit 1 core for Cycle 8 and replaced with the GE8X8NB-3 fuel type. The two removed fuel types will no longer be subjected to a potential design basis transient. Therefore, the probability or consequences of an accident previously evaluated are not significantly increased.

2. 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 change will not create the possibility for a new or different kind of accident from any accident previously evaluated.

The 8X8R and P8X8R fuel types will be removed from the Unit 1 core for Cycle 8 and replaced with the GE8X8NB-3 fuel type. Removal of the two fuel types will create no new mode or condition of plant operation. Therefore, the removal of the 8X8R and P8X8R fuel types will not create the possibility for a new or different kind of accident from any accident previously evaluated.

3. The GE8X8NB-3 fuel type and its associated analysis methodologies were reviewed and found acceptable by the NRC in Amendment 21 to GESTAR II. The GE8X8NB-3 fuel type was analyzed using these methods to ensure required margins to safety (e.g., fuel cladding integrity safety limit and reactor coolant system integrity) are maintained. As discussed in Proposed Change 1 above, 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). Therefore, the proposed change does not result in a significant reduction in the margin of safety.

The 8X8R and P8X8R fuel types will be removed from the Unit 1 core for Cycle 8 and replaced with the GE8X8NB-3 fuel type. The two removed fuel types will no longer be subjected to a potential design basis transient. Therefore, removal of these two fuel types will not involve a significant reduction in the margin of safety.