

September 27, 2001

Mr. J. S. Keenan, Vice President  
Brunswick Steam Electric Plant  
Carolina Power & Light Company  
Post Office Box 10429  
Southport, North Carolina 28461

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT  
IMPACT - EXEMPTION FROM 10 CFR PART 50 REQUIREMENTS - USE OF  
ASME CODE CASE N-640 IN LIEU OF APPENDIX G OF ASME SECTION XI  
FOR THE GENERATION OF UPDATED PRESSURE-TEMPERATURE  
CURVES FOR THE BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2  
(TAC NOS. MB1850 and MB1851)

Dear Mr. Keenan

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemption dated May 1, 2001, as supplemented on August 20, 2001. The proposed exemption would allow Carolina Power & Light (CP&L) to deviate from complying with the requirements in 10 CFR Part 50, Appendix G, for generating the pressure-temperature (P-T) limit curves for the Brunswick Steam Electric Plant, Units 1 and 2. Specifically, you requested that CP&L be allowed to use ASME Code Case N-640 as the basis for establishing the fracture toughness values used in P-T limit calculations.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

*/RA/*

Donnie J. Ashley, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-325 and 50-324

Enclosure: Environmental Assessment

cc w/encl: See next page

Mr. J. S. Keenan  
Carolina Power & Light Company

Brunswick Steam Electric Plant  
Units 1 and 2

cc:

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Donnie J. Ashley, Project Manager, Section 2  
Project Directorate II  
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Docket Nos. 50-325 and 50-324

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cc w/encl: See next page

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UNITED STATES NUCLEAR REGULATORY COMMISSIONCAROLINA POWER & LIGHT COMPANYDOCKET NOS. 50-325 AND 50-324BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption from Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix G, for Facility Operating License Nos. DPR-71 and DPR-62 issued to Carolina Power & Light Company (CP&L, the licensee), for operation of the Brunswick Steam Electric Plant, Units 1 and 2, located in Brunswick County, North Carolina. As required by 10 CFR 51.21, the NRC is issuing this environmental assessment and finding of no significant impact.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action:

The proposed action would allow CP&L to use American Society of Mechanical Engineers (ASME) Code Case N-640 as the basis for establishing the fracture toughness values used in pressure-temperature (P-T) limit calculations. Code Case N-640 permits application of the lower bound static initiation fracture toughness value equation ( $K_{Ic}$  equation) as the basis for establishing the P-T curves in lieu of using the lower bound crack arrest fracture toughness value equation (i.e., the  $K_{Ia}$  equation, the method invoked by Appendix G to Section XI of the ASME Code) as the basis for the curves.

The proposed action is in accordance with the licensee's application dated May 1, 2001, as supplemented by letter dated August 20, 2001.

The Need for the Proposed Action:

10 CFR 50.60 requires that all light-water nuclear power reactors must meet the fracture toughness requirements of Appendix G of 10 CFR 50. 10 CFR Part 50, Appendix G requires

P-T limit curves to be at least as conservative as limits obtained by following the methods of analysis and the margins of safety of Appendix G of Section XI of the ASME Code. Requests for exemptions to the requirements of 10 CFR Part 50, Appendices G and H, may be submitted pursuant to 10 CFR 50.60(b), which allows licensees to use alternatives to the respective fracture toughness and reactor vessel material surveillance program requirements of the appendices, if an exemption to use the alternatives is granted by the Commission pursuant to 10 CFR 50.12. According to 10 CFR 50.12(a)(1), the Commission may grant exemptions to the requirements of 10 CFR Part 50 if the exemptions are authorized by law, and will not present an undue risk to the public health and safety, and are consistent with the common defense and security.

#### Environmental Impacts of the Proposed Action:

The NRC has completed its evaluation of the proposed action and concludes that the proposed action involves an administrative activity (a recalculation of a required table in technical specifications.)

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed action does not have a potential to affect any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

#### Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no-action” alternative). Denial of the application would result in no change in

current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

The action does not involve the use of any different resource than those previously considered in the Final Environmental Statement for the Brunswick Steam Electric Plant, dated January 1974.

Agencies and Persons Consulted:

On August 27, 2001, the staff consulted with Mr. Johnny James of the North Carolina Department of Environment and Natural Resources, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated May 1, 2001, as supplemented by letter dated August 20, 2001. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov> (the Public Electronic Reading Room). If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC PDR Reference staff at 1-800-397-4209, or 301-415-4737, or by e-mail at [pdrc@nrc.gov](mailto:pdrc@nrc.gov).

Dated at Rockville, Maryland, this 27<sup>th</sup> day of September 2001.

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/**

Richard P. Correia, Chief, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation