

CP&L

Carolina Power & Light Company

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Mr. Samuel J. Chilk
Secretary of the Commission
United States Nuclear Regulatory Commission
Washington, DC 20555

DOCKET NUMBER
PROPOSED RULE

PR-50

(45 FR 65466)

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-324 AND 50-525
LICENSE NOS. DPR-62 AND DPR-71
PETITION OF CAROLINA POWER & LIGHT COMPANY
FOR EXEMPTION FROM CERTAIN REQUIREMENTS OF 10CFR50.44(c)

Dear Mr. Chilk:

Pursuant to 10 CFR 50.12(a), Carolina Power & Light Company ("CP&L") hereby petitions the Nuclear Regulatory Commission ("NRC" or "the Commission") for exemption from certain of the requirements of the Commission's final rule establishing interim requirements related to hydrogen control (46 Fed. Reg. 58484, December 2, 1981) with respect to the Brunswick Steam Electric Plant, Unit Nos. 1 and 2 ("Brunswick").

The final rule amended 10 CFR §50.44 to provide, in part:

- (c)(3)(ii) By the end of the first scheduled outage beginning after July 5, 1982 and of sufficient duration to permit required modifications, each light-water nuclear power reactor that relies upon a purge/repressurization system as the primary means for controlling combustible gases following a LOCA shall be provided with either an internal recombiner or the capability to install an external recombiner following the start of an accident. The internal or external recombiners must meet the combustible gas control requirements in paragraph (d) of this section.

Contrary to the provisions of the hydrogen control rule as it was proposed by the Commission, the Supplementary Information accompanying the final rule indicates that Section 50.44 (c)(3)(ii) is intended to impose new requirements upon boiling water reactors such as those at Brunswick. Each of

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the Brunswick Units is equipped with an inerted Mark I containment and a Containment Atmosphere Dilution ("CAD") System as the primary means of combustible gas control. The final rule apparently requires that reactors such as those at Brunswick "be provided with either an internal recombiner or the capability to install an external recombiner" following the start of an accident.¹

As noted above, there was no indication in the proposed rule that recombiners would be required for facilities with inerted containments. Indeed, in a discussion held on September 16, 1981 with the Commission, the NRC Staff stated that it was the intent of the proposed hydrogen control rule that recombiners would not be required for inerted Mark I and Mark II BWRs:

MR. FLEISHMAN: The intent was when we wrote this, that Mark I's and Mark II's would only be required to be inerted. That this rule would apply only to power reactors that rely upon purging pressurization as a primary means of controlling combustible gas. So, this would not apply to Mark I's and II's the way we have this rule written. That was the intent.²

CP&L believes that there is no technical basis for departing from the provisions of Section 50.44 as it existed prior to the promulgation of the final rule and pursuant to which recombiners were not required for inerted BWR's subject to either subsection (f) or (g). The discussion between the Commission and the NRC Staff before the adoption of the final rule indicates that the Staff viewed containment inerting as technically acceptable for short-term, post-accident hydrogen control (metal-water reaction). CP&L also believes that long-term hydrogen control (radiolysis and corrosion) has been overestimated by the NRC staff. This has resulted in a requirement for a hydrogen recombiner design that may not be needed in the long term.

CP&L is working with the BWR Owners' Group (BWROG) to develop a resolution to the new hydrogen control rule. The BWROG has been performing analyses of oxygen generation in a limiting, inerted BWR Mark I containment for various transient and accident events. For Mark I plants (including the Brunswick Units), combustible gas control is based on the control of oxygen, which is not generated by the metal-water reaction during a loss of coolant accident, and is achieved through the use of a nitrogen inerted containment atmosphere. The oxygen deficient atmosphere precludes the occurrence of an uncontrolled hydrogen - oxygen recombination event. The final results of the generic study indicate that the current inerted containment design adequately

¹46 Fed. Reg. 58486

²Tr. at p. 14.

controls combustible gas concentrations without requiring the use of hydrogen recombiners or containment venting (i.e., containment purging and repressurization). The final results of the generic study are expected to be applicable to the Brunswick Units and should provide a basis for demonstrating or achieving compliance with the new hydrogen control rule. A plant specific evaluation of this report is in progress which should demonstrate that the Brunswick units do not rely upon a purge/repressurization system nor hydrogen recombiners as the primary means of combustible gas control.

The provisions of 10 CFR 50.44(c)(3)(ii) became effective January 4, 1982. Section 50.44(c)(3)(ii) requires that each reactor that relies upon a purge/repressurization system as the primary means for combustible gas control following a LOCA be provided with an internal recombiner or the capability to install an external recombiner by the end of the first scheduled outage beginning after July 5, 1982 of sufficient duration to permit the required modifications. At present, the next scheduled outage of sufficient duration for Brunswick Unit 1 is the refueling outage scheduled to begin November 1982. The next scheduled outage of sufficient duration for Brunswick Unit 2 is the 1983 refueling outage scheduled to begin December 1983.

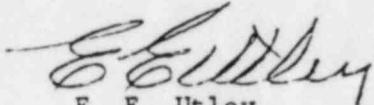
CP&L requires an exemption from the schedule provisions of Section 50.44(c)(3)(ii) pending the completion of CP&L's plant specific evaluation which will demonstrate the compliance of the Brunswick Units with the technical requirements of Section 50.44(c)(3)(ii). CP&L believes that it will be able to provide the Commission with the plant specific evaluation demonstrating compliance by November 15, 1982.

In the event that the results of the BWROG studies and the CP&L plant specific evaluation do not provide adequate technical basis to demonstrate compliance with the technical requirements of Section 50.44(c)(3)(ii), CP&L would still require an exemption from the schedular requirements of Section 50.44(c)(3)(ii). CP&L did not have notice that inserted BWR's would be subject to the requirements of the final rule until its publication on December 2, 1981. CP&L has not had, therefore, adequate time to perform the engineering analyses necessary to make arrangements to procure a recombiner for providing the hydrogen control capability stipulated in 10 CFR 50.44(c)(3)(ii). Manufacturers who could provide external recombiners for the Brunswick Plant have estimated delivery times ranging from eighteen months to two years.

CP&L requests, therefore, that the Commission grant to CP&L an exemption from the schedule requirements of Section 50.44(c)(3)(ii) by establishing the date for compliance at two and one half years from the date

of the Commission's final action on CP&L's submittal to the Commission of its evaluation of the applicability of the BWROG studies to the Brunswick Units and CP&L's demonstration that the Brunswick Units are in compliance with the provisions of the hydrogen control rule.

Yours very truly,

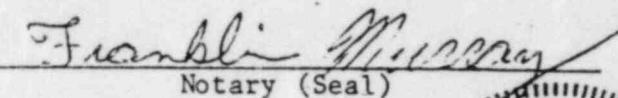


E. E. Utley
Executive Vice President
Power Supply and
Engineering & Construction

WRM/pgp (069C3T1)

cc: Messrs. Mr. J. P. O'Reilly (NRC R-II)
Mr. H. R. Denton (NRC)
Mr. D. B. Vassallo (NRC)
Mr. J. A. Van Vliet (NRC)
Mr. D. O. Myers (NRC-BSEP)

E. E. Utley, having been first duly sworn, did depose and say that the information contained herein is true and correct to his own personal knowledge or based upon information and belief.


Notary (Seal)

My commission expires: OCT 04 1986

