

December 14, 1976

Docket No.: 50-261

Carolina Power & Light Company
ATTN: Mr. J. A. Jones
Senior Vice President
336 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

On December 3, 1976, the Commission issued Amendment No. 25 to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant Unit No. 2. This amendment, as issued, contained errors in the Technical Specifications. Corrections were necessary to reflect the effect of the revised limit on total nuclear peaking factor (F_0) on the numerical limits associated with operation of the Axial Power Distribution Monitoring System (APDMS).

Please remove pages 3.10-2 and 3.10-2a from the Appendix A Technical Specifications, and insert the enclosed corrected pages.

Sincerely,

Original Signed by

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:
Corrected TS pages
3.10-2 & 3.10-2a

cc w/enclosures: See next page

Const 1

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3.10.2

Power Distribution Limits

3.10.2.1

At all times except during low power physics tests, the hot channel factors defined in the basis must meet the following limits:

$$F_Q(Z) \leq (2.20/P) \times K(Z) \text{ for } P > .5$$

$$F_Q(Z) < (4.40) \times K(Z) \text{ for } P \leq .5$$

$$F_{\Delta H}^N < 1.55 (1 + 0.2(1-P))$$

where P is the fraction of licensed power at which the core is operating, K(Z) is the function given in Figure 3.10-3, and

Z is the core height location of F_Q .

3.10.2.1.1

At power levels in excess of 94% licensed power, or if the value of F_{xy} for the unrodded plane of the core exceeds 1.435 as determined from power distribution maps

using the movable detector system, the Axial Power

Distribution Monitoring System (APDMS) will be employed to

monitor $F_Q(Z)$ above a predetermined power level, P_{APDMS}

The limiting value is expressed as:

$$[F_j(Z)S(Z)]_{\max} \leq \frac{1.994}{P} \bar{R}_j (1 + \sigma_j)$$

where:

- a. P is the fraction of licensed power at which the core is operating ($P \leq 1.0$)
- b. \bar{R}_j , for thimble j, is determined from core power maps i and is by definition:

$$\bar{R}_j = 1/6 \sum_{i=1}^6 \frac{F_{qi}^N}{[F(Z)_{ij}S(Z)]_{\max}}$$

F_{qi}^N is the value obtained from a full core map without the measurement uncertainty factor F_u^N . The quantity $F(Z)_{ij}S(Z)$ is the measured value without inclusion of the instrument uncertainty factor F_q^a . Those uncertainty factors, $F_u^N = 1.05$ and $F_q^a = 1.02$, have been included in the limiting value of $1.994/P$.

- c. σ_j is the standard deviation associated with the determination of \bar{R}_j .
- d. $S(Z)$ is the inverse of the $K(Z)$ function given in Figure 3.10-3.

This limit is not applicable during physics tests and excore calibrations.

- 3.10.2.1.2 The predetermined power level at which APDMS initiation is required is given by the relation

$$P_{APDMS} \leq \frac{1.435}{F_{xy}} \times 0.94$$

- 3.10.2.1.3 F_{xy} shall be determined for the unrodded core plane regions away from fuel support grids, located between a core plane elevation 2.0 feet from the top of the core and a core plane elevation 2.0 feet from the bottom of the core, with no full or part length control rod inserted more than 2.0 feet into the core. This determination shall be made from the movable incore detector maps specified in 3.10.2.3.

- 3.10.2.2 If either measured hot channel factor exceeds these values, the reactor power shall be reduced so as not to exceed a fraction of the design value equal to the ratio of the F_Q^N or $F_{\Delta H}^N$ limit to measured value, whichever is less, and the high neutron flux trip setpoint shall be reduced by the same ratio. If subsequent incore mapping cannot, within a 24-hour period, demonstrate that the hot channel factors are met, the over-power ΔT and overtemperature ΔT trip setpoints shall be similarly reduced.

- 3.10.2.3 Following initial loading and at regular monthly intervals thereafter, power distribution maps using the movable detector system, shall be made to confirm that the hot channel factor limits of specification 3.10.2.1 are satisfied. For the purpose of this confirmation: