

AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 4808

| | | | | | | | |
|--|--|--|-----------------------|----------------------|--|-----|-------|
| FROM: Carolina Power & Light Co. Raleigh, N.C. 27602 E.E. Utley | | DATE OF DOC: 8-25-72 | DATE REC'D 8-31-72 | LTR X | MEMO | RPT | OTHER |
| TO: Mr. D. Skovholt | | ORIG 1 signed | CC | OTHER | SENT AEC PDR <input checked="" type="checkbox"/> SENT LOCAL PDR <input checked="" type="checkbox"/> | | |
| CLASS: <u>U</u> PROP INFO | | INPUT | NO CYS REC'D 1 | DOCKET NO: 50-261 | | | |
| DESCRIPTION: Ltr furnishing info on quadrant power tilt limits for H.B. Robinson Plant Unit 2..... | | ENCLOSURES: | | | | | |
| PLANT NAMES: H.B. Robinson Plant Unit 2 | | <div style="text-align: center; border: 1px solid black; padding: 5px;">DO NOT REMOVE ACKNOWLEDGED</div> | | | | | |

FOR ACTION/INFORMATION

DL 8-31-72

| | | | | |
|------------------------|---------------------------|---------------------------|-----------------------------|---|
| BUTLER(L) W/ Copies | KNIEL(L) W/ Copies | VASSALLO(L) W/ Copies | ZIEMANN(L) W/ Copies | <i>Miss.</i> KNIGHTON(ENVIRO) W/ Copies |
| CLARK(L) W/ Copies | SCHWENCER(L) W/ Copies | H. DENTON W/ Copies | CHITWOOD(FM) W/ Copies | YOUNGBLOOD(ENVIRO) W/ Copies |
| GOLLER(L) W/ Copies | STOLZ(L) W/ Copies | SCHEMEL(L) W/ 6 Copies | DICKER(ENVIRO) W/ Copies | W/ Copies |

INTERNAL DISTRIBUTION

| | | | | |
|--|---|--|--|---|
| <u>REG FILE</u> AEC PDR OGC, ROOM P-506A MUNTZING/STAFF CASE GIAMBUSSO BOYD-L(BWR) DEYOUNG-L(PWR) SKOVHOLT-L P. COLLINS | <u>TECH REVIEW</u> HENDRIE SCHROEDER MACCARY LANGE PAWLICKI SHAO KNUTH STELLO MOORE THOMPSON TEDESCO LONG LAINAS BENAROYA | VOLLMER DENTON GRIMES GAMMILL KASTNER BALLARD FINE ENVIRO MULLER DICKER KNIGHTON YOUNGBLOOD PROJECT LEADER | HARLESS F & M SMILEY NUSSBAUMER LIC ASST. SERVICE (L) MASON (L) WILSON (L) KART (L) SMITH (L) GEARIN (L) DIGGS (L) TEETS (L) | WADE (E) SHAFFER (F&M) BROWN (E) G. WILLIAMS (E) A/T IND BRAITMAN SALTZMAN PLANS MCDONALD DUBE INFO C. MILES |
| <u>REG OPR</u> FILE & REGION (2) MORRIS STEELE | | | | |

EXTERNAL DISTRIBUTION

| | | |
|-------------------------------|--------------------------|------------------------|
| ✓ 1-LOCAL PDR Hartville, S.C. | (1)(5X9)-NATIONAL LAB'S | 1-PDR-SAN/LA/NY |
| ✓ 1-DTIE(LAUGHLIN) | ANL/ORNL/PNL | 1-GERALD LELLUCHE |
| ✓ 1-NSIC(BUCHANAN) | 1-R. CARROLL-OC, GT-B227 | BROOKHAVEN NAT. LAB |
| 1-ASLB-YORE/SAYRE | 1-R. CATLIN, A-170-GT | 1-BOLAND, IDAHO FALLS, |
| WOODWARD/H. ST. | 1-CONSULANT'S | IDAHO(50-331 Only) |
| ✓ 16-CYS ACRS HOLDING | NEWMARK/BLUME/AGABIAN | 1-RD..MULLER.. F-309GT |

Carolina Power & Light Company

Raleigh, North Carolina 27602

August 25, 1972

FILE: Robinson 2-O-4-a

Mr. D. J. Skovholt, Asst. Dir. for Operating Reactors
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

H. B. ROBINSON UNIT NO. 2
LICENSE DPR-23
QUADRANT POWER TILT LIMITS



Dear Mr. Skovholt:

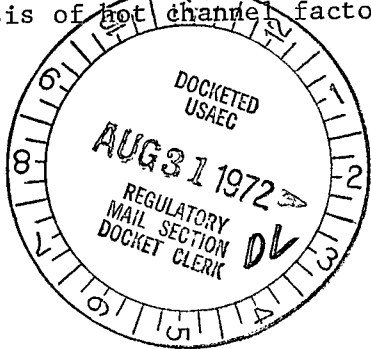
Regulatory

File Cy.

In reply to your concern about possible violations of design peaking factors or safety limits with the present values for quadrant power tilt limits in the H. B. Robinson Unit 2 Technical Specifications, Carolina Power and Light Company believes that no change is required to the present Technical Specifications to continue normal operation at 2200 MWt. Inherent to this discussion are measured plant conditions, as determined by incore power mapping, with respect to hot channel factors.

The peak nuclear hot channel factor, Fq^n , is made up of two components; a radial component, or Fxy^n , and an axial component, or Fz^n . Based on measured values of these quantities, we find for the H. B. Robinson Plant that the maximum value for Fxy^n under normal operating conditions and control rod configurations is 1.44, which has occurred at the beginning of the present cycle of operations, and is the expected value for the radial nuclear hot channel factor for subsequent cycles. The maximum value for Fz^n , based upon numerous calculations and verified by measurements in H. B. Robinson #2, is 1.55 within the limits of axial offset imposed on the plant. If a product of these two numbers is taken, and related to the peak hot channel factor allowed under interim ECCS criteria for Robinson, which is $Fq^n = 2.76$, a factor of 1.24 is required for equality, which may be assigned as a factor for radial power tilt. Assuming, as a conservative value, an increase of 2% in radial peaking factor for every 1% increase in quadrant power over the average power in the core, the resulting quadrant power tilt to maintain the value of 2.76 for Fq^n is 1.12.

Therefore, since the Technical Specifications require that analysis of hot channel factors and necessary corrective actions take



4808

plus

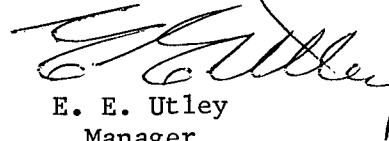
Mr..D. J. Skovholt

-2-

August 25, 1972

place with a quadrant power tilt of 1.10, Carolina Power and Light Company feels that no change to its present Technical Specifications is required to maintain adequate margin to limiting conditions for operation since this value is less than the value resulting from the above analysis.

Yours very truly,



E. E. Utley
Manager
Bulk Power Supply

DBW/za

cc: Messrs. C. D. Barham
N. B. Bessac
B. J. Furr
R. L. Mayton