

**AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)**

CONTROL NO: 6016

FILE:

FROM: Carolina Power & Light Company Raleigh, N. C. 27602 E. E. Utley			DATE OF DOC 8-1-73	DATE REC'D 8-6-73	LTR X	MEMO	RPT	OTHER
TO: Mr. Schemel			ORIG 2 signed	CC	OTHER	SENT AEC PDR X SENT LOCAL PDR X		
CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D 40		DOCKET NO: 50-261		
XXX								

DESCRIPTION:
Ltr furnishing addl info in support of 100 %
Thermal Power Operation...W/Attached Fig.

ENCLOSURES:

ACKNOWLEDGED

Do Not Remove

PLANT NAME: H. B. Robinson Unit # 2

FOR ACTION/INFORMATION

8-6-73

AB

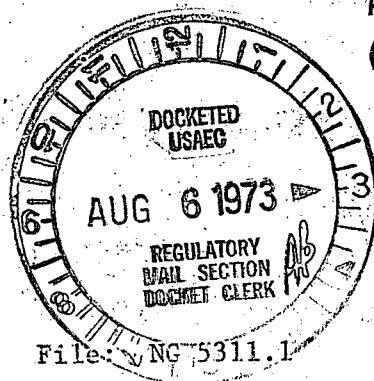
BUTLER(L)	SCHWENCER(L)	ZIEMANN(L)	REGAN(E)
W/ Copies	W/ Copies	W/ Copies	W/ Copies
CLARK(L)	STOLZ(L)	DICKER(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies
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KNIEL(L)	✓ SCHEMEL(L)	YOUNGBLOOD(E)	
W/ Copies	W/ 9 Copies	W/ Copies	W/ Copies

INTERNAL DISTRIBUTION

<u>REG FILE</u>	<u>TECH REVIEW</u>	DENTON	<u>LIC ASST</u>	<u>A/T IND</u>
✓ AEC PDR	HENDRIE	GRIMES	BROWN (E)	BRAITMAN
✓ OGC, ROOM P-506A	SCHROEDER	GAMMILL	DIGGS (L)	SALTZMAN
✓ MUNTZING/STAFF	MACCARY	KASTNER	GEARIN (L)	
CASE	KNIGHT	BALLARD	GOULBOURNE (L)	<u>PLANS</u>
GIAMBUSSO	PAWLICKI	SPANGLER	LEE (L)	MCDONALD
BOYD	SHAO		MAIGRET (L)	DUBE
MOORE (L)(BWR)	STELLO	<u>ENVIRO</u>	SERVICE (L)	
DEYOUNG(L)(PWR)	HOUSTON	MULLER	SHEPPARD (E)	<u>INFO</u>
✓ SKOVHOLT (L)	NOVAK	DICKER	SMITH (L)	C. MILES
P. COLLINS	ROSS	KNIGHTON	✓ TEETS (L)	
	IPPOLITO	YOUNGBLOOD	WADE (E)	
<u>REG OPR</u>	TEDESCO	REGAN	WILLIAMS (E)	
✓ FILE & REGION(3)	LONG	PROJECT LDR	WILSON (L)	
MORRIS	LAINAS			
STEELE	BENAROYA	<u>HARLESS</u>		
	VOLLMER			

EXTERNAL DISTRIBUTION

✓ 1 - LOCAL PDR Hartville, S C.	(1)(2)(9)-NATIONAL LAB'S	1-PDR-SAN/LA/NY
✓ 1 - DTIE(ABERNATHY)	1-R.Schoonmaker, OC, GT, D-323	1-GERALD LELLOUCHE
✓ 1 - NSIC(BUCHANAN)	1-R. CATLIN, E-256-GT	BROOKHAVEN NAT. LAB
1 - ASLB(YORE/SAYRE/ WOODARD/"H" ST.	1-CONSULTANT'S	1-AGMED(WALTER KOESTER
✓ 16 - CYS ACRS HOLDINGx SENT TO LIC ASST.	NEWMARK/BLUME/AGBABIAN	RM-C-427-GT
S. TEETS ON 8-6-73	1-GERALD ULRIKSON...ORNL	1-RD..MULLER..F-309-GT



Regulatory

File Cy,

CP&L

Carolina Power & Light Company

August 1, 1973

Serial: NG-73-230

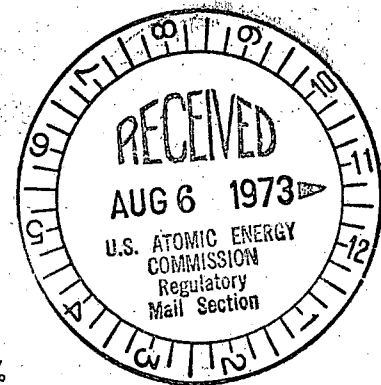
Mr. Robert J. Schemel, Chief
Operating Reactors Branch No. 1
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Schemel:

50-261

H. B. ROBINSON UNIT NO. 2
LICENSE DPR-23

ADDITIONAL INFORMATION IN SUPPORT OF 100%
THERMAL POWER OPERATION



In our response to your letter of June 25, 1973, which was submitted on July 6, 1973, we supplied additional information in six areas of concern which you identified in your letter as requiring resolution before you could act on Carolina Power & Light Company's request for 100% thermal power authorization for H. B. Robinson Unit No. 2. In particular our response involved the use of an axial power shape corresponding to the "corner point" on the F_q versus axial offset flyspeck plot (Figure 4.2 of WCAP-8115) to evaluate the consequences for a LOCA during Cycle 2 operation. The increased sensitivity to a power distribution with the peak core power at a location in the upper half of the core as evidenced by this calculation prompted further studies.

Additional LOCA analyses have been performed based on the peak core power occurring at various axial locations between 6 and 12 feet, for Region 3 densified fuel with and without flattened fuel clad sections. The attached Figure 1 shows the limiting values of kw/ft at full power vs the axial location of the peak power derived from the analyses, based on an 1800°F limit for flattened rods and 2300°F for low burnup, or unflattened, rods. The analysis described in WCAP-8115 was performed with the location of the peak at the 6 foot level consistent with the Westinghouse ECCS Evaluation Model.

This information was developed subsequent to our receiving authorization to operate at 100% power per your letter of July 25, 1973, but the new limitations were incorporated into our operations of the plant under Condition 3 of the Interim Conditions for Operation prior to the initial power increase above 94.8% rated power. For ease of application of the variable kw/ft limit to the axial peaking factor surveillance mode, the curve for the densification penalty factor, $S(z)$, has been appropriately modified above the 6 foot level, as shown in Figure 2.

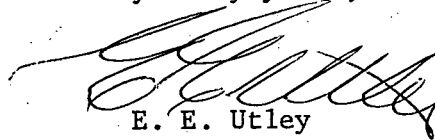
Mr. Robert J. Schemel

- 2 -

August 1, 1973

Imposition of this additional constraint on full power operations ensures that the core will remain within the peak clad temperature limits under the LOCA condition and that continued operation of the plant at power levels up to 100% of rated power will not jeopardize the health and safety of the public.

Very truly yours,

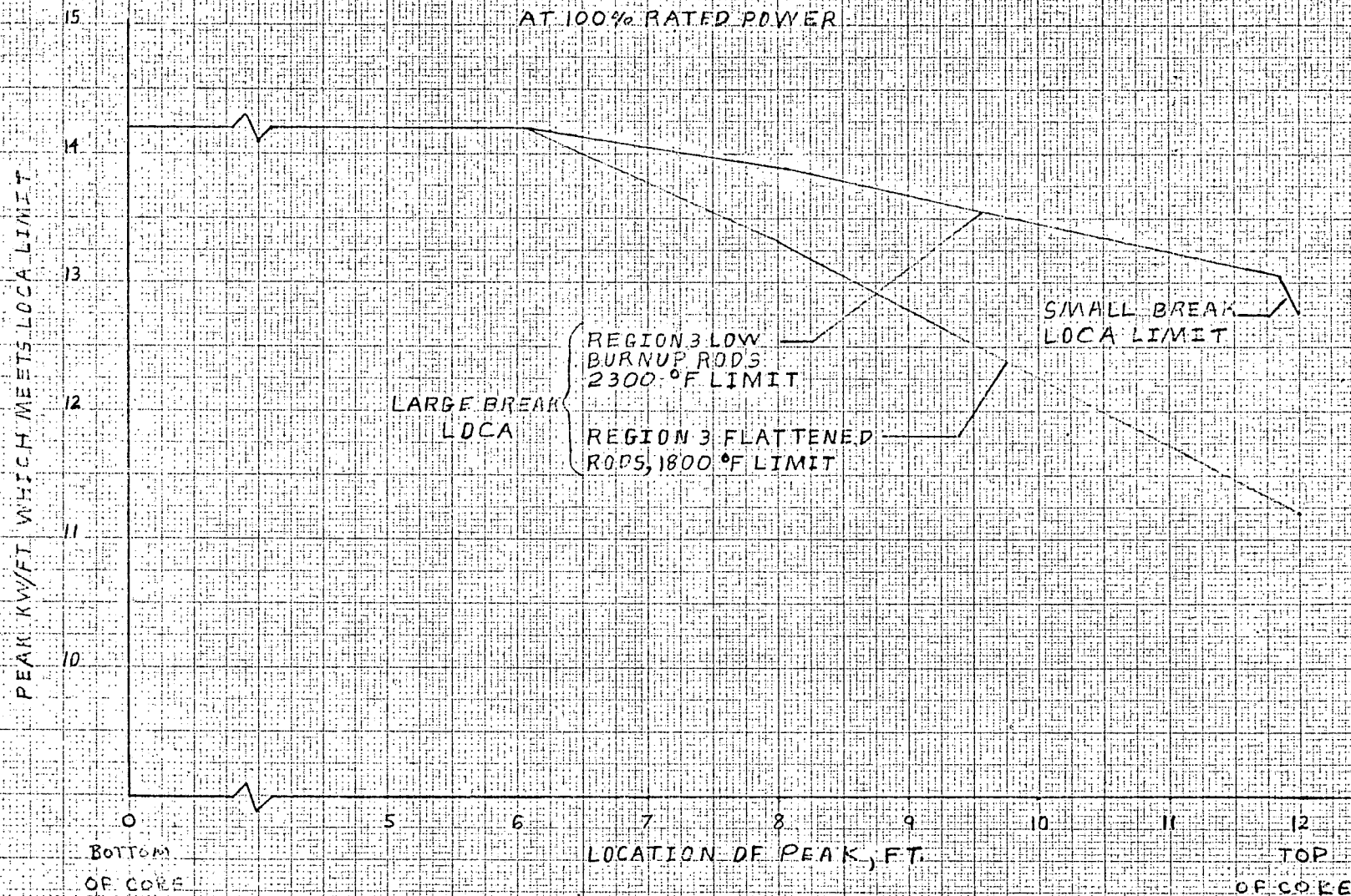


E. E. Utley
Vice-President
Bulk Power Supply

DBW:mvp
Attachment

cc: Messrs. C. D. Barham
N. B. Bessac
B. J. Furr
D. V. Menscer
D. B. Waters

FIGURE 1
H.B. ROBINSON
KW/FT LIMITS VS
PEAK AXIAL LOCATION
AT 100% RATED POWER



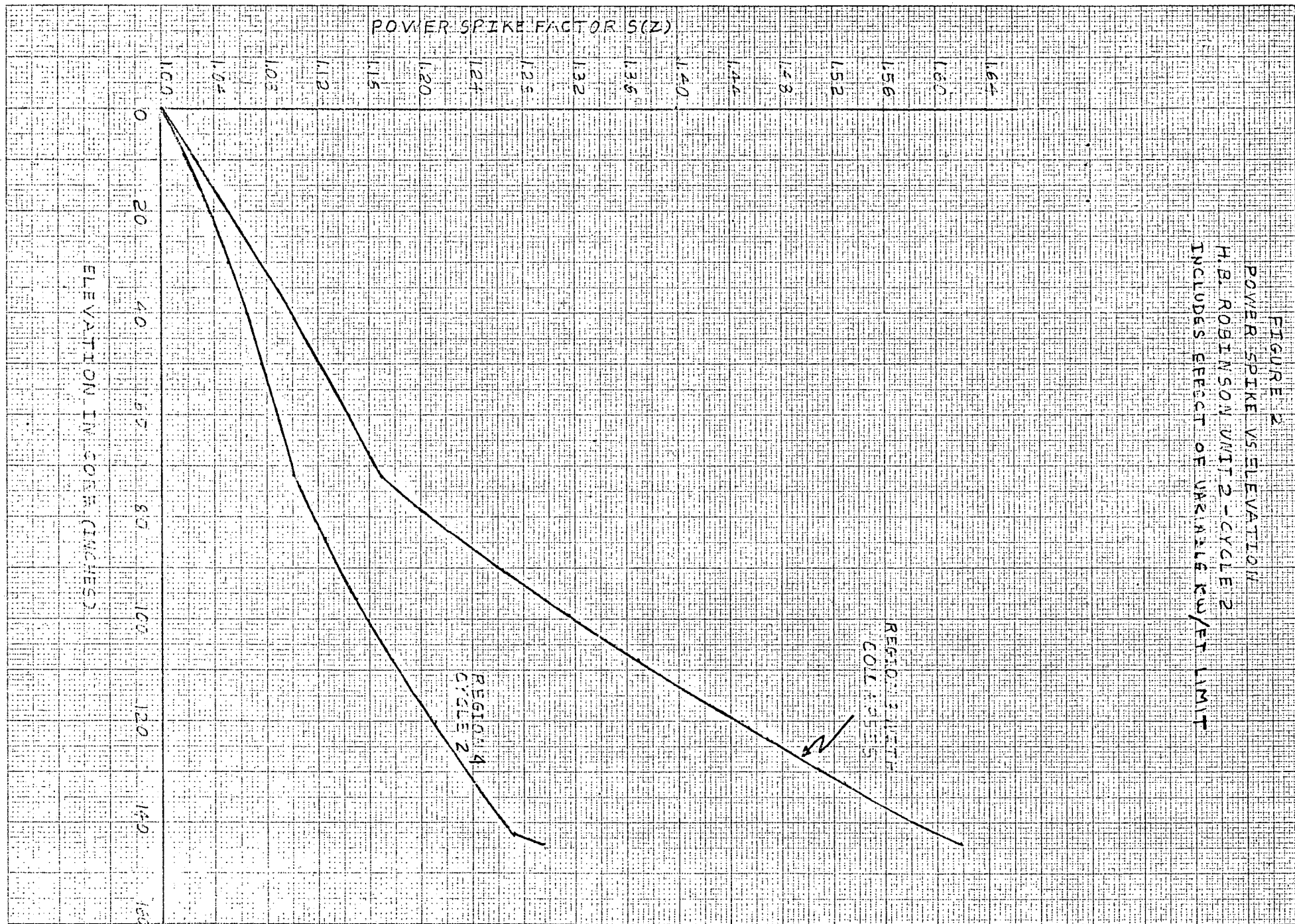


FIGURE 2
 POWER SPIKE VS ELEVATION
 H.B. ROBINSON UNIT 2 - CYCLE 2
 INCLUDES EFFECT OF VARIABLE KW/FT LIMIT