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CONTROL NO: 14128FILE: INCIDENT REPORT FILE

FROM: Carolina Power & Light Co Raleigh, N.C. E.E. Utley		DATE OF DOC 12-18-75	DATE REC'D 12-22-75	LTR XXX	TWX	RPT	OTHER
TO: Robert W. Reid		ORIG ONE 3	CC 39	OTHER	SENT AEC PDR XXX		
					SENT LOCAL PDR XXX		
CLASS	UNCLASS XXXX	PROP INFO	INPUT	NO CYS REC'D 40	DOCKET NO: 50-261		

DESCRIPTION:

Ltr. notarized 12-19-75...During startup physics & power ascension testing, it was discovered that measured radial power distribution in the core was different from predicted power distribution.....

ENCLOSURES:

DO NOT REMOVE

ACKNOWLEDGED

PLANT NAME: H.B. Robinson # 2

FOR ACTION/INFORMATION

VCR 12-22-75

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1 - LOCAL PDR, H.B. Robinson # 2
1 - TIC (ABERNATHY)
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5 - ACRS SENT TO LIC ASST
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Ingram

JH



Carolina Power & Light Company

December 18, 1975

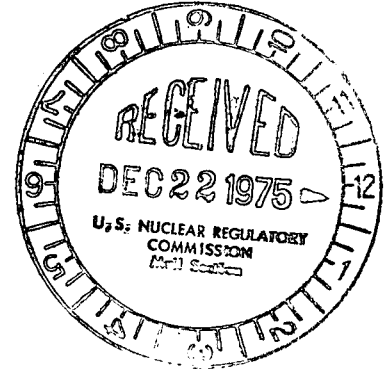
FILE: NG-3514(R)

Director of Nuclear Reactor Regulation
ATTN: Robert W. Reid, Chief
Branch No. 4
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SERIAL: NG-75-2228

DEC 22 1975

RE: H. B. ROBINSON UNIT NO. 2
DOCKET NO. 50-261



Dear Sir:

During the startup physics and power ascension testing for H. B. Robinson Unit No. 2 Cycle 4, it was discovered that the measured radial power distribution in the core was different from the predicted power distribution. Full core movable detector maps showed that the fresh fuel region, located in the outer portion of the core, was producing more power than originally calculated, resulting in predicted enthalpy rise hot channel factors which could exceed the Technical Specification limits at full power. In addition, calculations of the unrodded planar peaking factor F_{xy} , which is an input value to the peaking factor calculations of the Constant Axial Offset Control (CAOC) method, were predicted to exceed the input value of 1.435 used in the calculations applicable to the Robinson Unit No. 2 by about 8%.

Although the limiting value of F_{xy} occurs in the fresh fuel rather than the depleted, once-burned fuel, there is insufficient margin in the F_{xy} bases for the LOCA analysis when applied to the core at a power level of 2200 MWt to offset the discrepancy in the measured value of F_{xy} ; thus, the CAOC method of control is not adequate to ensure that the total peaking factor F_q^T can be maintained less than a value of 2.30. In order to correct this deficiency for the period of time before depletion effects can act to reduce the value of peaking factors within limits, Carolina Power & Light Company proposes to supplement the use of the CAOC method by using the Axial Power Distribution Monitoring System (APDMS) installed in the plant to ensure maintenance of F_q^T under certain conditions. Since the amount that the measured F_{xy} exceeds the limit of 1.435 can be inversely related to the allowable power level that the plant can be operated under with CAOC, the power level for initiation of the APDMS will be given by $P \leq \frac{1.435}{F_{xy}} \times 100\%$, where F_{xy} will be determined from the last full core detector map at a power level greater than 75% power.

The procedures to be used in running with APDMS will be identical to those outlined in the proposed Technical Specification changes accompanying our ECCS submittal of October 2, 1974, and satisfactorily employed during the eight months following that submittal until the CAOC method was instituted. The value of $F_q^T \leq 2.30$ will therefore be maintained with this supplemental means

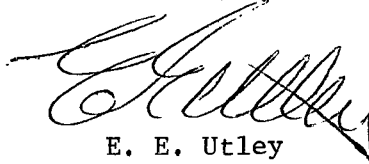
14128

of measurement. The CAOC method will be employed concurrently since it is necessary to control power distributions to avoid exceeding DNB limitations under transient conditions. The DNB calculations derived from the CAOC method remain unchanged since F_{xy} is not an integral part of that calculation but rather is applicable only to F_q^T determinations.

We anticipate that depletion of the core over the next three months will lead to a significant flattening of the core power distribution and elimination of the discrepancy in F_{xy} . At that time the CAOC method can be employed up to the full rated power of 2200 MWt and use of APDMS can be discontinued.

The institution of the APDMS monitoring method as outlined above will commence immediately, and power will not be raised above the predetermined value based on F_{xy} values from maps taken at 90% of full power until APDMS is fully operational. Technical Specification changes will be developed and submitted in early January to support the above commitment.

Yours very truly,



E. E. Utley
Vice-President
Bulk Power Supply

RLM/sh

cc: Mr. N. C. Moseley

Sworn to and subscribed before me this 19th day of December, 1975.


Notary Public

My Commission Expires: October 19, 1980