AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 4921

FILE: mis. corr.

FROM:	DATE OF DOC	DATE REC'D	LTR	MEMO	RPT	OTHER
Carolina Power & Light Company Raleigh, N. C. 27602 J. A. Jones	5-31-74	6-3-74	X			

TO:	ORIG	CC	OTHER	SENT AEC PDR	SENT LOCAL PDR
Mr. O'Leary	1 signed			x	x

CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D	DOCKET NO:
	XXXX			1	50-324/325

DESCRIPTION:
Ltr furnishing info concerning end of cycle scram reactivity.....

DIST PER POWELL

PLANT NAME: Brunswick Units 1 & 2

ENCLOSURES:

Do Not Remove
ACKNOWLEDGED

FOR ACTION/INFORMATION 6-6-74 AB

BUTLER(L) W/ 2Copies	SCHWENCER(L) W/ Copies	ZIEMANN(L) W/ Copies	REGAN(E) W/ Copies
CLARK(L) W/ Copies	STOLZ(L) W/ Copies	DICKER(E) W/ Copies	W/ Copies
PARR(L) W/ Copies	VASSALLO(L) W/ Copies	KNIGHTON(E) W/ Copies	W/ Copies
KNIEL(L) W/ Copies	PURPLE (L) W/ Copies	YOUNGBLOOD(E) W/ Copies	W/ Copies

INTERNAL DISTRIBUTION

REG FILE(2)	TECH REVIEW	DENTON		A/T IND
AEC PDR (2)	HENDRIE	GRIMES	LIC ASST	BRAITMAN
OGC, ROOM P-506A	SCHROEDER	GAMMILL	DIGGS (L)	SALTZMAN
MUNTZING/STAFF	MACCARY	KASTNER	GEARIN (L)	B. HURT
CASE	KNIGHT	BALLARD	GOULBOURNE (L)	PLANS
GIAMBUSSO	PAWLICKI	SPANGLER	LEE (L)	MCDONALD
BOYD	SHAO		MAIGRET (L)	DUBE w/Input
MOORE (L)(BWR)	STELLO	ENVIRO	REED (E)	
DEYOUNG(L)(PWR)	HOUSTON	MULLER	SERVICE (L)	INFO
SKOVHOLT (L)	NOVAK	DICKER	SHEPPARD (L)	C. MILES
GOLLER(L)	ROSS	KNIGHTON	SLATER (E)	KLECKER
P. COLLINS	IPPOLITO	YOUNGBLOOD	SMITH (L)	EISENHUT
DENISE	TEDESCO	REGAN	TEETS (L)	
REG OPR	LONG	PROJECT LDR	WADE (E)	AOR FILE
FILE & REGION(3)	LAINAS		WILLIAMS (E)	D. THOMPSON (2)
MORRIS	BENAROYA	HARLESS	WILSON (L)	
	VOLLMER			

EXTERNAL DISTRIBUTION CB

1 - LOCAL PDR Southport, N. C.
1 - TIC (ABERNATHY)
1 - NSIC(BUCHANAN)
1 - ASLB
1 - P. R. DAVIS (AEROJET NUCLEAR)
16 - CYS ACRS ~~HOLDING~~ SENT TO LIC ASST. M. MAIGRET ON 6-6-74

(1)(2)(10)-NATIONAL LAB'S
1-ASLBP(E/W Bldg,Rm 529)
1-W. PENNINGTON, Rm E-201 GT
1-CONSULTANT'S
NEWMARK/BLUME/AGBABIAN
1-GERALD ULRIKSON...ORNL
1-B & M SWINEBROAD, Rm E-201 GT

1-PDR-SAN/LA/NY
1-GERALD LELLOUCHE
BROOKHAVEN NAT. LAB
1-AGMED(Ruth Gussman) RM-B-127, GT.
1-RD..MULLER..F-309 GT

Regulatory

CP&L

Carolina Power & Light Company

May 31, 1974

Mr. John F. O'Leary
Directorate of Licensing
Office of Regulation
U. S. Atomic Energy Commission
Washington, D. C. 20545

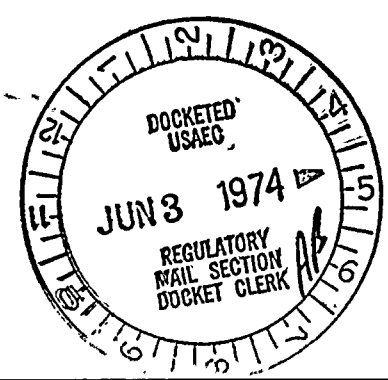
RE: DOCKET NOS. 50-324 AND 50-325
END OF CYCLE SCRAM REACTIVITY

Dear Mr. O'Leary:

The General Electric Company (GE), through the use of improved analytical techniques and broader operational experience, has identified a change in the expected end of cycle reactivity for reload BWR cores. The operation of a BWR is such that the relative axial burnup is greater at the bottom of the core than at the top. As a result, the axial reactivity worth at the end of cycle is shifted upward for reload cores. In addition, toward the end of cycle, most of the control rods are fully withdrawn from the core. Thus, during initial control rod insertion, the scram reactivity rate is lower. The result of this lesser negative reactivity insertion rate is an increase in heat flux and reactor pressure during certain abnormal operating transients. The most limiting of these transients is turbine trip with failure of the bypass valves to operate.

GE has indicated that certain modifications will be necessary to resolve this issue as it applies to the Brunswick Steam Electric Plant (BSEP). The purpose of this letter is to provide information regarding CP&L action to be taken to resolve this issue to the satisfaction of the Regulatory Staff. Since this issue will not become a safety concern until the initial refueling outage of Unit 2, total resolution is not necessary for operation during the first cycle. The General Electric Company has been meeting with the AEC to generically resolve this issue and submittals to the AEC on both the GESSAR (STN-50-477) and Monticello (50-263) dockets have also been made. When the proposed resolutions have been finalized and prove satisfactory to the AEC, a complete analysis of the corrective action for Units 1 and 2 will be submitted to the Regulatory Staff.

Because of the economic impact of undertaking modifications after a plant has begun operation, it is CP&L's intention to complete certain work prior to plant startup. Two basic changes in hardware are intended to resolve this issue. These modifications involve safety/relief (S/R) valves and the addition of a prompt relief trip (PRT) system. The following provides a background on the changes that will be made and how details of the changes will be forwarded to the AEC.



4921

336 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

Safety/Relief Valves Modification

Safety/relief valve capacity will be increased to 830,000 lbs/hr at 103% of 1080 psig.

The safety valves will be removed and replaced by S/R valves. A total of 11 S/R valves will be installed on each unit.

CP&L intends to complete all work associated with modifying valve capacity and installation of the S/R valves before initial plant operation. This installation will allow all safety/relief valves to function in a manner identical to their present function, and the 11 valves will provide adequate vessel overpressure protection for the first cycle. The installation will not be affected by the new PRT system (discussed in detail below).

To verify that adequate protection during the first fuel cycle is provided by this modification, CP&L will submit a revised overpressure protection analysis for review by the Regulatory Staff by June 30, 1974.

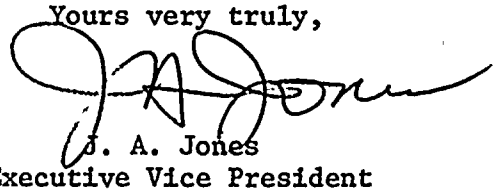
Prompt Relief Trip System

The PRT system is part of the protective system and will not be implemented until the second cycle of Unit 2. The system opens S/R valves following a turbine trip with failure of bypass valves to open. CP&L will complete as much wiring as possible associated with the PRT within the drywell prior to plant startup, but the solenoids on the S/R valves will not be physically connected to PRT wires. The remaining wiring will be completed before or during the first refueling outage.

Before PRT is placed in service, documentation will be submitted covering all the necessary details of the system and analytical results of its implementation. This will be submitted before the initial refueling outage of Unit 2 on a review schedule that is agreeable to the Regulatory Staff.

The modifications mentioned, although not necessary for safety purposes during the first operating cycle, can be installed for operation during the first cycle with no risk to the safe operation of the plant nor to the health and safety of the public.

Yours very truly,



J. A. Jones
Executive Vice President