

AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 5084

FILE: misc

FROM: Carolina Power & Light Company Raleigh, N. C. 27602 E. E. Utley			DATE OF DOC 6-4-74	DATE REC'D 6-6-74	LTR	MEMO	RPT	OTHER FACSIMILE
TO: J. F. O'Leary			ORIG NONE	CC	OTHER	SENT AEC PDR X SENT LOCAL PDR X		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 1		DOCKET NO: 50-261		

DESCRIPTION:
Ltr furnishing addl info in support of 2300
MWT uprating.....

ENCLOSURES:

DO NOT REMOVE

ACKNOWLEDGED

PLANT NAME: H. B. Robinson Unit #2

FOR ACTION/INFORMATION 6-7-74 GC

BUTLER(L) W/ Copies	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/ 9 Copies	YOUNGBLOOD(E) W/ Copies	W/ Copies

INTERNAL DISTRIBUTION

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

✓ 1 - LOCAL PDR <u>Hartsville, S. C.</u>	(1)(2)(10)-NATIONAL LAB'S	1-PDR-SAN/LA/NY
✓ 1 - TIC (ABERNATHY)	1-ASLBP(E/W Bldg, Rm 529)	1-GERALD LELLOUCHE
✓ 1 - NSIC(BUCHANAN)	1-W. PENNINGTON, Rm E-201 GT	BROOKHAVEN NAT. LAB
1 - ASLB	1-CONSULTANT'S	1-ACMED(Ruth Gussman)
1 - P. R. DAVIS (AEROJET NUCLEAR)	NEWMARK/BLUME/AGBABIAN	RM-B-127, GT.
✓ 16 - CYS ACRS XXXXXXXX SENT TO LIC. ASST.	1-GERALD ULRIKSON...ORNL	1-RD..MULLER..F-309 GT
6-7-74 TEETS	1-B & M SWINEBROAD, Rm E-201 GT	

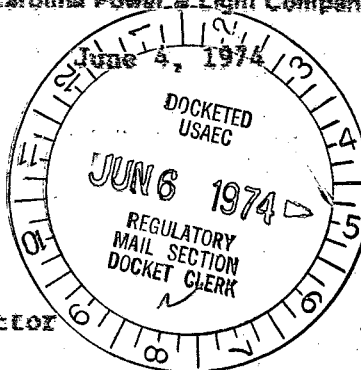
CP&L

Carolina Power & Light Company

Rec'd 6/5/74
Beth-008
3:15 p.m.

Regulatory Docket File

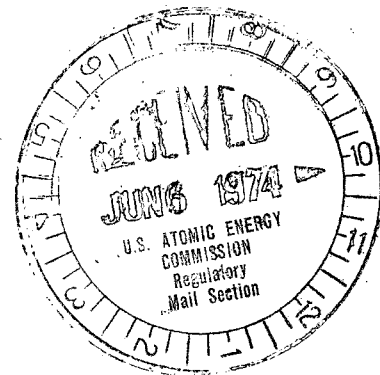
File: NC-3514



Serial: NG-74-692

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

E50-261



Dear Mr. O'Leary:

H. B. Robinson Unit No. 2

License DFR-23

Additional Information in Support of 2300 MW Upgrading

During the preparation of the staff evaluation report for the upgrading of H. B. Robinson Unit No. 2, Carolina Power & Light Company was requested to supply additional information to allow a recalculation of the off-site population dose due to the design basis accident. By copy of this letter, the information requested is formally submitted to the Atomic Energy Commission.

The staff requested additional information concerning the operation and performance of the core spray system during the post-accident phase, as well as a calculation of containment volumes reached by the spray and an evaluation of the effectiveness of forced mixing in compartments not directly contacted by the spray droplets.

The core spray system information is presented below:

1. Spray system flow rate - 1151 gpm (both injection and recirculation) (Page 6.4-5 FSAR)
2. Spray pH - 9.1 during injection
9.0 initial during recirculation
3. ECCS flow - 7125 gpm (Table 6.2-7 FSAR)
4. Length of injection phase - 42 minutes
5. Refueling water storage tank volume (minimum usable) - 350,000 gal. (Table 6.2-6 FSAR)
6. Spray additive tank volume (minimum usable) - 2505 gal. (Table 6.4-3 FSAR)

June 4, 1974

7. Spray additive flow rate - 12 gpm (Table 6.4-2 FSAR)

8. Minimum final sump pH - 8.6

Additional information on the core spray system operation and its effectiveness in reducing iodine concentrations inside containment may be found in Section 6.4 and 14.3.4 of the FSAR.

The values of 1161 gpm recirculation spray flow rate and initial recirculation spray pH of 9.0 are inconsistent, since the value of 1161 gpm was chosen as a conservative estimate of flow rate for lack of a detailed analysis of the recirculation spray system. The flow rate will be higher due to the increased suction head on the spray pumps during recirculation. The pH value of 9.0 is based on an estimate of 1500 gpm spray flow rate and 12 gpm spray additive flow during recirculation. These assumptions provide a conservative estimate for spray system performance during the recirculation phase.

The containment volumes for each region of the containment is presented below. The corresponding letter designation for each region is obtained by reference to the attached figure. Also presented is the information concerning forced mixing in each of the regions.

<u>Region</u>	<u>Volume (ft³)</u>	<u>Air Changes/hour</u>
A	5.78×10^5	0
B	9.94×10^5	7.8
C	1.35×10^5	5.3
D	1.28×10^5	1.65
E	2.64×10^5	27.0

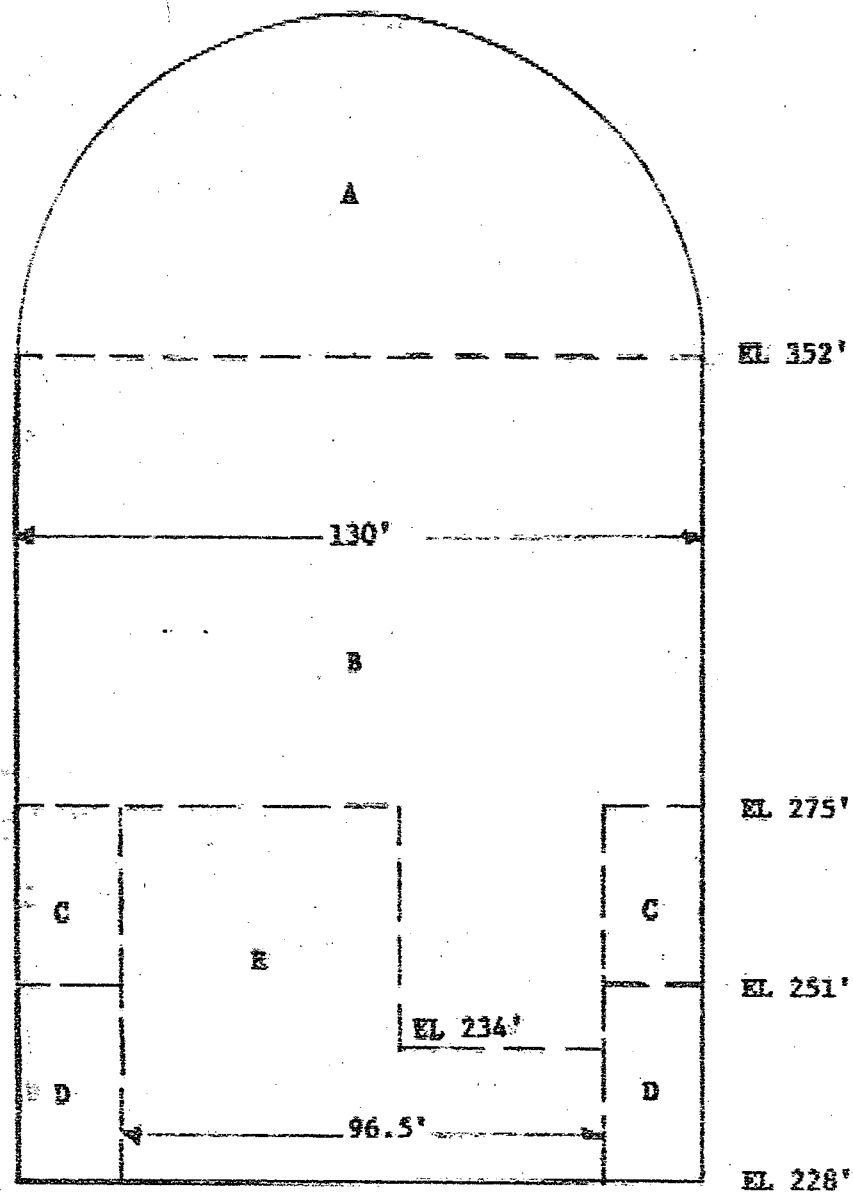
The air change information is based on a study of the fan cooler system, and assumes that only two out of the four fan coolers (each rated at 65,000 cfm) are operating. Thus, forced mixing in the containment and especially in regions C, D and E, which see somewhat less than full penetration by falling spray droplets, is considered to be sufficient to allow the complete containment atmosphere to be affected by the iodine removal capabilities of the spray.

DEW:mvp
Attachment

Yours very truly,

cc: Messrs. N. B. Bessac
T. E. Bowman
B. J. Furr
W. E. Graham
D. V. Menscer
D. B. Waters
E. A. Watson

E. E. Utley
Vice-President
Bulk Power Supply



H. B. ROBINSON - CONTAINMENT OUTLINE