

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

2353

CONTROL NO: _____

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FROM: Carolina Power & Light Company Raleigh, N.C. 27602 Mr. E.E. Utley			DATE OF DOC 3-12-74	DATE REC'D 3-20-74	LTR X	MEMO	RPT	OTHER
TO: J.F. O'Leary			ORIG 3 signed	CC	OTHER	SENT AEC PDR <u>XXX</u> SENT LOCAL PDR <u>XXX</u>		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 40		DOCKET NO: 50-261		

DESCRIPTION:
 Ltr furn add'l info concerning Input Data Required for Analyses of Steam Generator Tube Rupture and Steam Line Break Accidents.... as requested by the AEC STAFF.....trans the following....

ENCLOSURES:
 INPUT DATA FOR ANALYSES OF Steam Generator Tube Rupture & Steam Line Break Accidents.

ACKNOWLEDGED
 (40 cys encl rec'd)
DO NOT REMOVE

PLANT NAME: H.B. Robinson #2

FOR ACTION/INFORMATION 3-21-74 JB

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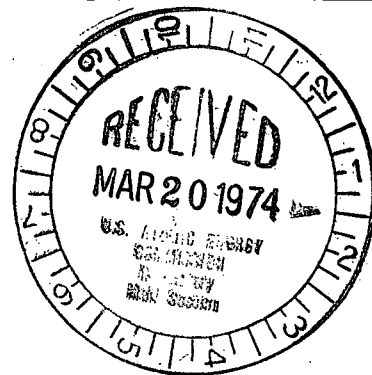
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✓ 1 - LOCAL PDR <u>Hartsville, S.C.</u> ✓ 1 - DTIE (ABERNATHY) ✓ 1 - NSIC (BUCHANAN) 1 - ASLB (YORE/SAYRE/WOODARD/"H" ST.) ✓ 16 - CYS ACRS XXXXXXXX Sent to Teets 3-21-74	(1) (2X10) NATIONAL LAB'S 1-ASLBP (E/W Bldg, Rm 529) 1-W. PENNINGTON, Rm E-201 GT 1-CONSULTANT'S NEWMARK/BLUME/AGBABIAN 1-GERALD ULRIKSON...ORNL	1-PDR-SAN/LA/NY 1-GERALD LELLOUCHE BROOKHAVEN NAT. LAB 1-AGMED (Ruth Gussman) RM-B-127, GT. 1-RD..MULLER..F-309 GT
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Carolina Power & Light Company

March 12, 1974



File: NG-3514

Serial: NG-74-313

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


50-261

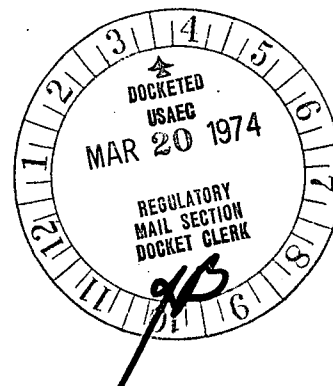
Dear Mr. O'Leary:

H. B. ROBINSON UNIT NO. 2
LICENSE DPR-23
INPUT DATA REQUIRED FOR ANALYSES OF STEAM GENERATOR TUBE
RUPTURE AND STEAM LINE BREAK ACCIDENTS

By copy of this letter, Carolina Power & Light Company submits additional data in support of our request for uprating the H. B. Robinson Unit No. 2 Plant to a power level of 2300 MWt. This data was requested by members of your staff and is intended for computer analysis of steam generator tube rupture and steam line break accidents. Where possible, available data was obtained from the FSAR, the Technical Specifications, and the proposed revisions to the FSAR and Technical Specifications submitted with our Operating License Amendment Application on February 1, 1974, and are so identified. Other data was obtained from the reactor vendor, Westinghouse, and plant records.

Yours very truly,


E. E. Utley
Vice-President
Bulk Power Supply



DBW:mvp
Enclosure

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

2353

INPUT DATA REQUIRED FOR ANALYSES OF STEAM GENERATOR TUBE RUPTURE AND
STEAM LINE BREAK ACCIDENTS.

Reactor Power Rating (Mwth) = 2300 (p. 1.5-1, Revised FSAR)

Number of Steam Generators = 3

Supplier of Steam Generators = Westinghouse

Primary Coolant

Mass (lb) = 422,304

Average operating temperature ($^{\circ}\text{F}$) = 575.4 (Table 1.4-1, line 21
Revised FSAR)

Average operating pressure (psig) = 2250 (Table 1.4-1, line 5
Revised FSAR)

Operating primary to secondary leakage (gpm) = 1.0 (Section 3.1.5
Revised Technical
Specifications)

Amount of primary coolant that leaks through
double-ended tube rupture (lb) = 70,000 lb. (Page 14.2.4-3, FSAR)

Approximate mass of metal in contact with primary coolant
(i.e., reactor vessel, internals, pumps, etc.). This
parameter is used for ECCS calculations. (lb) = 2.52×10^6

Safety injection water temperature ($^{\circ}\text{F}$) = 160°F max

Letdown rate (lb/min) = 497.1 (Table 9.2-3, FSAR)

Secondary Coolant

Mass of water in SG at time of accident (lb) = 142,613	} (Derived from Table 4.1-4 Revised FSAR)
Mass of steam in SG at time of accident (lb) = 3760	
Total SG secondary side volume (ft^3) = 4729	

Secondary side operating temperature ($^{\circ}\text{F}$) = Steam temp 523° full load (Table 4.1-4, Revised FSAR)
Steam Temp 547° no load

Secondary side operating pressure (psig) = 835 full load - (Table 4.1-4, Revised FSAR)
1005 no load

Secondary Coolant (ctd.)

SG safety valve set point pressure (psig) = 1085 to 1139 (Page 10.3-5 FSAR)

Total secondary system water and steam mass (lb) = 1,430,000 estimated maximum

Total steam flow rate at rated power (lb/hr) = 10,068,845 (Page 3.4-2 Revised Technical Specifications)

Turbine bypass capacity (%) = 40% condenser - 10% relief (Page 10.3-3 FSAR)

Auxiliary feedwater temperature ($^{\circ}\text{F}$) = 60-90 (estimated)

SG blowdown rate (operating conditions) (gpm) = 12.5/SG (Page 6.8-3 WCAP-8115)

SG blowdown tank capacity (lb) = 1400 at 212°F

Air ejector flow rate (cfm) = 25-30

Condenser hot well capacity (gallons) = 48,500 normal operating
200,000 maximum capacity

Cooling rate after isolation of failed SG with no offsite power ($^{\circ}\text{F/hr}$) = Sufficient to achieve RHR conditions in 8 hours

Time required for isolation of SG following tube rupture accident (min) = 30 (Page 14.2.4-3, FSAR)

Time required for isolation of SG following steam line break accident (min) = 10 seconds to close stop valves

Site Characteristics

$X/Q \text{ (sec/m}^3\text{)} = 8.9 \times 10^{-4} \text{ (0-2 hrs.) (Page 6.8-6, WCAP-8115)}$

Distance to site boundary (meters) = 425 (Table 14.3.5-4, FSAR)

Wind speed (m/sec) = 1.0 (Table 2.7-2, FSAR)