

AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL  
(TEMPORARY FORM)

CONTROL NO: 6611

FROM: Carolina Power & Light Co. Raleigh, N.C. 27602 E.E. Utley		DATE OF DOC:	DATE REC'D	LTR	MEMO	RPT	OTHER
		11-30-72	12-4-72	X			
TO:		ORIG	CC	OTHER	SENT AEC PDR <input checked="" type="checkbox"/> SENT LOCAL PDR <input checked="" type="checkbox"/>		
Mr. John F. O'Leary		1 signed					
CLASS: <u>U</u> PROP INFO		INPUT	NO CYS REC'D	DOCKET NO:			
			1	50-261			
DESCRIPTION: Ltr rpt a problem on 11-5-72 when the power opr relief valve (RV-2) on the "B" steam line failed to close after being remotely opened by the control operator.....			ENCLOSURES:				
<p>★ PLEASE CIRCULATE-INSUFFICIENT CYS FOR FULL DISTRIBUTION</p> <p>PLANT NAMES: H.B. Robinson Unit 2</p>			<p align="center"><b>DO NOT REMOVE</b> <b>ACKNOWLEDGED</b></p>				

FOR ACTION/INFORMATION

DL 12-4-72

BUTLER(L)	SCHWENGER(L)	SCHEMEL(L)	KNIGHTON(E)
W/ Copies	W/ Copies	W/ 6 Copies	W/ Copies
CLARK(L)	STOLZ(L)	ZIEMANN(L)	YOUNGBLOOD(E)
W/ Copies	W/ Copies	W/ Copies	W/ Copies
GOLLER(L)	VASSALLO(L)	CHITWOOD(FM)	REGAN(E)
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KNIEL(L)	H. DENTON	DICKER(E)	
W/ Copies	W/ Copies	W/ Copies	W/ Copies

INTERNAL DISTRIBUTION

<u>REG FILE</u>	TECH REVIEW	VOLLMER	HARLESS	WADE	E
AEC PDR	HENDRIE	DENTON		SHAFFER	F & M
OGC, ROOM P-506A	SCHROEDER	GRIMES	F & M	BROWN	E
MUNTZING/STAFF	MACCARY	GAMMILL	SMILEY	G. WILLIAMS	E
CASE	LANGE(2)	KASTNER	NUSSBAUMER	E. GOULBOURNE	L
GIAMBUSSO	PAWLICKI	BALLARD		A/T IND	
BOYD-L(BWR)	SHAO	SPANGLER	LIC ASST.	BRATTMAN	
DEYOUNG-L(PWR)	KNUTH		SERVICE L	SALTZMAN	
SKOVHOLT-L	STELLO	ENVIRO	MASON L		
P. COLLINS	MOORE	MULLER	WILSON L	PLANS	
	HOUSTON	DICKER	MAIGRET L	MCDONALD	
REG OPR	TEDESCO	KNIGHTON	SMITH L	DUBE	
FILE & REGION (2)	LONG	YOUNGBLOOD	GEARIN L		
MORRIS	LAINAS	PROJ LEADER	DIGGS L	INFO	
STELLE	BENAROYA		TEETS L	C. MILES	
		REGAN	LEE L		

EXTERNAL DISTRIBUTION

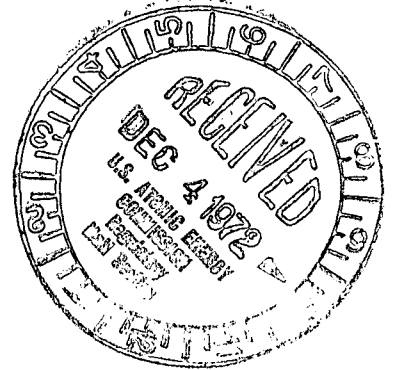
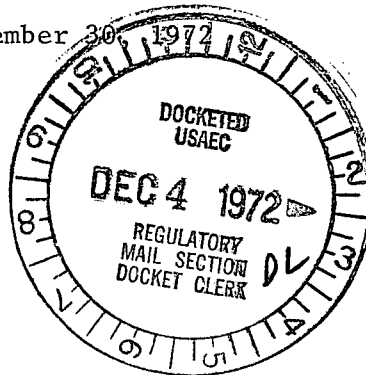
1-LOCAL PDR Hartville, S.C.	(1)(5)(9)-NATIONAL LAB'S	1-PDR-SAN/LA/NY
1-DTIE(ABERNATHY)	1-R. CARROLL-OC, GT-B227	1-GERALD LELLOUCHE
1-NSIC(BUCHANAN)	1-R. CATLIN, E-256-GT	BROOKHAVEN NAT. LAB
1-ASLB-YORE/SAYRE	1-CONSULANT'S	1-AGMED(WALTER KOESTER,
WOODWARD/H. ST.	NEWMARK/BLUME/AGABIAN	Rm C-427, GT)
16-CYS ACRS <del>XXXXXXXX</del>		1-RD...MULLER...F-309GT
SENT TO LIC. ASST.		
S. TEETS ON 12-4-72		



Carolina Power & Light Company

50-261

November 30, 1972



Mr. John F. O'Leary  
Directorate of Licensing  
U. S. Atomic Energy Commission  
Phillips Building  
7920 Norfolk Avenue  
Bethesda, Maryland 20014

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

MALFUNCTION OF POWER OPERATED RELIEF VALVE

Regulatory

File Cy

Dear Mr. O'Leary:

In accordance with Section 6.6.1.c Technical Specifications, it is reported that at 0333, November 5, 1972, with the plant in a hot shutdown condition, power operated relief valve (RV-2) on the "B" steam line failed to close after being remotely opened by the control operator. This malfunction initiated an unplanned plant cooldown. However, cooldown rates and plant conditions permitted an orderly plant cooldown to the cold shutdown condition.

Plant conditions immediately preceding and at the time of the incident were as follows: At 2330, November 4, 1972, reactor power had been reduced to 70% to perform a weekly turbine valve test. At about 0103, November 5, 1972, difficulties were encountered in the turbine valve testing and a rapid reduction in electrical load from 520 MW to 150 MW was experienced. As a result of this transient, the operator elected to manually trip the reactor. The steam dump system operated satisfactorily to control steam generator temperature and pressure. However, when the no-load T average was reached, power operated relief valve RV-1 malfunctioned and remained open for five minutes, reducing plant primary temperature to 509°F. Emergency boration was initiated for two minutes during this transient and was secured once plant conditions had stabilized.

At 0326, all requirements for a reactor startup were met and control rod withdrawal begun. Reactor coolant temperature was being maintained at approximately 547°F using the main condenser dump valves and the power operated relief valves. At 0333, with the reactor still subcritical, power operated relief valve RV-2 opened and would not close, initiating a cooldown of the primary system. Efforts to fail RV-2 shut by isolation of the control air and pulling electrical fuses were unsuccessful. The control rods were

inserted and emergency boration begun at 0348. At 0349 safety injection actuated as a result of coincident low level and pressure in the pressurizer. At approximately 0430, and based on an analysis of the pressure and temperature transients, it was decided to cool the plant to a cold shutdown condition. Emergency boration was secured about 0440 and safety injection at 0506. At 0900, the residual heat removal system was placed in service and by 1500 the reactor coolant system was approximately 200°F.

No safety limits or cooldown rates were exceeded during the transients and cooldown. The engineered safety systems operated as expected with the exception of safety injection valve SI-867A which did not open on the safety injection signal. The redundant valve in this system, SI-867B, performed as designed establishing the required flow path. Immediately following the incident, the torque switch on valve SI-867A was adjusted and the operation of the valve tested.

The release of activity through RV-2 was small and well within authorized release limits. It is calculated that the gross beta gamma particulate activity released was 0.217 millicuries, and that the tritium released was 1.561 millicuries.

The reactor incident resulted from power operated relief valve sticking in the open position. When the valve was disassembled for inspection, the inner valve and guide bushing were found to be badly scored. The inner valve and guide bushing were polished on RV-2 and, as a precautionary measure, RV-1 and RV-3 were also disassembled and polished. The valve vendor was consulted and concurred in the repairs effected. Discussion with the valve vendor concerning the selection of valve internal materials have been held. Modification of valve internals to prevent future scoring are being investigated and will be accomplished if engineering studies in progress indicate this to be a reasonable solution to the problem. In the interim, power operated relief valve operation will be minimized.

A meeting of the Plant Nuclear Safety Committee was held November 5, 1972, to discuss the incident. On November 7, 1972, a meeting of the Company Nuclear Safety Committee was held to review the incident and the plans for return to power. This Committee recommended that a careful leak check and inspection of all safety injection penetrations of the primary system be made prior to making the reactor critical. The Plant Nuclear Safety Committee met again on November 8, 1972, to discuss the incident further. After reviewing all available data, it was concluded that no unresolved safety question existed and that after following the precautions recommended by the Company Nuclear Safety Committee, that the plant could return to power.

As recommended, and prior to reactor startup, the reactor coolant piping was inspected at the following conditions:

<u>Date</u>	<u>Primary Temperature °F</u>	<u>Primary Pressure Psig.</u>
Nov. 7	255	400
Nov. 8	410	650
Nov. 8	500	1500
Nov. 8	500	2235

The areas where safety injection penetrations enter the primary system were given a thorough visual inspection. No abnormal conditions were observed. At 1317, November 8, 1972, a primary leakage rate test was performed and a total leakage of 0.17 gpm determined.

Additionally, the three power operated relief valves were successfully tested at secondary pressure of 85 psig and 700 psig prior to critical operation.

Operation of the plant since this incident has been normal and no further problems have been experienced with the power operated relief valves.

Yours very truly,



E. E. Utley  
Vice President  
Bulk Power Supply

NBB/za

cc: Mr. C. D. Barham  
Mr. N. B. Bessac  
Mr. B. J. Furr  
Mr. S. Grant