

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL  
(TEMPORARY FORM)

CONTROL NO: 14339

FILE: INCIDENT REPORT FILE

FROM: Carolina Pwr & Light Co Raleigh, NC E E Utley			DATE OF DOC 12-22-75	DATE REC'D 12-30-75	LTR XXXX	TWX	RPT	OTHER
TO: Mr Moseley			ORIG one signed	CC	OTHER	SENT AEC PDR <u>XX</u> SENT LOCAL PDR <u>XX</u>		
CLASS	UNCLASS XXXXXXX	PROP INFO	INPUT	NO CYS REC'D 1		DOCKET NO: 50-261		

DESCRIPTION:

Ltr trans the following:

ENCLOSURES:

Abnormal Occurrence #75-19 on 12-8-75  
concerning excessive boron concentration  
.....

PLANT NAME: Robinson #2

FOR ACTION/INFORMATION

1-2-76 ehf

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	LEAR (L) W/ Copies
PARR (L) W/ Copies	VASSALLO (L) W/ Copies	KNIGHTON (E) W/ Copies	SPELS W/ Copies
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*Read (3)*

INTERNAL DISTRIBUTION

<del>REG FILE</del>	TECH REVIEW	DENTON	LIC ASST	A/T IND
<del>NRC PDR</del>	<del>SCHROEDER</del>	**GRIMES	R. DIGGS (L)	BRAITMAN
<del>OGC, ROOM P-506A</del>	<del>MACCARY</del>	<del>GAMMILL</del>	H. GEARIN (L)	SALTZMAN
<del>GOSSICK/STAFF</del>	KNIGHT	KASTNER	E. GOULBOURNE (L)	MELTZ
<del>CASE</del>	PAWLICKI	BALLARD	P. KREUTZER (E)	
GIAMBUSSO	SHAO	SPANGLER	J. LEE (L)	PLANS
BOYD	**STELLO		M. RUSHBROOK (L)	MCDONALD
MOORE (L)	**HOUSTON	ENVIRO	S. REED (E)	CHAPMAN
DEYOUNG (L)	**NOVAK	MULLER	M. SERVICE (L)	DUBE (Ltr)
SKOVHOLT (L)	<del>ROSS</del>	DICKER	S. SHEPPARD (L)	E. COUPE
GOLLER (L) (Ltr)	<del>IPPOLITO</del>	KNIGHTON	M. SLATER (E)	PETERSON
P. COLLINS	<del>TEDESCO</del>	YOUNGBLOOD	H. SMITH (L)	HARTFIELD (2)
DENISE	J. COLLINS	REGAN	S. TEETS (L)	<del>KLECKER</del>
REG OPR	LAINAS	PROJECT LDR	G. WILLIAMS (E)	EISENHUT
<del>FILE &amp; REGION (2)</del>	BENAROYA		V. WILSON (L)	*WIGGINTON
<del>MIPC/PE (3)</del>	<del>VOLLMER</del>	HARLESS	R. INGRAM (L)	<del>F. WILLIAMS</del>
STEELE			M. DUNCAN (E)	<del>HANAUER</del>

EXTERNAL DISTRIBUTION

1 - LOCAL PDR <u>Hartsville, SC</u>	1 - NATIONAL LABS	1 - PDR-SAN/LA/NY
1 - TIC (ABERNATHY) (1)(2)(10)	1 - W. PENNINGTON, Rm E-201 GT	1 - BROOKHAVEN NAT LAB
1 - NSIC (BUCHANAN)	1 - CONSULTANTS	1 - G. ULRIKSON, ORNL
1 - ASLB	NEWMARK/BLUME/AGBABIAN	1 - AGMED (RUTH GUSSMAN)
1 - Newton Anderson		Rm B-127 GT
1 - ACRS SENT TO LIC ASST <u>Ingram</u>		1 - J. D. RUNKLES, Rm E-201
** SEND ONLY TEN DAY REPORTS		GT

*MA h*

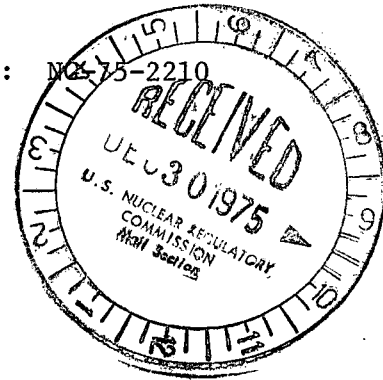


Carolina Power & Light Company

December 22, 1975

File: NG-3513 (R)

Serial: NG-75-2210



Mr. Norman C. Moseley, Director  
U. S. Nuclear Regulatory Commission  
Region II, Suite 818  
230 Peachtree Street, N. W.  
Atlanta, Georgia 30303

Dear Mr. Moseley:

H. B. ROBINSON UNIT NO. 2  
DOCKET 50-261  
BORON CONCENTRATION BELOW LIMITS IN "B"  
SAFETY INJECTION ACCUMULATOR

In accordance with 6.6.2.a of the Technical Specifications for H. B. Robinson Unit No. 2, the attached Abnormal Occurrence Report is submitted for your information. This report fulfills the requirement for a written report within ten days of an Abnormal Occurrence and is in accordance with the format set forth in Regulatory Guideline 1.16, Revision 1.

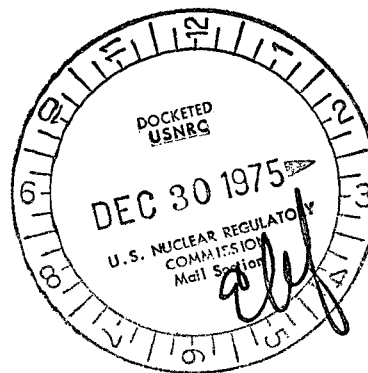
Yours very truly,

E. E. Utley  
Vice-President  
Bulk Power Supply

CSB:mc

Attachment

cc: Messrs. D. C. Knuth  
W. G. McDonald



## ABNORMAL OCCURRENCE REPORT

Robinson File No. 2-0-4-a-1

1. Report No. 50-261/75-19
- 2a. Report Date December 11, 1975
- 2b. Occurrence Date December 8, 1975
3. Facility H. B. Robinson Unit No. 2  
Hartsville, South Carolina 29550

4. Identification of Occurrence

Boron Concentration was found to be below limits in "B" Safety Injection Accumulator. This constitutes a violation of Technical Specification 3.3.1.1.c which is a limiting condition for operation as defined in Technical Specification 1.8.b.

5. Conditions Prior to Occurrence

The reactor was critical after refueling shutdown with low power physics tests in progress.

6. Description of Occurrence

At 0155 hours, December 8, 1975, "B" Accumulator was sampled and boron concentration found to be 1915 ppm. A Radiation Control and Test Technician notified the control room of the sample. However, the Shift Foreman was busy in the plant area and the message was relayed to the Control Operator via a startup physics test engineer. The significance of the sample was not recognized by these personnel and no action was taken. The Shift Foreman was not advised regarding the information.

At 0600 hours a subsequent sample was analyzed to be 1917 ppm boron. The Control Room was called and the Shift Foreman was notified. He then consulted the Operating Supervisor by telephone and they concluded that the Technical Specifications provided an exception for the boron requirement since the plant was at low power with physics tests in progress. Specifically, paragraph 3.3.1.1 of the Technical Specifications states, "The reactor shall not be made critical except for low temperature physics tests, unless the following conditions are met:....". The interpretation was that the phrase "low temperature physics test" applied to low fuel temperatures which exist at low power physics testing and thus the exception was applicable. Another accumulator sample was taken at 0700 hours and found to be 1916 ppm boron concentration. Action was then taken to partially drain and refill "B" accumulator.

Draining of "B" accumulator from 70% level and 644 psig to 0% level (0-100% level span covers only a small portion of total accumulator volume) and 370 psig was completed at 1018 hours. It was then refilled from the refueling water storage tank using the safety injection pumps. The level at 1032 was 72% at 640 psig. At 1040 hours "B" accumulator was sampled and found to have a boron concentration of 1991 ppm. The accumulator was then declared operable at 1055 hours. The plant was maintained at low power levels for physics testing during these evolutions based on the previously stated Technical Specification interpretation.

7. Designation of Apparent Cause of Occurrence

The Safety Injection Accumulators are required to be sampled once a month with a maximum of 45 days between samples. The last previous sample was obtained November 1, 1975, and found to be 2383 ppm boron. This concentration was used for heatup and initial criticality following the November refueling outage. At some time between November 1, 1975 and December 8, 1975, during the refueling outage, apparently enough dilution occurred to reduce the concentration below limits. An exhaustive investigation was conducted, but, due to variable plant conditions prevailing during the outage, lack of sample data for the period in question, and numerous tests conducted during the outage it was not possible to ascertain the exact time and source of apparent dilution. This points out a need for boron analyses following outages to assure that the accumulator concentrations are adequately defined. The dilution was apparently caused by some outage activity. Regardless of the cause, if an analysis is conducted prior to heatup the problem can be identified and corrected in a timely manner. No further investigation is planned to establish the exact cause nor is it felt such investigation would be conclusive.

The cause of the delay in proper notification of the concentration and the realization of the analysis significance is of concern. Upon receiving notification from the laboratory, Control Operators checked their accumulator levels and pressures. However, due to their activity and the fact that the Shift Foreman was out of the Control Room at the time, they failed to notify him concerning the concentration until the second sample was analyzed. This was an oversight on their part. Once the Shift Foreman became aware of the problem he acted appropriately in contacting the Operating Supervisor. The decision that the problem did not constitute an abnormal occurrence was then made in good faith.

A follow-up session of the Plant Nuclear Safety Committee resulted in an indecisive discussion as to reportability of this incident and whether a violation had actually occurred. Close scrutiny of the Technical Specifications revealed that the low temperature referred to regarding physics testing was defined as low reactor coolant

temperature. Therefore the conclusion that low power and low temperature physics testing were the same did not appear valid. The applicability of Technical Specification sections was then questioned. There are sections governing hot shutdown, criticality, and power operation (greater than 2% of rated power) but none that specifically address low power physics testing below 2% power. This further confused the interpretation and no headway was made in reaching a PNSC consensus. Therefore, with the committee still in session Mr. Marvin Sincule of the NRC was called at 1455 hours and requested to resolve the situation with a ruling. He returned the call at 1530 hours with the decision that a violation had occurred and should be reported as such.

8. Analysis of Occurrence

There were no personnel injuries, nor was there a release of radioactive materials involved in this occurrence.

Initial criticality, after the 37 day refueling outage, was achieved at 1053 hours December 7, 1975, and a trip occurred at 1059 hours. The reactor was brought back critical at 1618 hours for initiation of low power physics test. At the time "B" accumulator boron concentration was determined to be out of limits the reactor had been critical, at essentially hot zero power, for nine hours and 42 minutes. No significant decay heat was produced; therefore, an emergency cooldown from this condition would be essentially the same as from hot shutdown.

9. Corrective Action

The accumulator was partially drained and refilled from the refueling water storage tank. Boron concentration was then determined to be 1991 ppm. This completed immediate action.

To rectify the communication problem and failure to promptly recognize that a potential safety hazard existed, Operations have been instructed to notify the Shift Foreman immediately of any condition of this significance.

To assure that accumulator concentrations are positively identified following cold plant conditions which might affect their contents, a change has been incorporated into GP-1A checklist (Overall Plant Operating Procedure) to require sampling and logging of accumulator boron concentration prior to heatup. This action should prevent reoccurrence of the specific concentration violation.

10. Failure Data

There is no previous failure data regarding boron concentration specification violations concerning accumulators.