

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

CONTROL NO: 14315

FILE: INCIDENT REPORT FI

FROM: Carolina Power & Light Co. Raleigh, N.C. E.E. Utley			DATE OF DOC 12-23-75	DATE REC'D 12-30-75	LTR XXX	TWX	RPT	OTHER
TO: N.C. Moseley			ORIG None	CC 30	OTHER	SENT AEC PDR XXX SENT LOCAL PDR XXX		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 30		DOCKET NO: 50-261		

DESCRIPTION:  
Letter trans the following.....

ENCLOSURES:  
Abnormal Occurrence # 75-20, on 12-10-75,  
Concerning Inoperable Containment Pressure  
Protection Channel .....  
  
(30 Cys. Received)

PLANT NAME: H.B. Robinson # 2

**FOR ACTION/INFORMATION**

SAB 12-30-75

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
KNIEL (L) W/ Copies	PURPLE (L) W/ Copies	YOUNGBLOOD (E) W/ Copies	REID W/ 3 Copies

**ACKNOWLEDGED  
DO NOT REMOVE**

**INTERNAL DISTRIBUTION**

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

**EXTERNAL DISTRIBUTION**

1 - LOCAL PDR Hartville, S.C.	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) Rm B-127 GT
1 - Newton Anderson		1 - J. D. RUNKLES, Rm E-201 GT
1 - ACRS SENT TO LIC ASST R. Ingram		
** SEND ONLY TEN DAY REPORTS		

*2df*



Carolina Power & Light Company

December 23, 1975

Regulatory

File

FILE: NG-3513 (R)

SERIAL: NG-75-2222

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

LICENSE NO. DPR-23

CONTAINMENT PRESSURE PROTECTION CHANNEL INOPERABLE

In accordance with 6.6.2.a of the H. B. Robinson Unit No. 2 Technical Specifications, 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.

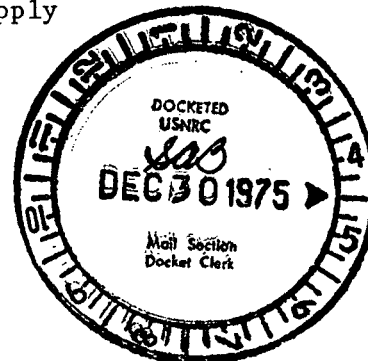
Yours very truly,

E. E. Utley  
Vice President  
Bulk Power Supply

CSB:cs

Attachment

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



14315

## ABNORMAL OCCURRENCE REPORT

1. Report No.: 50-261/75-20
- 2a. Date: December 16, 1975
- 2b. Occurrence Date: December 10, 1975
3. Facility: H. B. Robinson Unit No. 2  
Hartsville, South Carolina 29550

4. Identification of Occurrence

One channel (Channel 950) of containment pressure protection was found inoperable, preventing compliance with the required minimum degree of redundancy as specified in Technical Specification 3.5.3. This constitutes a violation of a limiting condition of operation as defined in Technical Specification, Paragraph 1.8.d. Cold shutdown was not initiated as required for a limiting condition of operation due to the problem being corrected prior to determination of the exact nature of the violation.

5. Conditions Prior to Occurrence

The reactor was critical at less than 2% power during the performance of startup tests following a refueling outage. Periodic Test No. 11.1, Containment Pressure Protection Channel Testing (Bi-weekly) was being conducted.

6. Description of Occurrence

At approximately 1430 on December 10, 1975, Instrument and Control Technicians began performing P.T.-11.1. This periodic test is performed bi-weekly and includes testing operation of the RTGB Status Lights and Annunciator Alarm windows by simulating a signal from the respective Containment Pressure Comparator. At 1500, bistable switch BS-950 was placed in the "Test" position to simulate the required signal and neither the Hi-Hi Containment Pressure Status Light nor Annunciator Alarm window A3-36 lighted. This problem was immediately reported to the Shift Foreman.

Personnel believed at this time that the bistable "Test" position simulated an alarm condition to the logic circuit, thereby maintaining the required minimum of two channels operational and minimum of one degree of redundancy. Therefore, cold shutdown was not initiated.

Repairs were immediately performed by replacing the output fuse on comparator PC-950. The fuse was replaced by 1510.

The violation of a limiting condition of operation was not evidenced during the initial Plant Nuclear Safety Committee meeting following the occurrence. However, later during investigation of the event, it was determined that failure of the comparator output fuse also prevents a simulated signal from being transmitted through the bistable "Test" switch. Therefore, Channel 950 was inoperative regardless of the position of the "Test" switch, and the required minimum degree of redundancy had not been maintained, thereby violating a limiting condition of operation.

7. Designation of Apparent Cause of Occurrence

Failure of containment pressure protection Channel 950 was due to an open output fuse in comparator PC-950. This open fuse prevented the signal from the comparator or the "Test" switch from reaching the logic device and RTGB indicating lights as required.

Failure to initiate cold shutdown upon violation of a limiting condition of operation was due to the fact that personnel did not realize, at that time, that a limiting condition had been violated. This fact became apparent on December 15, 1975, while researching facts surrounding the loss of containment pressure protection Channel 950.

8. Analysis of Occurrence

There are six channels of containment pressure protection associated with initiation of containment spray. Channels 950, 952, and 954 are associated with one logic device which requires signals from two of these channels for actuation of the logic device. Channels 951A, 953A, and 955A are associated with a second logic device which requires signals from two of these channels to actuate the second logic device. Actuation of both logic devices is required for initiation of containment spray.

All channels of containment pressure protection except Channel 950 remained continuously operable. Therefore, failure of Channel 950 could not have precluded automatic initiation of containment spray. Although this is not a desirable situation, the minimum necessary circuitry for automatic initiation of containment spray was still continuously maintained. Additionally, containment spray can be manually initiated from the RTGB.

Regarding the failure to initiate cold shutdown, the plant had been critical, following a refueling outage, since December 7, 1975 and had been undergoing low power startup physics testing. Therefore, only a very small amount of decay heat had been generated, and the consequences of a Loss of Coolant Accident from the hot shutdown condition would not have required the initiation of containment spray to scrub fission products from the containment atmosphere or to reduce containment pressure to control containment outleakage of gaseous fission products.

#### 9. Corrective Action

Inspection of comparator PC 950 revealed an open output fuse. This fuse was replaced and the comparator, including the "Test" switch, then functioned properly. The circuit was checked for high currents, but all parameters appeared normal, indicating that the fuse may have opened due to fatigue. The fuse was replaced in less than ten minutes after the faulty condition was detected. This completed the immediate corrective action.

This situation is unique because containment pressure comparators, unlike others in the plant, are designed to actuate to alarm, instead of the usual de-actuate to alarm. This peculiarity precludes a strictly fail-safe design and requires dependence upon Periodic Testing (such as PT-11.1) and component redundancy for system safety.

In order to bring attention to this peculiarity, a precaution has been added to the "Conditions and Precautions" section of PT-11.1 advising personnel of the fact that an open or blown comparator power or output fuse can cause violation of a limiting condition of operation due to loss of a containment pressure protection channel. It is believed that this warning will make personnel more aware of the possible effects of such a failure, permitting the appropriate action to be taken in a timely manner.

#### 10. Failure Data

No previous failure of this nature has resulted in an abnormal occurrence.



Carolina Power & Light Company

December 23, 1975

FILE: NG-3513 (R)

SERIAL: NG-75-2222

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

LICENSE NO. DPR-23

CONTAINMENT PRESSURE PROTECTION CHANNEL INOPERABLE

In accordance with 6.6.2.a of the H. B. Robinson Unit No. 2 Technical Specifications, 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:cs

Attachment

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

14315

A0-4  
~~5~~

## ABNORMAL OCCURRENCE REPORT

1. Report No.: 50-261/75-20
- 2a. Date: December 16, 1975
- 2b. Occurrence Date: December 10, 1975
3. Facility: H. B. Robinson Unit No. 2  
Hartsville, South Carolina 29550

4. Identification of Occurrence

One channel (Channel 950) of containment pressure protection was found inoperable, preventing compliance with the required minimum degree of redundancy as specified in Technical Specification 3.5.3. This constitutes a violation of a limiting condition of operation as defined in Technical Specification, Paragraph 1.8.d. Cold shutdown was not initiated as required for a limiting condition of operation due to the problem being corrected prior to determination of the exact nature of the violation.

5. Conditions Prior to Occurrence

The reactor was critical at less than 2% power during the performance of startup tests following a refueling outage. Periodic Test No. 11.1, Containment Pressure Protection Channel Testing (Bi-weekly) was being conducted.

6. Description of Occurrence

At approximately 1430 on December 10, 1975, Instrument and Control Technicians began performing P.T.-11.1. This periodic test is performed bi-weekly and includes testing operation of the RTGB Status Lights and Annunciator Alarm windows by simulating a signal from the respective Containment Pressure Comparator. At 1500, bistable switch BS-950 was placed in the "Test" position to simulate the required signal and neither the Hi-Hi Containment Pressure Status Light nor Annunciator Alarm window A3-36 lighted. This problem was immediately reported to the Shift Foreman.

Personnel believed at this time that the bistable "Test" position simulated an alarm condition to the logic circuit, thereby maintaining the required minimum of two channels operational and minimum of one degree of redundancy. Therefore, cold shutdown was not initiated.

Repairs were immediately performed by replacing the output fuse on comparator PC-950. The fuse was replaced by 1510.

The violation of a limiting condition of operation was not evidenced during the initial Plant Nuclear Safety Committee meeting following the occurrence. However, later during investigation of the event, it was determined that failure of the comparator output fuse also prevents a simulated signal from being transmitted through the bistable "Test" switch. Therefore, Channel 950 was inoperative regardless of the position of the "Test" switch, and the required minimum degree of redundancy had not been maintained, thereby violating a limiting condition of operation.

7. Designation of Apparent Cause of Occurrence

Failure of containment pressure protection Channel 950 was due to an open output fuse in comparator PC-950. This open fuse prevented the signal from the comparator or the "Test" switch from reaching the logic device and RTGB indicating lights as required.

Failure to initiate cold shutdown upon violation of a limiting condition of operation was due to the fact that personnel did not realize, at that time, that a limiting condition had been violated. This fact became apparent on December 15, 1975, while researching facts surrounding the loss of containment pressure protection Channel 950.

8. Analysis of Occurrence

There are six channels of containment pressure protection associated with initiation of containment spray. Channels 950, 952, and 954 are associated with one logic device which requires signals from two of these channels for actuation of the logic device. Channels 951A, 953A, and 955A are associated with a second logic device which requires signals from two of these channels to actuate the second logic device. Actuation of both logic devices is required for initiation of containment spray.

All channels of containment pressure protection except Channel 950 remained continuously operable. Therefore, failure of Channel 950 could not have precluded automatic initiation of containment spray. Although this is not a desirable situation, the minimum necessary circuitry for automatic initiation of containment spray was still continuously maintained. Additionally, containment spray can be manually initiated from the RTGB.

Regarding the failure to initiate cold shutdown, the plant had been critical, following a refueling outage, since December 7, 1975 and had been undergoing low power startup physics testing. Therefore, only a very small amount of decay heat had been generated, and the consequences of a Loss of Coolant Accident from the hot shutdown condition would not have required the initiation of containment spray to scrub fission products from the containment atmosphere or to reduce containment pressure to control containment outleakage of gaseous fission products.



9. Corrective Action

Inspection of comparator PC 950 revealed an open output fuse. This fuse was replaced and the comparator, including the "Test" switch, then functioned properly. The circuit was checked for high currents, but all parameters appeared normal, indicating that the fuse may have opened due to fatigue. The fuse was replaced in less than ten minutes after the faulty condition was detected. This completed the immediate corrective action.

This situation is unique because containment pressure comparators, unlike others in the plant, are designed to actuate to alarm, instead of the usual de-actuate to alarm. This peculiarity precludes a strictly fail-safe design and requires dependence upon Periodic Testing (such as PT-11.1) and component redundancy for system safety.

In order to bring attention to this peculiarity, a precaution has been added to the "Conditions and Precautions" section of PT-11.1 advising personnel of the fact that an open or blown comparator power or output fuse can cause violation of a limiting condition of operation due to loss of a containment pressure protection channel. It is believed that this warning will make personnel more aware of the possible effects of such a failure, permitting the appropriate action to be taken in a timely manner.

10. Failure Data

No previous failure of this nature has resulted in an abnormal occurrence.