

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9107300273      DOC. DATE: 91/07/25      NOTARIZED: NO      DOCKET #  
 FACIL: 50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C      05000261  
 AUTH. NAME      AUTHOR AFFILIATION  
 BAUCOM, C.T.      Carolina Power & Light Co.  
 SHEPPARD, J.J.      Carolina Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 91-005-01: on 910412, boron concentration in Safety  
 injection accumulator "B" discovered below administrative  
 limits. Caused by valve backleakage. Specification reviewed &  
 should be corrected. W/910725 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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	NRR/DST/SELB 8D	1 1	NRR/DST/SICB8H3	1 1
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	RGN2 FILE 01	1 1		
EXTERNAL:	EG&G BRYCE, J.H	3 3	L ST LOBBY WARD	1 1
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Carolina Power & Light Company

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JUL 25 1991

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261  
LICENSE NO. DPR-23  
LICENSEE EVENT REPORT 91-005-01

Gentlemen:

The enclosed Supplemental Licensee Event Report (LER) is submitted in accordance with 10 CFR 50.73 and NUREG-1022 including Supplements No. 1 and 2. The purpose of this Supplement is to correct Technical Specification references provided within the Abstract of the LER. These corrections are reflected by a right-hand margin bar. Original copies of this LER should be replaced in their entirety with this Supplement.

We regret any inconvenience that may have been caused by this error. Should you have any further questions regarding this LER, please contact Mr. J. D. Kloosterman at (803) 383-1491.

Very truly yours,

J. J. Sheppard  
Plant General Manager  
H. B. Robinson S. E. Plant

CTB:dwm

Enclosure

cc: Mr. S. D. Ebnetter  
Mr. L. W. Garner  
INPO

9107300273 910725  
PDR ADDON 05000261  
S PDR

NRC Form 366  
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2										DOCKET NUMBER (2) 0 5 0 0 0 2 6 1 1				PAGE (3) 1 OF 0 5		
TITLE (4) TECH. SPEC. 3.0 ENTRY TO ADJUST SI ACCUMULATOR BORON CONCENTRATION																
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)						
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)			
0 4	1 2	9 1	9 1	0 0 5	0 1	0 7	1 9	9 1					0 5 0 0 0			
OPERATING MODE (9) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)														
POWER LEVEL (10) 1 0 0		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)		
		20.405(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)		
		20.405(a)(1)(ii)				50.38(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
		20.405(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)						
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)						
		20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)						
LICENSEE CONTACT FOR THIS LER (12)																
NAME C. T. BAUCOM, SENIOR SPECIALIST										TELEPHONE NUMBER AREA CODE 8 0 3 3 8 3 - 1 2 5 3						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS						
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On April 10, 1991, the boron concentration in Safety Injection Accumulator "B" was found to be below the administrative limit. Subsequent attempts to drain and fill the Accumulator while maintaining level within the required range were unsuccessful in restoring the boron concentration. To correct this situation, on April 12 the Accumulator was drained below the minimum volume required by the Technical Specifications and was refilled with water of the proper boron concentration. Although the Action Statement within Technical Specification 3.3.1.2.a was applied, a subsequent literal reading of the Technical Specifications has established that the proper Action Statement to address this condition is provided by Technical Specification 3.0. The cause of the decreased boron concentration is considered to be check valve backleakage from the RCS into the Accumulator. This situation is being monitored and Work Requests have been written to identify the potential need for inspection or repair. The misapplication of Technical Specification 3.3.1.2.a is attributed to the ambiguous wording of the Specification, and to the belief that entry into this Action Statement was both conservative and appropriate. This Specification will be reviewed and should ultimately be corrected by submittal of a change to this Specification. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B), in accordance with the guidance provided within NUREG-1022, Supplement 1, as a condition prohibited by the plant's Technical Specifications.

## LICENSE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
H. B. ROBINSON, UNIT NO. 2	0 5 0 0 0 2 6 1 9 1	—	0 0 5	—	0 1	0 2	OF 0 5

TEXT (If more space is required, use additional NRC Form 364A's) (17)

## I. Description of Event

On April 12, 1991, H. B. Robinson Steam Electric Plant, Unit No. 2 (HBR2) was operating at 100% power and approximately 730 MW net.<sup>1</sup> Operations personnel were in the process of responding to a decreased boron concentration in Safety Injection (SI) Accumulator "B". This condition was identified on April 10, 1991, based on a boron sample result of 1995 ppm which was below the plant's administrative limit of 2000 ppm. Following identification of the decreased boron concentration, Operations personnel attempted to increase the boron concentration by draining and refilling the Accumulator. However, to ensure the continued operability of the Accumulator, the level was required to be maintained between the Technical Specification limits of 61.5% and 80.4%. This allowed only a small volume of water to be "exchanged", and significantly limited the effectiveness of attempts to bring the boron concentration to within the desired range. It should be noted, however, that at no time did the boron concentration decrease below the limit of 1950 ppm as required by Technical Specification 3.3.1.1.b.

On April 12, 1991, based on the ineffectiveness of the on-going attempts to increase the Accumulator boron concentration, and to provide needed margin to the Technical Specification limit, it became necessary to drain the Accumulator to below the minimum required level and refill it with water of the proper boron concentration. During this drain/fill evolution, the Accumulator was drained below 825 cubic feet (61.5%), which is the minimum volume required by Technical Specification 3.3.1.1.b. Therefore, for the time period between 1422 hours and 1502 hours, while SI Accumulator "B" was below the minimum required volume, the Accumulator was considered to be inoperable.

<sup>1</sup> H. B. Robinson Steam Electric Plant, Unit No. 2 is a Westinghouse pressurized water reactor power plant in commercial operation since March 1971.

## LICENSING EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
H. B. ROBINSON, UNIT NO. 2	0 5 0 0 0 2 6 1	9 1	— 0 0 5	— 0 1	0 3	OF 0 5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

During the time when the Accumulator was inoperable, the Action Statement for Technical Specification 3.3.1.2.a was implemented which allows one Accumulator to be "isolated for a period not to exceed four hours." This was believed to be consistent with past applications of this Specification. Further, this was considered to be conservative due to the more limiting time requirements imposed by this Action Statement, versus those imposed by Technical Specification 3.0 which would require that the plant be placed in hot shutdown within eight hours of the Accumulator becoming inoperable. However, a literal reading of Technical Specification 3.3.1.2.a shows that this Action Statement only applies to an "isolated" Accumulator. An Action Statement does not exist to specifically address an Accumulator which is made inoperable due to being below the minimum required volume. Therefore, the proper Action Statement to address this condition was provided by Technical Specification 3.0.

The Accumulator was refilled to the proper volume and declared operable at 1502 hours. The results of a boron sample analysis provided at 1537 hours showed the "as left" boron concentration to be 2035 ppm, which was within the desired range.

## II. Cause of Event

The cause of the decreased boron concentration in SI Accumulator "B" is believed to be dilution from the Reactor Coolant System (RCS) by backleakage through check valves that isolate the Accumulator from the RCS. Two check valves in series, SI-875B and SI-875E, separate the Accumulator discharge from the RCS. As there is no other probable path of inleakage to the Accumulator, backleakage through these check valves is believed to be the source of the dilution. It should be noted that at no time has RCS leakage approached the limit of one gpm provided by Technical Specification 3.1.5.

The misapplication of the Action Statement provided by Technical Specification 3.3.1.2.a was the result of a number of factors. The primary and overriding factor is considered to be the wording of Technical Specification 3.3.1.2. The wording of this Specification implies that the Action Statement of Technical Specification 3.3.1.2.a can be similarly applied to both an "inoperable" and an "isolated" Accumulator. However, a literal reading of Technical Specification 3.3.1.2.a more specifically ties the four hour Action Statement only to an "isolated" Accumulator. An additional inconsistency is the lack of a specific Action Statement to address an SI Accumulator that is made inoperable due to volume, pressure, or boron concentration.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-2104

EXPIRES: 8/31/86

FACILITY NAME (1)  H. B. ROBINSON, UNIT NO. 2	DOCKET NUMBER (2)  0 5 0 0 0 2 6 1	LER NUMBER (6)			PAGE (3)	
		YEAR 9 1	SEQUENTIAL NUMBER - 0 0 5	REVISION NUMBER - 0 1	0 4	OF 0 5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

A further contributing factor to the misapplication of this Specification is a historical interpretation that the four hour time requirement provided by Technical Specification 3.3.1.2.a made this the more conservative and proper Action Statement to enter when an Accumulator became inoperable. Given the ambiguity of the Specification, and when faced with the decision to enter either a four hour or eight hour Action Statement, typically, the more conservative Action Statement was entered. In summary, the Specification with the most conservative time requirement was typically perceived as the most correct Action Statement.

### III. Analysis of Event

As discussed previously, the only aspect of this occurrence which required implementation of any Technical Specification Action Statement was the draining of SI Accumulator "B" to below the minimum required volume of 825 cubic feet. This resulted in the Accumulator being inoperable between 1422 hours and 1502 hours. During this time, SI Accumulators "A" and "C" remained operable as redundant equipment to Accumulator "B". In addition, although Accumulator "B" was below the minimum required volume, the remaining volume was available for core reflood. As such, the overall safety significance of this occurrence is considered to be minimal.

In accordance with NUREG-1022, Supplement No. 1, entry into Technical Specification 3.0 represents a "condition prohibited by the plant's Technical Specifications." Therefore, this Licensee Event Report is submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B).

### IV. Corrective Actions

In order to help verify the source of Accumulator inleakage, and to quantify the rate of inleakage, Operation personnel have established a data log. From April 12 to April 16, this log identified the cumulative inleakage to be 70 gallons. From April 16 to April 26, the data again indicated the cumulative inleakage to be 70 gallons. With this information as a basis, Work Requests were initiated to document and investigate the backleakage through the series of check valves between the RCS and SI Accumulator "B".

To address the misapplication of Technical Specification 3.3.1.2.a, this Specification will be reviewed to determine wording enhancements which can be made to ensure proper and consistent application of associated Action Statements. This review will be completed, with proposed Technical Specification change(s) identified and submitted, as necessary, by November 29, 1991.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (8)

PAGE (3)

H. B. ROBINSON, UNIT NO. 2

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Should this check valve backleakage be a persistent problem throughout the remainder of the operating cycle, the drain/fill evolution and associated entry into Technical Specification 3.0 may be required on a recurring basis. As such, subsequent entries into Technical Specification 3.0 to address this condition will be documented by a Supplement to this Licensee Event Report.

## V. Additional Information

## A. Failed Component Identification

None.

## B. Previous Similar Events

None.