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ACCESSION NBR:9311080081 DOC.DATE: 93/10/29 NOTARIZED: NO DOCKET #  
FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261  
AUTH.NAME AUTHOR AFFILIATION  
CROOK,R.D. Carolina Power & Light Co.  
PEARSON,M.P. Carolina Power & Light Co.  
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 93-012-00:on 931002,EDG B inadvertently started & came  
up to 900 rpm at cold shutdown & came up to 900 rpm due to  
failure of EDG B local/remote switch.Local/remote switch in  
both EDGs A & B replaced.W/931029 ltr.

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

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Carolina Power & Light Company  
Robinson Nuclear Plant  
PO Box 790  
Hartsville SC 29550

October 29, 1993

Robinson File No: 13510C

Serial: RNP/93-2746  
(10CFR50.73)

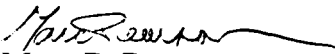
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261  
LICENSE NO. DPR-23  
LICENSEE EVENT REPORT NO. 93-012-00

Gentlemen:

The enclosed Licensee Event Report (LER), is submitted in accordance with 10 CFR 50.73 and NUREG 1022, Supplements No. 1 and 2.

Very truly yours,

  
Marc P. Pearson  
General Manager  
H. B. Robinson S. E. Plant

RDC:sgk  
Enclosure  
c: Mr. S. D. Ebnetter  
Mr. W. T. Orders  
INPO

9311080081 931029  
PDR ADOCK 05000261  
S PDR

Highway 151 and SC 23 Hartsville SC

JE22

NRC FORM 366 (5-92)				U.S. NUCLEAR REGULATORY COMMISSION				APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95				
<b>LICENSEE EVENT REPORT (LER)</b>												
(See reverse for required number of digits/characters for each block)												
FACILITY NAME (1) <b>H. B. ROBINSON, UNIT NO. 2</b>								DOCKET NUMBER (2) <b>05000 261</b>		PAGE (3) <b>1 OF 4</b>		
TITLE (4) <b>ENGINEERED SAFETY FEATURE ACTUATION AT COLD SHUTDOWN</b>												
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 NAME	DOCKET NUMBER		
10	02	93	93	-- 012 --	00	10	29	93	FACILITY NAME	DOCKET NUMBER		
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check one or more) (11)									
POWER LEVEL (10)		0	20.402(b)			20.405(c)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)		73.71(b)	
			20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)		73.71(c)	
			20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)		OTHER	
			20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)	
			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 <b>R. D. Crook, Regulatory Affairs</b>								TELEPHONE NUMBER (Include Area Code) <b>(803) 383-1179</b>				
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)												
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		
B	EK	33	C770	Y								
SUPPLEMENTAL REPORT EXPECTED (14)												
YES (If yes, complete EXPECTED SUBMISSION DATE).						<input checked="" type="checkbox"/> NO		EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<b>ABSTRACT</b> (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16) On October 2, 1993, H. B. Robinson Unit No. 2 was in cold shutdown condition for a scheduled refueling outage. At 1428 hours, a licensee operator was performing an investigation for a "B" Emergency Generator (EDG) Trouble Alarm and depressed the "Local/Remote" switch on the EDG to determine if a faulty switch existed. At this time the "B" EDG inadvertently started and came up to 900 rpm. Following verification that an undervoltage condition did not exist on Emergency Bus E2, the operator shut the engine down from the Generator Control Panel. The "EDG-B Trouble Alarm" remained locked in, and the "B" EDG was declared out of service.  The cause of the inadvertent EDG start is attributed to failure of the "B" EDG Local/Remote switch. This event had no adverse impact on safety because the EDG was operable when the start signal occurred, and would have been capable of performing its intended function had the signal been from a valid source. The Local/Remote switch in both the "B" and the "A" Emergency Diesel Generators was replaced. Subsequent testing demonstrated that the new switch functioned properly and as expected.  This event is reportable pursuant to 10 CFR 50.73(a)(2)(iv) as an event that resulted in actuation of an Engineered Safety Feature.												

NRC FORM 366A  
(5-92)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104  
EXPIRES 5/31/95LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
H. B. Robinson, Unit No. 2	05000261	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		93	-- 012 --	00	

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

I. DESCRIPTION OF EVENT

On October 2, 1993, H. B. Robinson Unit No. 2 was in cold shutdown condition for a scheduled refueling outage. At 1110 hours the "B" Emergency Diesel Generator (EDG) was placed in service following completion of post maintenance testing. Efforts were underway to operate the "B" EDG to support Maintenance Surveillance Test MST-009, "Degraded Voltage Test on E1 and E2 Busses". At approximately 1415 hours, licensee Operations personnel noticed that annunciator APP-010-A3, "EDG-B Trouble Alarm" was locked in. An immediate investigation was initiated to investigate the source of the alarm, and a licensee operator was dispatched to the local EDG control panel in the "B" EDG Room. At this point, the operator noted no alarms on the local control panel, and all other alarm lights were checked as satisfactory. The operator then notified the licensee Shift Supervisor that assistance was needed in investigating the alarm source. Proceeding with the investigation at 1428 hours, the operator pressed the "Local/Remote" switch on the EDG to determine if a faulty switch existed. At this time the "B" EDG inadvertently started and came up to 900 rpm. Following verification that an undervoltage condition did not exist on Emergency Bus E2, the operator shut the engine down from the Generator Control Panel. The "EDG-B Trouble Alarm" remained locked in, and the "B" EDG was declared out of service.

The NRC was notified of this event at 1729 hours in accordance with 10 CFR 50.72(b)(2)(ii) as an actuation of an Engineered Safety Feature (ESF).

II. CAUSE OF EVENT

The cause of this event is contributed to failure of the "B" EDG Local/Remote switch. This component is a Cutler-Hammer Type T Oiltight Selector Switch with a two-position maintained operator and three stacked contact blocks. Each block holds a 'normally open' and a 'normally closed' contact. When connected to their switch operator, these contacts have a dead band where all contacts are open between the counterclockwise position and the clockwise position, regardless of the direction of rotation. Subsequent testing of the switch revealed that, when the switch was being rotated to the "Remote" position, the normally open contact was observed to close well before the switch was at its full clockwise travel.

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(5-92)

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
H. B. Robinson, Unit No. 2	05000261	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
		93	-- 011 --	00	

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

II. CAUSE OF EVENT (CONTINUED)

When the switch was released after allowing the contact to close but before the full clockwise travel was achieved, the switch would slowly rotate counterclockwise on its own and allow the closed contacts to open after a period of time. This slow rotation is attributed to worn contact springs, which allowed a reduction in pressure on the operator's beveled surface. This reduced pressure would cause the slow rotation from the "Remote" position back to the "Local" position. The normal (i.e., "Remote") requires that the contact block springs be continuously compressed. This weakened the springs over the life of the switch assembly, thus allowing a 'mid position' to be achieved.

With regard to the inadvertent "B" EDG start, it is theorized that the Local/Remote switch was in a "mid" position where the close contacts were made, but the switch was not in its full clockwise position. Therefore, when the operator pressed on this switch he gave it the mechanical shock it needed to complete its counterclockwise travel and allow the closed switch to open, thus allowing the "B" EDG to start.

III. ANALYSIS OF EVENT

This event had no adverse impact on safety. The "B" EDG was operable when the start signal occurred, and would have been capable of performing its intended function had the signal been from a valid source.

This event is reportable pursuant to 10 CFR 50.73(a)(2)(iv) as an event that resulted in actuation of an Engineered Safety Feature.

IV. CORRECTIVE ACTIONS

Adverse Condition Report 93-178 was initiated to document this event and to facilitate a root cause investigation.

The Local/Remote switches in both Emergency Diesel Generators were replaced. Because the replacement switch has a new contact block spring, a 'mid-position' will not be created. Subsequent testing of the switch demonstrated that the switch functioned properly and as expected.

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(5-92)

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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
H. B. Robinson, Unit No. 2		05000261		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
				93	-- 012 --	00	

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

V. ADDITIONAL INFORMATION

## A. Previous Similar Events

None

## B. Failed Component Information

The "A" and "B" EDG Local/Remote Switches are manufactured by Cutler-Hammer and are Type T Oiltight Selector Switch