

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) River Bend Station	DOCKET NUMBER (2) 050000458	PAGE (3) 1 OF 04
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TITLE (4)
Reactor Scram Due to Loss of RPS Power

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)																																		
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 4</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="6">POWER LEVEL (10) 000</td> <td><input type="checkbox"/> 20.402(b)</td> <td><input type="checkbox"/> 20.408(a)</td> <td><input checked="" type="checkbox"/> 80.73(a)(2)(iv)</td> <td><input type="checkbox"/> 73.71(b)</td> </tr> <tr> <td><input type="checkbox"/> 20.408(a)(1)(i)</td> <td><input type="checkbox"/> 80.36(a)(1)</td> <td><input type="checkbox"/> 80.73(a)(2)(v)</td> <td><input type="checkbox"/> 73.71(a)</td> </tr> <tr> <td><input type="checkbox"/> 20.408(a)(1)(ii)</td> <td><input type="checkbox"/> 80.36(a)(2)</td> <td><input type="checkbox"/> 80.73(a)(2)(vi)</td> <td rowspan="4">OTHER (Specify in Abstract below and in Text, NRC Form 308A)</td> </tr> <tr> <td><input type="checkbox"/> 20.408(a)(1)(iii)</td> <td><input type="checkbox"/> 80.73(a)(2)(i)</td> <td><input type="checkbox"/> 80.73(a)(2)(vii)(A)</td> </tr> <tr> <td><input type="checkbox"/> 20.408(a)(1)(iv)</td> <td><input type="checkbox"/> 80.73(a)(2)(ii)</td> <td><input type="checkbox"/> 80.73(a)(2)(vii)(B)</td> </tr> <tr> <td><input type="checkbox"/> 20.408(a)(1)(v)</td> <td><input type="checkbox"/> 80.73(a)(2)(iii)</td> <td><input type="checkbox"/> 80.73(a)(2)(x)</td> </tr> </table>												OPERATING MODE (9) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											POWER LEVEL (10) 000	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.408(a)	<input checked="" type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	<input type="checkbox"/> 20.408(a)(1)(i)	<input type="checkbox"/> 80.36(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(a)	<input type="checkbox"/> 20.408(a)(1)(ii)	<input type="checkbox"/> 80.36(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 308A)	<input type="checkbox"/> 20.408(a)(1)(iii)	<input type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(vii)(A)	<input type="checkbox"/> 20.408(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(vii)(B)	<input type="checkbox"/> 20.408(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(x)
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LICENSEE CONTACT FOR THIS LER (12)
NAME: Omar Cassidy - Electrical Engineer
TELEPHONE NUMBER: 504 635-6094

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
B	J.D	IS	E209	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15): MONTH: , DAY: , YEAR:

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

At 2105 on 4/3/86 with the unit in cold shutdown, a Reactor Protection System (RPS) actuation occurred due to a loss of control power to bus B while an intentional one half RPS actuation existed on RPS A. The loss of power also caused an isolation and loss of shutdown cooling and Reactor Water Clean Up (RWCU). By 2148 power was restored, the RPS actuation cleared, and RHR and RWCU put back in service. Investigation determined the loss of RPS power to be caused by a blown power fuse in an Elgar controlled regulating 480/120 VAC transformer. A modification has been initiated to adjust the internal control circuits for this unit. There was no impact on the health and safety of the public as a result of this event.

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

Reported Condition

At 2105 on 4/3/86 with the unit in operational condition 4 (cold shutdown) a RPS and other Engineered Safety Feature actuations occurred.

At the time a control and instrument crew was working in the control room to install permanent test connectors in the circuits for radiation monitoring per Maintenance Work Request (MWR) 17851. An acknowledged one half RPS actuation on RPS A was being maintained in connection with this work. The operator was securing HVK chiller 1D powered from load center 1EJS*SWG1B. Reactor Water Clean Up (RWCU) pumps A and B were running and Residual Heat Removal (RHR) pump A was running in the Shutdown Cooling Mode. Reactor Protection System (RPS) 120 VAC instrument power supply B was being powered from its alternate source (1EHS*MCC14B).

As the operator was securing the HVK chiller as above, RPS supply B tripped. Loss of RPS supply B caused a one half RPS actuation and this along with the one half RPS actuation signal being maintained on RPS A caused a full RPS actuation. Fail safe isolation control circuits being supplied control power from RPS supply B operated to cause an isolation of shutdown cooling and RWCU.

At 2111, the one half RPS actuation signal on A was cleared and at 2127 control power was restored to RPS B from its normal motor generator source. Loop A RHR (shutdown cooling) was restarted at 2145 and RWCU pumps A and B were restarted at 2148.

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TEXT (if more space is required, use additional NRC Form 366A 1) (17)

Investigation

The loss of RPS control power was caused by a blown 200 amp power fuse internal to the Elgar SCR (silicone controlled rectifier) controlled regulating 480/120 VAC transformer that feeds alternate B supply. No evidence of a short circuit, overload or electrical fault was found to have caused the fuse to blow. The Elgar transformer is fed from the same 480 volt load center (through motor control center (MCC) 1EHS*MCC14B) as HVK chiller 1D. Switching the chiller causes a slight voltage fluctuation on the MCC bus. In response to the voltage fluctuation, the Elgar unit apparently incorrectly fired its SCR switches to the buck and boost windings to overload and blow the power fuse.

At River Bend Station, the RPS A and B 120 VAC supplies are normally supplied from individually dedicated motor generator sets which provide carryover capability for power distribution system voltage transients. There are alternate supplies for each RPS bus which can be used during maintenance of the normal supplies. Only these alternate supplies incorporate the Elgar transformers.

Corrective Action

A Maintenance Work Request (MWR-37911) has been initiated to adjust the internal control circuits of the Elgar unit. These adjustments were originally made at the factory. GSU contacted Elgar regarding these adjustments because of a similar previous experience (documented in GSU Condition Report 85-0465).

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

These units, manufactured by Elgar Corporation, are model 503-1-1A Power Line Conditioners.

Safety Assessment

There was no impact on the health and safety of the public as a result of this event. Recirculation pump B was available to provide forced circulation and alternate decay heat removal capabilities were available. If a similar loss of RPS instrument power had occurred during power operation, there would have been a RPS actuation but RHR shutdown cooling would not have been in service. The RWCU system would isolate in any case for the loss of RPS B supply, but is not needed for shutdown. Loss of the RPS instrument power (both A and B supply) results in a RPS actuation because the circuits are constructed deliberately fail safe.



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
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May 3, 1986
RBG-
File Nos. G9.5, G9.25.1.3

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Dear Sir:

River Bend Station - Unit 1
Docket No. 50-458

Please find enclosed Licensee Event Report No. 86-027 for River Bend Station - Unit 1. This report is submitted pursuant to 10CFR50.73.

Sincerely,

J. E. Booker *JEP*
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

TFP JEH
JEB/TFP/DRG/BEH/je

cc: U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

INPO Records Center
1100 Circle 75 Parkway
Atlanta, GA 30339-3064

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