

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9109130162 DOC.DATE: 91/08/29 NOTARIZED: NO DOCKET #
 FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
 AUTH.NAME AUTHOR AFFILIATION
 BACKUS,W.H. Rochester Gas & Electric Corp.
 MECREDY,R.C. Rochester Gas & Electric Corp.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-007-00:on 910731,"B" Emergency Diesel Generator
 started automatically due to initiation signal from Bus 16 &
 17 Undervoltage monitoring/protection sys.Caused temp
 failure.Replace solid state switch.W/910829 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 12
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:License Exp date in accordance with 10CFR2,2.109(9/19/72). 05000244

	RECIPIENT		COPIES			RECIPIENT		COPIES	
	ID CODE/NAME		LTTR	ENCL		ID CODE/NAME		LTTR	ENCL
	PD1-3 LA		1	1		PD1-3 PD		1	1
	JOHNSON,A		1	1					
INTERNAL:	ACNW		2	2		AEOD/DOA		1	1
	AEOD/DSP/TPAB		1	1		AEOD/ROAB/DSP		2	2
	NRR/DET/ECMB 9H		1	1		NRR/DET/EMEB 7E		1	1
	NRR/DLPQ/LHFB10		1	1		NRR/DLPQ/LPEB10		1	1
	NRR/DOEA/OEAB		1	1		NRR/DREP/PRPB11		2	2
	NRR/DST/SELB 8D		1	1		NRR/DST/SICB8H3		1	1
	NRR/DST/SPLB8D1		1	1		NRR/DST/SRXB 8E		1	1
	REG FILE 02		1	1		RES/DSIR/EIB		1	1
	RGNI FILE 01		1	1					
EXTERNAL:	EG&G BRYCE,J.H		3	3		L ST LOBBY WARD		1	1
	NRC PDR		1	1		NSIC MURPHY,G.A		1	1
	NSIC POORE,W.		1	1		NUDOCS FULL TXT		1	1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
 TOTAL NUMBER OF COPIES REQUIRED: LTTR 31 ENCL 31

A04

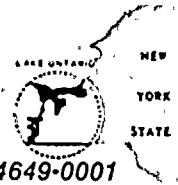




ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER N.Y. 14649-0001

ROBERT C. MECREDDY
Vice President
Ginna Nuclear Production

TELEPHONE
AREA CODE 716 546-2700



August 29, 1991

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

Subject: LER 91-007, Safeguards Buses Undervoltage Relay
Actuations Due to Failed Solid State Switches Causes
Automatic Starts of the "B" Emergency Diesel Generator
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

In accordance with 10 CFR 50.73, Licensee Event Report System, item (a)(2)(iv), which requires a report of, "any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS)", the attached Event Report LER 91-007 is hereby submitted.

This event has in no way affected the public's health and safety.

Very truly yours,

Robert C. Mecreddy
Robert C. Mecreddy

xc: U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Ginna USNRC Senior Resident Inspector

9109130162 910829
PDR ADDCK 05000244
S PDR

Cent No
9129548030
TE22
111



LICENSEE EVENT REPORT (LER)

APPROVED ONS NO. 3180-0104
EXPIRES - 6/31/83

FACILITY NAME (1)										DOCKET NUMBER (2)										PAGE 1		
R.E. Ginna Nuclear Power Plant										0 5 0 0 0 2 4 4										1 of 1		
TITLE (4)																						
Safeguards Buses Undervoltage Relay Actuations Due To Failed Solid State Switches Causes Automatic Starts of the "B" Emergency D/G																						
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	7	3	1	9	1	9	1	0	0	7	0	0	8	2	9	9	1	0 5 0 0 0				
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																				
N		20.402(b)				20.406(a)				X 60.73(a)(2)(h)				73.71(b)								
POWER LEVEL (10)		0 9 8				20.406(a)(1)(i)				60.73(a)(2)(i)				73.71(a)								
		20.406(a)(1)(ii)				60.73(a)(2)(ii)				60.73(a)(2)(iii)				OTHER (Specify in Abstract below and in Test, NRC Form 365A)								
		20.406(a)(1)(iii)				60.73(a)(2)(iv)				60.73(a)(2)(v)												
		20.406(a)(1)(iv)				60.73(a)(2)(vi)				60.73(a)(2)(vii)												
		20.406(a)(1)(v)				60.73(a)(2)(viii)				60.73(a)(2)(ix)												
		20.406(a)(1)(vi)				60.73(a)(2)(x)				60.73(a)(2)(xi)												
LICENSEE CONTACT FOR THIS LER (12)																						
NAME										TELEPHONE NUMBER												
Wesley H. Backus										AREA CODE												
Technical Assistant to the Operations Manager										3 1 5 5 2 4 - 4 4 4 6												
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												
X	J	E	E	C	B	D	E	1	4	6	Y											
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (16)		MONTH	DAY	YEAR						
YES (If yes, complete EXPECTED SUBMISSION DATE)												X NO										

ABSTRACT (Limit to 1400 words, i.e., approximately fifteen single-space typewritten lines) (15)

On July 31, 1991 at 1746 EDST, with the reactor at approximately 98% full power and again on August 2, 1991 at 1049 EDST, with the reactor at approximately 98% full power, the "B" Emergency Diesel Generator started automatically due to an initiation signal from the Bus 16 and Bus 17 Undervoltage Monitoring/Protection Systems.

The "B" Emergency Diesel Generator started normal for both events and attained proper voltage and frequency. By design, it did not close into Bus 16 or Bus 17 because these buses were at their proper voltage fed from their normal power supply.

Immediate operator action was to verify that Bus 16 and Bus 17 were energized and that the "B" Emergency Diesel Generator was operating properly.

The cause of the event was determined to be a temperature related failure of a solid state switch printed circuit board.

Corrective action taken was to replace the solid state switch printed circuit board with a qualified spare, followed by a satisfactory test and return to service. Corrective actions to prevent recurrence are discussed in section (V) (B).



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1) R.E. Ginna Nuclear Power Plant	DOCKET NUMBER (2) 0 5 0 0 0 2 4 4	LER NUMBER (8)			PAGE (3)		
		YEAR 9 1	SEQUENTIAL NUMBER — 0 0 7	REVISION NUMBER — 0 0			
					0 2	OF	1 1

TEXT (If more space is required, use additional NRC Form 368A's) (17)

I. PRE-EVENT PLANT CONDITIONS

This LER covers two separate events, which had the same general cause and consequences, and occurred within a reasonably short length of time.

Prior to both events, the plant was at approximately 98% steady state reactor power with no major activities in progress.

II. DESCRIPTION OF EVENT

A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- o July 31, 1991, 1746 EDST: First event date and time
- o July 31, 1991, 1746 EDST: First event discovery date and time
- o July 31, 1991, 1843 EDST: Safeguards Bus 17 power supply manually transferred to "B" Emergency Diesel Generator to Safeguards 480 volt Bus 17 per T-27.4 (Diesel Generator Operation)
- o August 1, 1991, 0331 EDST: Safeguards 480 volt Bus 17 normal power supply restored
- o August 1, 1991, 0331 EDST: Safeguards 480 volt Bus 17 "B" Emergency Diesel Generator power supply terminated and "B" Emergency Diesel Generator stopped and aligned for auto standby
- o August 2, 1991, 1049 EDST: Second event date and time
- o August 2, 1991, 1049 EDST: Second event discovery date and time

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
R.E. Ginna Nuclear Power Plant	0 5 0 0 0 2 4 4	9 1	- 0 0 7	- 0 0	0 3	OF	1 1

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

- o August 2, 1991, 1321 EDST: Safeguards Bus 16 power supply manually transferred to "B" Emergency Diesel Generator per M-48.13 (Isolation of Bus 16 Undervoltage System For Maintenance, Troubleshooting, Rework and Testing)
- o August 2, 1991, 1707 EDST: Safeguards 480 volt Bus 16 normal power supply restored. "B" Emergency Diesel Generator power supply terminated.
- o August 2, 1991, 1725 EDST: "B" Emergency Diesel Generator stopped and aligned for auto standby

B. EVENT:

On July 31, 1991 at 1746 EDST, with the reactor at approximately 98% full power, the Control Room received the following alarms: L-15 (Bus 17 Undervoltage Safeguards) and J-32 (Emergency Diesel Gen 1B Panel). The Control Room operators immediately verified proper voltage on Bus 17 and that the normal power supply breaker was closed. The Control Room operators also verified that the "B" Emergency Diesel Generator had started and displayed proper voltage and frequency. By design, the "B" Emergency Diesel Generator did not close into Bus 17, as the Bus voltage was normal and was still being supplied by its normal power supply.

Auxiliary operators were dispatched to check the Bus 17 Undervoltage Monitoring/Protection System cabinets and the operation of the "B" Emergency Diesel Generator. The operation of the "B" Emergency Diesel Generator was found to be normal and investigation of Bus 17 Undervoltage Monitoring/Protection System cabinets indicated an odor resembling that of burning electrical insulation and one red indication light and four amber indication lights were illuminated. The red light indicates trouble in the system and the amber lights indicate auxiliary relays have actuated (i.e. Diesel start, Control Room Annunciator, etc.).



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
R.E. Ginna Nuclear Power Plant	0 5 0 0 0 2 4 4	9 1	- 0 0 7	- 0 0	0 4	OF 1	1

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

Subsequently, at 1843 EDST, the power supply to Bus 17 was transferred from the normal supply to the "B" Emergency Diesel Generator per operating procedure, T-27.4 (Diesel Generator Operation). This was done at this time because the Shift Supervisor was unsure of how many channels of undervoltage protection were still operable for Bus 17 and to comply with Technical Specification Table 3.5.1, action statement 7, which states in part that, "any time the number of operable channels is less than the minimum operable channels, either

- a) be at hot shutdown within the next 6 hours and an RCS temperature less than 350°F within the following 6 hours, or
- b) energize the affected bus with a diesel generator."

At 0331 EDST, August 1, 1991, subsequent to the repair, testing, and return to service of Bus 17 Undervoltage Monitoring/Protection System, Bus 17 normal power was restored and the Bus 17 "B" Emergency Diesel Generator power supply terminated. Following this, the "B" Emergency Diesel Generator was stopped and aligned for auto standby.

Again on August 2, 1991 at 1049 EDST, with the reactor at approximately 98% full power, the Control Room received the following alarms: L-7 (Bus 16 Undervoltage Safeguards) and J-32 (Emergency Diesel Gen 1B Panel). The Control Room operators immediately verified proper voltage on Bus 16 and that the normal power supply breaker was closed. The Control Room operators also verified that the "B" Emergency Diesel Generator had started and displayed proper voltage and frequency. By design, the "B" Emergency Diesel Generator did not close into Bus 16, as the bus voltage was normal and was still being supplied by its normal power supply.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
R.E. Ginna Nuclear Power Plant	0 5 0 0 0 2 4 4	9 1	— 0 0 7	— 0 0	0 5	OF	1 1

TEXT (If more space is required, use additional NRC Form 305A's) (17)

Auxiliary operators were dispatched to check the Bus 16 Undervoltage Monitoring/Protection System cabinets and the operation of the "B" Emergency Diesel Generator. The operation of the "B" Emergency Diesel Generator was found to be normal and investigation of Bus 16 Undervoltage Monitoring/Protection System cabinets indicated one red indication light and four amber indications lights.

As this event occurred during normal working hours, Maintenance personnel were dispatched quickly to evaluate the problem with the Bus 16 Undervoltage Monitoring/Protection System. They reported that only one of the Bus 16 Undervoltage Protection channels was affected, thus the Shift Supervisor was not required to load the "B" Emergency Diesel Generator onto Bus 16 per Technical Specifications.

Subsequently, at 1321 EDST, the power supply to Bus 16 was transferred from its normal supply to the "B" Emergency Diesel Generator per Maintenance procedure, M-48.13 (Isolation of Bus 16 undervoltage System For Maintenance, Troubleshooting, Rework and Testing). This transfer was done so the Maintenance Department could repair, test, and return to service, the Bus 16 Undervoltage Monitoring/Protection System.

At 1707 EDST, August 2, 1991, subsequent to the repair, testing, and return to service of the Bus 16 Undervoltage Monitoring/Protection System, Bus 16 normal power supply was restored and the Bus 16 "B" Emergency Diesel Generator power supply terminated.

At 1725 EDST, August 2, 1991, the "B" Emergency Diesel Generator was stopped and aligned for auto standby.

C. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:

None.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
R.E. Ginna Nuclear Power Plant	0500024491	1	007	0	0	6	OF 11

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

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None.

E. METHOD OF DISCOVERY:

The event was immediately apparent due to alarms and indications in the Control Room and at the affected Safeguard Buses Undervoltage Monitoring/Protection System cabinets.

F. OPERATOR ACTION:

Following the Bus 17 undervoltage alarm and the "B" Emergency Diesel Generator automatic start, the Control Room operators immediately verified proper voltage on Bus 17 via its normal power supply and that the "B" Emergency Diesel Generator displayed proper voltage and frequency.

Subsequently, the Control Room operators transferred Bus 17 from its normal supply to the "B" Emergency Diesel Generator per T-27.4 to satisfy plant technical specifications and to facilitate troubleshooting, repairing, and testing of the Bus 17 Undervoltage Monitoring/Protection System.

Following the Bus 16 undervoltage alarm and the "B" Emergency Diesel Generator automatic start, the Control Room operators immediately verified proper voltage on Bus 16 via its normal power supply and that the "B" Emergency Diesel Generator displayed proper voltage and frequency.

Subsequently, the Control Room operators transferred Bus 16 from its normal supply to the "B" Emergency Diesel Generator per M-48.13 to facilitate repairing and testing of the Bus 16 Undervoltage Monitoring/Protection System.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
R.E. Ginna Nuclear Power Plant	0 5 0 0 0 2 4 4	9 1	— 0 0 7	— 0 0	0 7	OF	1 1

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Subsequent to both events, the Control Room operators notified higher supervision and the Nuclear Regulatory Commission (NRC).

G. SAFETY SYSTEM RESPONSES:

The "B" Emergency Diesel Generator automatically started and displayed proper voltage and frequency.

III. CAUSE OF EVENT

A. IMMEDIATE CAUSE:

The automatic actuation of the "B" Emergency Diesel Generator was due to an undervoltage signal from the Bus 17 Undervoltage Monitoring/Protection System for the first event and an undervoltage signal from the Bus 16 Undervoltage Monitoring/Protection System for the second event.

B. INTERMEDIATE CAUSE:

The undervoltage signal from the Bus 17 Undervoltage Monitoring/Protection System was due to the internal failure of the system's solid state switch printed circuit board number one (1).

The undervoltage signal from the Bus 16 Undervoltage Monitoring/Protection System was due to the internal failure of the system's solid state switch printed circuit board number two (2).

The above solid state switches are identical in design and provide the interface mechanism between the solid state undervoltage relays and the mechanical actuation relays.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
R.E. Ginna Nuclear Power Plant	0 5 0 0 0 2 4 4 9 1	—	0 0 7	— 0 0	0 8	OF	1 1

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

C. ROOT CAUSE:

The underlying cause of the internal failure of the system's solid state switch was determined to be, that present circuit design results in fairly high temperatures at the circuit card. This fairly high temperature generally reduces the useful life of specific transistors and causes them to fail prematurely.

IV. ANALYSIS OF EVENT

The events are reportable in accordance with 10 CFR 50.73, Licensee Event Report System, item (a)(2)(iv), which requires reporting of, "any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF) including the Reactor Protection System (RPS)". The starting of the "B" Emergency Diesel Generator was an automatic actuation of an ESF System.

An assessment was performed considering both the safety consequences and implications of this event with the following results and conclusions:

There were no operational or safety consequences or implications attributed to the starting of the "B" Emergency Diesel Generator because:

- o The "B" Emergency Diesel Generator operated as designed.
- o Both Bus 17 power supplies (i.e. normal and emergency) were either in use or available throughout the event.
- o Both Bus 16 power supplies (i.e. normal and emergency) were either in use or available throughout the event.
- o The Bus 16 and Bus 17 undervoltage Monitoring/Protection System failure was in the conservative direction (i.e. the failure actuated the "B" Emergency Diesel Generator).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
R.E. Ginna Nuclear Power Plant	0 5 0 0 0 2 4 4 9	1	0 0 7	0 0	0 9	OF	1 1

TEXT (If more space is required, use additional NRC Form 306A's) (17)

Based on the above, it can be concluded that the public's health and safety was assured at all times.

V. CORRECTIVE ACTION**A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:**

- o The Maintenance Department, after troubleshooting the Bus 16 and Bus 17 Undervoltage Monitoring/Protection System, determined that the problem was a solid state switch printed circuit board in the system.
- o The Maintenance Department replaced the affected solid state switch printed circuit boards with qualified spares, tested the systems satisfactorily and returned them to service.
- o Operations, after the Bus 16 and Bus 17 Undervoltage Monitoring/Protection System was restored to service, returned Bus 16 and Bus 17 to their normal power supply and stopped the "B" Emergency Diesel Generator and aligned it for auto standby.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

The following is an outline of the corrective actions being taken or planned in response to the recent failures of the solid state switch circuit boards located inside the Undervoltage Monitoring/Protection System cabinet:

- o Short Term Response:
 - a) Auxiliary operators are checking each undervoltage cabinet for proper status light indication once per shift.
 - b) Each solid state switch circuit board was visually checked for signs of heat related degradation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

R.E. Ginna Nuclear Power Plant

0 5 0 0 0 2 4 4 9 1 - 0 0 7 - 0 0 1 0 OF 1 1

TEXT (If more space is required, use additional NRC Form 368A's) (17)

- c) A voltage check of each train of Undervoltage Monitoring/Protection was conducted to verify the integrity of the diodes which have previously exhibited heat related degradation.
- o Intermediate Term Response:
- a) Replacement of remaining solid state switch circuit boards which have been in service for an extended time period (service life estimated at 4-5 years) was completed for Bus 16, and for the failed card on Bus 17. In addition, boards were replaced on Bus 14.
- b) The periodic test procedure for testing the undervoltage relays (PT-9.1) was enhanced to include periodic full end-to-end testing.
- c) Full end-to-end testing was performed on Buses 14, 16, 17 and 18, including verification of trip functions that were previously tested annually.
- o Long Term Response:
- a) The Undervoltage System will be modified to eliminate heat related degradation of the solid state switch circuit boards.
- b) Remaining solid state switch circuit boards, which have been in service for an extended time period, will be replaced when parts are available. This includes one card on Bus 17 and two cards on Bus 18.
- c) Other internal components that are affected by heat will be evaluated for periodic replacement.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1) R.E. Ginna Nuclear Power Plant	DOCKET NUMBER (2) 0 5 0 0 0 2 4 4	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	- 0 0 7	- 0 0	1 1	OF 1	1

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

VI. ADDITIONAL INFORMATIONA. FAILED COMPONENTS:

The failed solid state switch printed circuit boards were supplied by Electro-Mechanics, part number 33013-898 and 33013-899, assembly numbers 03021-287 and 03021-288.

B. PREVIOUS LERS ON SIMILAR EVENTS:

A similar LER event historical search was conducted with the following results: LER 88-008 (Safeguards Bus Undervoltage Relay Actuation Due to a Failed Solid State Switch Caused Automatic Start of "B" Emergency Diesel Generator) was a similar event. The root cause of LER 88-008 was determined to be a random failure of an electronic component and no corrective action was deemed necessary to prevent recurrence. LER 90-015 (Safeguards Bus Undervoltage Relay Actuation Due to a Failed Solid State Switch Causes an Automatic Start of the "A" Emergency Diesel Generator) was also a similar event. The root cause of LER 90-015 was determined to be a failure of an electronic component. Corrective action taken was to perform thermography on the failed solid state switch printed circuit board and then provide the results of this thermography to Electro-Mechanics, the system designer, for review. Based on the review of the thermography results by RG&E and Electro-Mechanics, modifications to the circuit design are being evaluated. Printed circuit card replacement intervals are also being evaluated.

The above corrective action led to the root cause determination and corrective action for LER 91-007.

C. SPECIAL COMMENTS:

None.

