

NRC FORM 366 (5-92)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95					
LICENSEE EVENT REPORT (LER)								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.		
(See reverse for required number of digits/characters for each block)										
FACILITY NAME (1) R.E. Ginna Nuclear Power Plant					DOCKET NUMBER (2) 05000244		PAGE (3) 1 OF 8			
TITLE (4) Loss of 34.5 KV Offsite Power Circuit 751, Due to Offsite Lightning Strike, Results in Automatic Start of "A" Emergency Diesel Generator										
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
06	30	95	95	--006--	00	07	31	95	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)		097								
			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)(vi)	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 John T. St. Martin - Technical Assistant								TELEPHONE NUMBER (Include Area Code) (716) 771-3641		
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
C	EA	CBL5	X000	N						
SUPPLEMENTAL REPORT EXPECTED (14)								EXPECTED SUBMISSION DATE (15)		
YES (If yes, complete EXPECTED SUBMISSION DATE).				<input checked="" type="checkbox"/> NO				MONTH	DAY	YEAR
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16) On June 30, 1995, at approximately 1528 EDST, with the reactor at approximately 97% steady state power, power from Circuit 751 (34.5 KV offsite power source) was lost, due to a lightning strike on an offsite utility pole for Circuit 751. This resulted in deenergization of 4160 Volt bus 12A and "A" train 480 Volt safeguards buses 14 and 18. The "A" Emergency Diesel Generator (D/G) automatically started and reenergized buses 14 and 18 as per design. There was no change in reactor power or turbine load. Immediate corrective action was to perform the appropriate actions of Abnormal Procedure AP-ELEC.1 (Loss of 12A And/Or 12B Busses) to stabilize the plant and to verify that the "A" Emergency D/G had started and reenergized buses 14 and 18. This event is NUREG-1022 Cause Code (C). Corrective action to prevent recurrence is outlined in Section V.B.										

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I. PRE-EVENT PLANT CONDITIONS

The plant was at approximately 97% steady state reactor power with no major operational activities in progress. A thunderstorm was in progress in the vicinity of the plant.

The offsite power configuration to the plant was in the normal "50% / 50%" offsite power lineup:

- o Circuit 751 (34.5 KV offsite power source) was supplying power to the "A" train 480 Volt safeguards buses 14 and 18 through 34.5 KV to 4160 Volt transformer 12A (12A transformer) to 4160 Volt bus 12A, and through the safeguards bus 4160 Volt to 480 Volt transformers.
- o Circuit 767 (34.5 KV offsite power source) was supplying power to the "B" train 480 Volt safeguards buses 16 and 17 through 34.5 KV to 4160 Volt transformer 12B (12B transformer) to 4160 Volt bus 12B, and through the safeguards bus 4160 Volt to 480 Volt transformers.

II. DESCRIPTION OF EVENT

A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- o June 30, 1995, 1528 EDST: Event date and time.
- o June 30, 1995, 1528 EDST: Discovery date and time.
- o June 30, 1995, 1528 EDST: Control Room operators verify the "A" Emergency Diesel Generator (D/G) operation and that safeguards buses 14 and 18 and Instrument Bus "B" are energized.
- o June 30, 1995, 1702 EDST: Safeguards buses 14 and 18 were transferred to Circuit 767 from the "A" Emergency D/G.
- o June 30, 1995, 1708 EDST: The "A" Emergency D/G was stopped and realigned for auto standby.
- o June 30, 1995, 1814 EDST: Circuit 751 declared operable.
- o July 2, 1995, 2343 EDST: Offsite power configuration was restored to the normal "50% / 50%" lineup.

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B. EVENT:

On June 30, 1995, at approximately 1528 EDST, with the reactor at approximately 97% steady state full power, the Control Room received numerous annunciator alarms, including Annunciator E-14 (LOSS B INSTR. BUS). The Control Room operators determined that Circuit 751 (34.5 KV offsite power source) was deenergized, and that "A" train 480 Volt safeguards buses 14 and 18 had lost their power supply from 4160 Volt bus 12A. The "A" Emergency D/G had automatically started and was tied to safeguards buses 14 and 18. Buses 14 and 18 had been momentarily deenergized and 120 Volt AC Instrument Bus "B" (powered from bus 14) had also been momentarily deenergized.

The Control Room operators verified that reactor coolant system temperature and pressure were stable, and that there was no change in reactor power or turbine load. They performed the appropriate actions of Abnormal Procedure AP-ELEC.1 (Loss of 12A And/Or 12B Busses) to stabilize the plant. They verified that the "A" Emergency D/G was operating properly and that safeguards buses 14 and 18 and Instrument Bus "B" were energized. The Control Room operators observed that Circuit 751 and bus 12A displayed zero (0) voltage. The loss of power from Circuit 751 resulted in undervoltage on safeguards buses 14 and 18, and the "A" Emergency D/G automatically started within ten (10) seconds as per design and reenergized these buses. When bus 14 was reenergized, Instrument Bus "B" was also automatically reenergized.

Energy Operations personnel were notified concerning the loss of Circuit 751. Personnel from the "Engineering, Operations, and Gas Services" department investigated field conditions and determined that a lightning strike caused the loss of power from Circuit 751, and determined the location of the lightning strike.

The Control Room operators referred to Equipment Restoration procedure ER-ELEC.1 (Restoration of Offsite Power) to restore offsite power to 4160 Volt bus 12A and 480 Volt safeguards buses 14 and 18. The Control Room operators closed 4160 Volt circuit breaker 52/12BY to energize bus 12A from Circuit 767, via the 12B transformer, at approximately 1557 EDST. At approximately 1702 EDST, safeguards buses 14 and 18 were transferred to Circuit 767 from the "A" Emergency D/G. (Circuit 767 had remained in operation, supplying "B" train 480 Volt safeguards buses 16 and 17 throughout the event.)

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At approximately 1708 EDST, June 30, 1995, the "A" Emergency D/G was stopped and realigned for auto standby. Circuit 751 was declared operable at approximately 1814 EDST, but was maintained as the plant's backup supply of offsite power rather than realigning the electrical system during continuing thunderstorm conditions.

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

None

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

The momentary loss of power to buses 14 and 18 (at 1528 EDST) caused the trip of the common sample pump for radioactive effluent monitoring of plant ventilation by channels R-10B (iodine), R-13 (particulate), and R-14 (noble gas). Channel R-14A remained operable, providing monitoring for iodine and noble gases, as required by Technical Specifications Table 3.5-5 Action 4. Channel R-14A also continuously collected samples for particulate monitoring, as required by Table 3.5-5 Action 5 and Table 4.12-2 Item E. The common sample pump was restarted at approximately 1544 EDST.

E. METHOD OF DISCOVERY:

This event was immediately apparent due to Main Control Board alarms and indications in the Control Room when power from Circuit 751 was lost. These included Main Control Board Annunciator E-14 (LOSS B INSTR. BUS) and the indicating lights for bus 14 and bus 18 supply breakers.

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F. OPERATOR ACTION:

Following the undervoltage condition on buses 14 and 18, the "A" Emergency D/G automatically started and reenergized these buses. The Control Room operators performed the appropriate actions to verify that the "A" Emergency D/G was operating properly, safeguards buses 14 and 18 were energized, and Instrument Bus "B" was energized.

When Instrument Bus "B" was reenergized, Rod Control generated an automatic signal to move control rods out. The Control Room operator noted this rod motion and transferred Rod Control to manual. When the automatic signal stabilized, rods were transferred back to automatic (at approximately 1535 EDST).

Letdown line flow and pressure were oscillating, and the demand signal for the letdown pressure control valve (PCV-135) was cycling in phase with these oscillations. PCV-135 was placed in manual to stabilize the letdown line parameters. Subsequently, PCV-135 was returned to automatic operation after letdown line parameters were stabilized.

The Shift Supervisor notified higher supervision of the loss of Circuit 751, and contacted Energy Operations personnel to determine the problem with Circuit 751.

The Control Room operators restored offsite power (from Circuit 767) to buses 14 and 18, stopped the "A" Emergency D/G, and realigned it for auto standby.

Subsequently, the Shift Supervisor notified the NRC at approximately 1754 EDST per 10 CFR 50.72 (b) (2) (ii).

G. SAFETY SYSTEM RESPONSES:

All safeguards equipment functioned properly. The "A" Emergency D/G automatically started due to the undervoltage condition on buses 14 and 18, displayed proper voltage and frequency, and reenergized safeguards buses 14 and 18 to supply emergency power.

Running containment recirculation fans on bus 14 tripped as designed, and were manually restarted as needed to restore normal cooling to the Containment. Running service water pumps on bus 18 tripped as designed, and the pump selected for autostart started when power was restored to bus 18.

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III. CAUSE OF EVENT

A. IMMEDIATE CAUSE:

The automatic actuation of the "A" Emergency D/G was due to undervoltage on safeguards buses 14 and 18.

B. INTERMEDIATE CAUSE:

The undervoltage on safeguards buses 14 and 18 was due to the loss of power from Circuit 751.

C. ROOT CAUSE:

The underlying cause of the loss of power from Circuit 751 was tripping of protective relays for Circuit 751 due to an electrical surge from a lightning strike on an offsite utility pole for Circuit 751.

This event is NUREG-1022 Cause Code (C), External Cause. This loss of power and subsequent start of an Emergency D/G does not meet the NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants", definition of a "Maintenance Preventable Functional Failure".

IV. ANALYSIS OF EVENT:

This event is reportable 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 a manual or automatic actuation of any engineered safety feature (ESF), including the reactor protection system (RPS)", in that the starting of the "A" Emergency D/G was an automatic actuation of an ESF system.

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

- All reactor control and protection systems performed as designed.
- The "A" Emergency D/G operated as designed by automatically starting and supplying emergency power to safeguards buses 14 and 18.
- Circuit 767 remained in operation supplying power to the "B" train safeguards buses; subsequently Circuit 767 was lined up to also supply power to the "A" train safeguards buses as permitted by plant technical specifications.
- Radiation monitor channels R-10B, R-13, and R-14 were temporarily lost. Their redundant monitor (R-14A) remained operable during this event, providing radioactive effluent monitoring for plant ventilation.

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:

- Offsite power was restored to safeguards buses 14 and 18 from Circuit 767, and the "A" Emergency D/G was stopped and realigned for auto standby.
- The common sample pump for R-10B, R-13 and R-14 was restarted.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

Options for offsite power configuration to the plant will be reevaluated, to optimize reliability during adverse weather conditions.

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VI. ADDITIONAL INFORMATION

A. FAILED COMPONENTS:

None

B. PREVIOUS LERs ON SIMILAR EVENTS:

A similar LER event historical search was conducted with the following results: LERs 91-002, 92-007, and 94-012 were similar events with similar root causes (start of an Emergency D/G due to loss of offsite power from external causes).

C. SPECIAL COMMENTS:

None