

CATEGORY 10

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9708270015 DOC. DATE: 97/08/19 NOTARIZED: NO DOCKET #
 FACIL: 50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
 AUTH. NAME AUTHOR AFFILIATION
 ST. MARTIN, J.T. Rochester Gas & Electric Corp.
 MECREDY, R.C. Rochester Gas & Electric Corp.
 RECIP. NAME RECIPIENT AFFILIATION

VISSING, G.

SUBJECT: LER 97-002-00: on 970720, 34.5 KV offsite power circuit 751 was lost. Caused by automatic actuation of "B" emergency DG due to undervoltage on safeguards buses 16 & 17. Offsite power restored to safeguards buses 16 & 17. W/970819 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTTR 1 ENCL 1 SIZE: 9
 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

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PROJECT DIRECTORATE
Nuclear Operations

August 19, 1997

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Guy S. Vissing
Project Directorate I-1
Washington, D.C. 20555

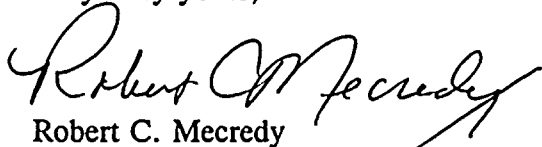
Subject: LER 97-002, Loss of 34.5 KV Offsite Power Circuit 751, Due to External Cause,
Results in Automatic Start of "B" Emergency Diesel Generator
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Vissing:

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)", the attached Licensee Event Report LER 97-002 is hereby submitted.

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

Very truly yours,


Robert C. Mecredy

xc: Mr. Guy S. Vissing (Mail Stop 14B2)
PWR Project Directorate I-1
Washington, D.C. 20555

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

Ginna Senior Resident Inspector

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PDR ADDCK 05000244
S PDR



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NRC FORM 366 (4-95)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT											
LICENSEE EVENT REPORT (LER) (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 External Cause, Results in Automatic Start of "B" 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						
07	20	97	97	-- 002	-- 00	08	19	97	FACILITY NAME	DOCKET NUMBER						
OPERATING MODE (9)		1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)													
POWER LEVEL (10)		100	20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)							
20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)		73.71		OTHER						
20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		50.73(a)(2)(iv)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A						
20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(vi)		50.73(a)(2)(vii)		50.73(a)(2)(viii)		50.73(a)(2)(ix)						
20.2203(a)(2)(iii)		50.36(c)(1)		50.36(c)(2)		50.73(a)(2)(x)		50.73(a)(2)(xi)		50.73(a)(2)(xii)						
20.2203(a)(2)(iv)		50.36(c)(3)		50.36(c)(4)		50.73(a)(2)(xiii)		50.73(a)(2)(xiv)		50.73(a)(2)(xv)						
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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		
C	EA	CBL5	X000	N	C	EA	CBL5	X000	N	C	EA	CBL5	X000	N		
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
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 July 20, 1997, at approximately 0043 EDST, the plant was in Mode 1 at approximately 100% steady state power. Power from Circuit 751 (34.5 KV offsite power source) was lost. This resulted in deenergization of 4160 Volt bus 12B and "B" train 480 Volt safeguards buses 16 and 17. The "B" Emergency Diesel Generator (D/G) automatically started and reenergized buses 16 and 17 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 Buses) to stabilize the plant and to verify that the "B" Emergency D/G had started and reenergized buses 16 and 17. The cause of the loss of power from Circuit 751 was determined to be a phase-to-phase fault caused by a raccoon. This fault caused the insulators on an offsite pole for Circuit 751 to fail. This event is NUREG-1022 Cause Code (C). Corrective action to prevent recurrence is outlined in Section V.B.																

LICENSEE EVENT REPORT (LER)
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		97	-- .002	-- 00	

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

I. PRE-EVENT PLANT CONDITIONS

On July 20, 1997, at approximately 0043 EDST, the plant was in Mode 1 at approximately 100% steady state reactor power. There were no significant activities in progress. The offsite power configuration to the plant was in the alternate "50% / 50%" offsite power lineup:

- Circuit 751 (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 12A (12A transformer), via circuit breaker 52/12AX, to 4160 Volt bus 12B, and through the safeguards bus 4160 Volt to 480 Volt transformers 16 and 17.
- Circuit 767 (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 12B (12B transformer), via circuit breaker 52/12BY, to 4160 Volt bus 12A, and through the safeguards bus 4160 Volt to 480 Volt transformers 14 and 18.

See the attached sketch of the offsite power distribution system.

II. DESCRIPTION OF EVENT

A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- July 20, 1997, 0043 EDST: Event date and time.
- July 20, 1997, 0043 EDST: Discovery date and time.
- July 20, 1997, 0044 EDST: Control Room operators verify the "B" Emergency Diesel Generator (D/G) operation and that safeguards buses 16 and 17 are energized.
- July 20, 1997, 0114 EDST: Safeguards buses 16 and 17 were transferred to Circuit 767 from the "B" Emergency D/G.
- July 20, 1997, 0124 EDST: The "B" Emergency D/G was stopped and realigned for auto standby.
- July 20, 1997, 1228 EDST: Circuit 751 was declared operable.
- July 20, 1997, 1232 EDST: Offsite power configuration was restored to the alternate "50% / 50%" lineup.

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B. EVENT:

On July 20, 1997, at approximately 0043 EDST, the plant was in Mode 1 at approximately 100% steady state full power. The Control Room operators received numerous Main Control Board annunciator alarms. Among these alarms were L-20 (12A XFMR OR 12A BUS TROUBLE), J-5 (#11 OR #12 TRANSFORMER OUT OF SYNCH), J-7 (480V MAIN OR TIE BREAKER TRIP), J-9 (SAFEGUARD BREAKER TRIP), and J-32 (EMERGENCY DIESEL GEN 1B PANEL). The Control Room operators determined that the following events had occurred:

- Circuit 751 (34.5 KV offsite power source) was deenergized
- "B" train 480 Volt safeguards buses 16 and 17 had lost their power supply from 4160 Volt bus 12B (buses 16 and 17 had been momentarily deenergized)
- The "B" Emergency D/G had automatically started and was tied to safeguards buses 16 and 17

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 Buses) to stabilize the plant. They verified that the "B" Emergency D/G was operating and that safeguards buses 16 and 17 were energized. The Control Room operators observed that Circuit 751 and bus 12B displayed zero (0) voltage. The loss of power from Circuit 751 resulted in undervoltage on safeguards buses 16 and 17, and the "B" Emergency D/G automatically started as per design and reenergized these buses.

Energy Operations personnel also identified the loss of power from Circuit 751, and promptly notified Ginna Control Room operators of the loss of power from Circuit 751.

The Control Room operators referred to Equipment Restoration procedure ER-ELEC.1 (Restoration of Offsite Power) to restore offsite power to 4160 Volt bus 12B and 480 Volt safeguards buses 16 and 17. The Control Room operators closed 4160 Volt circuit breaker 52/12BX to energize bus 12B from Circuit 767, via the 12B transformer, at approximately 0053 EDST. At approximately 0114 EDST, safeguards buses 16 and 17 were transferred to Circuit 767 from the "B" Emergency D/G. (Circuit 767 had remained in operation, supplying "A" train 480 Volt safeguards buses 14 and 18, throughout the event.)

At approximately 0124 EDST on July 20, the "B" Emergency D/G was stopped and realigned for auto standby.

Energy Operations subsequently contacted the Control Room operators and confirmed that the loss of power from Circuit 751 occurred when a raccoon climbed an offsite pole for Circuit 751 and caused a phase-to-phase fault. The fault caused insulators on the pole to fail. (The raccoon perished.)

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Circuit 751 was reenergized and declared operable at approximately 1228 EDST on July 20. Circuit 751 was lined up to supply plant loads, and the offsite power configuration was restored to the alternate "50% / 50%" offsite power lineup at approximately 1232 EDST.

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

None

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None

E. METHOD OF DISCOVERY:

This event was immediately apparent due to numerous Main Control Board alarms and other indications in the Control Room when power from Circuit 751 was lost.

F. OPERATOR ACTION:

Following the undervoltage condition on buses 16 and 17, the "B" Emergency D/G automatically started and reenergized these buses. The Control Room operators performed the appropriate actions to verify that the "B" Emergency D/G was operating and safeguards buses 16 and 17 were energized.

The Control Room operators manually restarted the "B" and "C" containment recirculation fans, which had tripped due to the loss of bus 16.

The momentary loss of power to buses 16 and 17 caused the trip of the common sample pump for monitoring of the containment (CNMT) atmosphere by channels R-10A (iodine), R-11 (particulate) and R-12 (noble gas). The Control Room operator manually restarted the common sample pump at approximately 0100 EDST.

The Control Room operators restored offsite power (from Circuit 767) to buses 16 and 17, stopped the "B" Emergency D/G, and realigned it for auto standby.

The Shift Supervisor notified higher supervision and the NRC Resident Inspector of the loss of offsite Circuit 751. Subsequently, the Shift Supervisor notified the NRC per 10 CFR 50.72 (b) (2) (ii), non-emergency four hour notification, at approximately 0317 EDST on July 20, 1997.

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G. SAFETY SYSTEM RESPONSES:

All safeguards equipment functioned properly. The "B" Emergency D/G automatically started due to the undervoltage condition on buses 16 and 17, displayed proper voltage and frequency, and reenergized safeguards buses 16 and 17 to supply emergency power.

Running containment recirculation fans on bus 16 tripped as designed and were manually restarted as needed to restore normal cooling to the Containment. Running service water pumps on bus 17 tripped as designed and the pump selected for autostart started when power was restored to bus 17.

III. CAUSE OF EVENT

A. IMMEDIATE CAUSE:

The automatic actuation of the "B" Emergency D/G was due to undervoltage on safeguards buses 16 and 17.

B. INTERMEDIATE CAUSE:

The undervoltage on safeguards buses 16 and 17 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 a phase-to-phase fault on Circuit 751. This fault occurred when a raccoon climbed an offsite pole for Circuit 751. The fault caused the insulators to fail. The insulator failure affected circuits at offsite Station 204 and tripped relays for Circuit 751, deenergizing 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 "B" 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:

There were no operational or safety consequences or implications attributed to the loss of Circuit 751 and start of the Emergency D/G because:

- All reactor control and protection systems performed as designed.
- The "B" Emergency D/G was available for operation and functioned as designed to reenergize "B" train safeguards buses 16 and 17.
- While in this condition, the plant electrical power systems (offsite power sources and the Emergency D/Gs) remained within the requirements of the Ginna Station Improved Technical Specifications (ITS) Limiting Condition for Operation (LCO) Required Action 3.8.1.A.
- Circuit 767 remained in operation supplying power to the "A" train safeguards buses; subsequently, Circuit 767 was lined up to supply power to the "B" train safeguards buses also.
- Radiation monitor channels R-10A, R-11, and R-12 were temporarily lost. The common sample pump was manually restarted within a few minutes. This response complied with the requirements of ITS LCO Required Action 3.3.5.B.1.

Based on the above, it can be concluded that the plant operated as designed, and 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 16 and 17 from Circuit 767, and the "B" Emergency D/G was stopped and realigned for auto standby.
- Circuit 751 was cleared for use by Energy Operations, protective relays for Circuit 751 (at Station 204) were reset by Energy Operations, and Circuit 751 was reenergized and restored to operable status.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

Since this was an isolated occurrence, no corrective action is planned.

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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, 94-012, 95-006, and 95-007 were similar events with similar root causes (start of an Emergency D/G due to loss of offsite power from external causes). However, none of the external causes for these LERs was due to an animal.

C. SPECIAL COMMENTS:

None

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