

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9104100183 DOC. DATE: 91/04/02 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. Baltimore Gas & Electric Co.  
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-002-00: on 910304, turbine runback occurred & "A" emergency diesel generator started & tied into safeguard buses. Caused by loss of power to safeguards buses & ice storm. Restored power to safeguards. W/910402 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 10  
 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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EXTERNAL:	EG&G BRYCE, J.H	3 3	L ST LOBBY WARD	1 1
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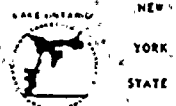




ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER N.Y. 14649-0001

ROBERT C. MECREDY  
Vice President  
Ginna Nuclear Production

TELEPHONE  
AREA CODE 716 546-2700



April 2, 1991

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

Subject: LER 91-002, Loss of Offsite Power Circuit 751, Due To  
Ice Storm, Causes Automatic Actuation of the ESF and  
RPS, (i.e. Emergency Diesel Generator Operation and  
Turbine Runback)  
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 Licensee Event Report LER  
91-002 is hereby submitted.

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

Very truly yours,

  
Robert C. Mecredy

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

Ginna USNRC Senior Resident Inspector

#P249075067

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## LICENSEE EVENT REPORT (LER)

APPROVED OMS NO. 3180-0104  
EXPIRES - 6/31/93

FACILITY NAME (1) R.E. Ginna Nuclear Power Plant										DOCKET NUMBER (2) 0 5 0 0 0 2 4 4										PAGE (3) 1 OF 0 9																												
TITLE (4) Loss of Offsite Power Circuit 751, Due To Ice Storm, Causes Automatic Actuation of the ESF and RPS, (i.e. Emergency Diesel Generator Operation and Turbine Runback)																																																
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 (2)									
0 3			0 4			9 1				9 1			0 0 2			0 0			0 4			0 2			9 1														0 5 0 0 0									

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																																																	
N		20.402(b)										20.408(a)										<input checked="" type="checkbox"/> 60.734(2)(iv)										73.71(a)																			
POWER LEVEL (10)		0 9 7										20.408(a)(1)(i)										60.734(a)(1)										60.734(2)(v)										73.71(a)									
		20.408(a)(1)(ii)										60.734(a)(2)										60.734(2)(vi)										OTHER (Specify in Abstract below and in Text, NRC Form 308A)																			
		20.408(a)(1)(iii)										60.734(a)(3)										60.734(2)(vii)(A)																													
		20.408(a)(1)(iv)										60.734(a)(4)										60.734(2)(viii)																													
		20.408(a)(1)(v)										60.734(a)(5)										60.734(2)(ix)																													

## LICENSEE CONTACT FOR THIS LER (12)

NAME Wesley H. Backus Technical Assistant to the Operations Manager										TELEPHONE NUMBER AREA CODE 3 1 5 5 2 4 - 4 4 4 6									
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## 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	

## SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO										EXPECTED SUBMISSION DATE (15)										MONTH										DAY										YEAR									
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ABSTRACT (Limit to 1600 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On March 4, 1991 at 0148 EST, with the reactor at approximately 97% full power and again on March 7, 1991 at 0248 EST, with the reactor at approximately 80% full power, a turbine runback occurred and the "A" Emergency Diesel Generator started and tied into safeguard buses 14 and 18.

The Control Room operators performed the appropriate actions of AP-TURB.2 (Automatic Turbine Runback) and verified that the "A" Emergency Diesel Generator was operating properly and that safeguards buses 14 and 18 were energized. The plant was subsequently stabilized at approximately 20% full power less than when the events started.

The cause of the events was the loss of power to safeguards buses 14 and 18 due to loss of offsite power 34.5 KV circuit 751. Circuit 751 was lost due to RG&E system disturbances caused by a major ice storm.

Corrective action was to restore normal power to safeguards buses 14 and 18 from offsite power and to stop the "A" Emergency Diesel Generator and realign it for auto standby.



## 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 9 1 -	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 366A'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. Both events resulted from a major ice storm, which began on the evening of March 3, 1991 and continued into the next morning. The effects of this ice storm continued to cause damage to parts of the Rochester Gas and Electric Corporation (RG&E) distribution system for several days.

Prior to the ice storm (and the first event) the reactor was at approximately 97% steady state full power with no major operational activities in progress. Prior to the second event the reactor was limited to approximately 80% full power because of loss of electrical demand.

The offsite power configuration to the plant for both events was as follows:

- o Offsite power 34.5 KV circuit 751 was feeding the "A" train safeguards buses 14 and 18 through 12A 34.5 KV/4160V transformer and through the safeguard buses 4160V/480V transformers.
- o Offsite power 34.5 KV circuit 767 was feeding the "B" train safeguards buses 16 and 17 through 12B 34.5 KV/4160V transformer and through the safeguard buses 4160V/480V transformers.

II. DESCRIPTION OF EVENTA. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- o March 4, 1991, 0148 EST: First event date and time.
- o March 4, 1991, 0148 EST: First event discovery date and time.





## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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EXPIRES 8/31/85

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

- o March 4, 1991, 0148 EST: Control Room operators perform the appropriate actions of abnormal procedure AP-TURB.2 (Automatic Turbine Runback) to stabilize the plant.
- o March 4, 1991, 0148 EST: Control Room operators verify the "A" Emergency Diesel Generator operation and safeguards buses 14 and 18 energized.
- o March 4, 1991, 0239 EST: Safeguard buses 14 and 18 resupplied from offsite power.
- o March 4, 1991, 0244 EST: The "A" Emergency Diesel Generator was stopped and realigned for auto standby.
- o March 4, 1991, 1405 EST: Normal offsite power from 34.5 KV circuit 751 restored to the plant.
- o March 7, 1991, 0248 EST: Second event date and time.
- o March 7, 1991, 0248 EST: Second event discovery date and time.
- o March 7, 1991, 0248 EST: Control Room operators perform the appropriate actions of AP-TURB.2 to stabilize the plant.
- o March 7, 1991, 0248 EST: Control Room operators verify the "A" Emergency Diesel Generator operation and safeguards buses 14 and 18 energized.
- o March 7, 1991, 0322 EST: Safeguard buses 14 and 18 resupplied from offsite power.
- o March 7, 1991, 0323 EST: The "A" Emergency Diesel Generator was stopped and realigned for auto standby.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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

## B. EVENT:

On March 4, 1991, at 0148 EST, with the reactor at approximately 97% steady state full power, the Control Room received numerous annunciator alarms. The Control Room operators determined that the following events had occurred:

- o Safeguards buses 14 and 18 had lost their normal power supply.
- o A turbine runback of approximately 20% full power had occurred.
- o The "A" Emergency Diesel Generator had started and closed on to safeguards buses 14 and 18.

The Control Room operators performed the appropriate actions of AP-TURB.2 (Automatic Turbine Runback) and verified that the "A" Emergency Diesel Generator was operating properly and that safeguards buses 14 and 18 were energized. The plant was subsequently stabilized at approximately 78% full power. After the plant was stabilized, the Control Room operators observed that 4160V bus 12A and offsite power 34.5 KV circuit 751 displayed zero (0) voltage. The Control Room operators performed the appropriate actions of AP-ELEC.1 (Loss of #12A or 12B Transformer) and contacted Power Control. Power Control informed the Control Room operators that offsite power 34.5 KV circuit 751 had been lost at substation 204.

Subsequently at 0212 EST, the Control Room operators, using operating procedure O-6.9.2 (Establishing And/Or Transferring Offsite Power to Bus 12A/Bus 12B), energized 4160V Bus 12A from offsite power 34.5 KV circuit 767. At 0239 EST safeguard buses 14 and 18 were resupplied by offsite power.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

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

At 0244 EST, March 4, 1991, the "A" Emergency Diesel Generator was stopped and realigned for AUTO standby.

At 1405 EST, March 4, 1991, after offsite power 34.5 KV circuit 751 had been cleared for use, normal offsite power from circuit 751 was restored to the plant.

Again on March 7, 1991 at 0248 EST, with the reactor at approximately 80% full power, the Control Room received numerous alarms. The Control Room operators determined that the following events had occurred:

- o Safeguards Buses 14 and 18 had lost their normal power supply.
- o A turbine runback of approximately 20% full power had occurred.
- o The "A" Emergency Diesel Generator had started and closed on to safeguards buses 14 and 18.

The Control Room operators performed the appropriate actions of AP-TURB.2 (Automatic Turbine Runback) and verified that the "A" Emergency Diesel Generator was operating properly and that safeguards buses 14 and 18 were energized. The plant was subsequently stabilized at approximately 60% full power. After the plant was stabilized, the Control Room operators observed that 4160V Bus 12A and offsite power 34.5 KV circuit 751 displayed zero (0) voltage. The Control Room operators performed the appropriate actions of AP-ELEC.1 (Loss of #12A or 12B Transformer) and contacted Power Control. Power Control informed the Control Room operators that offsite power 34.5 KV circuit 751 had been lost at substation 204.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED ONS 40 3150-0104  
EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Subsequently at 0302 EST, the Control Room operators, using Operating Procedure O-6.9.2 (Establishing And/Or Transferring Offsite Power to Bus 12A/Bus 12B), energized 4160V bus 12A from offsite power 34.5 KV circuit 767. At 0322 EST safeguard buses 14 and 18 were resupplied from offsite power.

At 0323 EST, March 7, 1991, the "A" Emergency Diesel Generator was stopped and realigned for AUTO standby.

AT 1100 EST, March 7, 1991, after offsite power 34.5 KV circuit 751 had been cleared for use, normal offsite power from circuit 751 was made available to the plant. Plant management, however, decided to maintain both safeguards trains of power on offsite power 34.5 KV circuit 767. Offsite power 34.5 KV circuit 751 was maintained as the plant's backup supply of offsite power.

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

None.

**D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:**

None.

**E. METHOD OF DISCOVERY:**

The events were immediately apparent due to alarm and indication in the Control Room.

**F. OPERATOR ACTION:**

Following the turbine runbacks, buses 14 and 18 undervoltages, and the "A" Emergency Diesel Generator automatic starts, the Control Room operators immediately performed the appropriate actions of AP-TURB.2 (Automatic Turbine Runback) and verified that the "A" Emergency Diesel Generator was operating properly and that safeguards buses 14 and 18 were energized.





## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 308A's) (17)

Subsequently, the Control Room operators restored normal power to bus 14 and 18 and stopped and realigned the "A" Emergency Diesel Generator for AUTO standby.

**G. SAFETY SYSTEM RESPONSES:**

The "A" Emergency Diesel Generator automatically started, displayed proper voltage and frequency and closed into safeguards buses 14 and 18 to supply emergency power.

**III. CAUSE OF EVENT**

**A. IMMEDIATE CAUSE:**

The Automatic Turbine Runbacks were caused by a dropped rod signal from Nuclear Instrument System (NIS) power range N-42.

The Automatic actuations of the "A" Emergency Diesel Generator was due to undervoltage on safeguards buses 14 and 18.

**B. INTERMEDIATE CAUSE:**

The dropped Rod signal from NIS power range N-42 was due to the momentary loss of the "B" instrument bus which supplied power to N-42. The loss of the "B" instrument bus was due to the momentary loss of MCC-1C which supplied power to the constant voltage transformer for the "B" instrument bus.

The loss of MCC-1C was due to the momentary loss of power to safeguards bus 14.

The loss of power to safeguards bus 14 was due to the loss of offsite power 34.5 KV circuit 751.

The undervoltage on safeguards buses 14 and 18 was due to the loss of offsite power 34.5 KV circuit 751.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

## C. ROOT CAUSE:

The underlying cause of the loss of offsite power 34.5 KV circuit 751 was RG&E system disturbance due to the effects of a major ice storm.

## 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)", in that the automatic turbine runback was an automatic actuation of the RPS and the starting of the "A" Emergency Diesel Generator was an automatic actuation of an ESF system.

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

- o All reactor control and protection systems performed as designed thus limiting the overall effects of the turbine runback transient.
- o The "A" Emergency Diesel Generator operated as designed by starting and supplying emergency power to safeguards buses 14 and 18.
- o Offsite power 34.5 KV circuit 767 was still in operation supplying power to the "B" train safeguards buses and subsequently was lined up to supply power to the "A" train safeguards buses.

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



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/85

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

V. CORRECTIVE ACTION

## A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:

After the plant had been stabilized, safeguards buses 14 and 18 normal power supplies were restored and the "A" Emergency Diesel Generator was stopped and aligned for AUTO standby.

Subsequently, in the first event, after offsite power 34.5 KV circuit 751 had been cleared for use, normal offsite power from circuit 751 was restored to the plant.

Subsequently, in the second event, after offsite power 34.5 KV circuit 751 had been cleared for use, Plant Management decided to maintain both safeguards trains of power on offsite power 34.5 KV circuit 767.

## B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

Since the ice storm was a natural phenomenon no corrective actions to prevent recurrence are warranted.

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. No documentation of similar LER events with the same root cause at Ginna Station could be identified.

## C. SPECIAL COMMENTS:

None.

