

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9004270283 DOC.DATE: 90/04/19 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 90-003-00:on 900323,higher than normal count rate on  
 source range NIS.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 7  
 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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AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
DEDRO	1 1	NRR/DET/ECMB 9H	1 1
NRR/DET/EMEB9H3	1 1	NRR/DET/ESGB 8D	1 1
NRR/DLPQ/LHFB11	1 1	NRR/DLPQ/LPEB10	1 1
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NRR/DST/SELB 8D	1 1	NRR/DST/SICB 7E	1 1
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REG FILE 02	1 1	RES/DSIR/EIB	1 1
RGN1 FILE 01	1 1		
EXTERNAL: EG&G STUART,V.A	4 4	L ST LOBBY WARD	1 1
LPDR	1 1	NRC PDR	1 1
NSIC MAYS,G	1 1	NSIC MURPHY,G.A	1 1
NUDOCS FULL TXT	1 1		

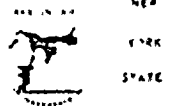
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TELEPHONE  
AREA CODE 716 546-2700

April 19, 1990

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

Subject: LER 90-003, Higher Than Normal Count Rate On Source  
Range NIS, Due To A Faulty Detector, Causes A Reactor  
Trip During Source Range Re-energization  
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  
90-003 is hereby submitted.

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

Very truly yours,

*Robert C. Meckredy*  
Robert C. Meckredy  
Division Manager  
Nuclear Production

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

Ginna USNRC Senior Resident Inspector

9004270283 900419  
PDR ADDCK 05000244  
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PB40 957217  
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## LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3160-0104  
EXPIRES - 9/31/93

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 6

TITLE (4)

Higher Than Normal Count Rate On Source Range NIS, Due To A Faulty Detector,  
Causes A Reactor Trip During Source Range Re-energization

EVENT DATE (5)

LER NUMBER (6)

REPORT DATE (7)

OTHER FACILITIES INVOLVED (8)

MONTH

DAY

YEAR

YEAR

SEQUENTIAL  
NUMBERREVISION  
NUMBER

MONTH

DAY

YEAR

FACILITY NAMES

DOCKET NUMBER (2)

0 3

2 3

9 0

9 0

-

0 0 3

-

0 0

0 4

1 9

9 0

0 5 0 0 0

0 0 0

OPERATING  
MODE (9)

N

20.402(b)

20.406(a)

X

60.73(a)(2)(iv)

73.71(b)

POWER  
LEVEL  
(10)

0 0 0

20.406(a)(1)(i)

60.36(a)(1)

60.73(a)(2)(v)

73.71(a)

20.406(a)(1)(ii)

60.36(a)(2)

60.73(a)(2)(vi)

OTHER (Specify in Abstract  
below and in Test, NRC Form  
366A)

20.406(a)(1)(iii)

60.73(a)(2)(i)

60.73(a)(2)(vii)(A)

20.406(a)(1)(iv)

60.73(a)(2)(ii)

60.73(a)(2)(viii)

20.406(a)(1)(v)

60.73(a)(2)(iii)

60.73(a)(2)(ix)

60.73(a)(2)(x)

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 1 - 4 4 4 1 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	
B	I	G D I E T	W 1 1 2 1 0	Y							

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED  
SUBMISSION  
DATE (15)

MONTH

DAY

YEAR

YES (If yes, complete EXPECTED SUBMISSION DATE)

X

NO

ABSTRACT (Limit to 1600 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On March 23, 1990 at 1804 EST with the reactor subcritical during a planned shutdown for the Annual Refueling and Maintenance Outage, a reactor trip occurred from Source Range (SR) Hi Flux.

The two reactor trip breakers opened as required and all shutdown and control rods that were withdrawn inserted as designed.

The reactor trip was due to SR channel N-31 indicating higher than normal count rate when it re-energized during the controlled shutdown.

The underlying cause of the higher than normal count rate was a low internal resistance on the source range detector.

Immediate corrective action was to stabilize the plant in hot shutdown.

Subsequent action was to change out the faulty source range detector.

## 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	05000244	90	003	00	0	2 OF 06	

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

I. PRE-EVENT PLANT CONDITIONS

Unit shutdown was in progress per Operating Procedure O-2.1 (Normal Shutdown to Hot Shutdown) for the Annual Refueling and Maintenance Outage.

II. DESCRIPTION OF EVENT

## A. DATES AND APPROXIMATE TIMES FOR MAJOR OCCURRENCES:

- o March 23, 1990, 1804 EST: Event date and time.
- o March 23, 1990, 1804 EST: Event discovery date and time.
- o March 23, 1990, 1804 EST: Control Room operators verify both reactor trip breakers open and all control and shutdown rods inserted.
- o March 23, 1990, 1807 EST: Plant stabilized at hot shutdown.
- o March 23, 1990, 1854 EST: Source Range NIS N-31 declared inoperable.
- o March 29, 1990, 1159 EST: Source Range NIS N-31 declared operable.

## B. EVENT:

On March 23, 1990 at 1804 EST with the reactor subcritical during a planned shutdown, a reactor trip occurred from Source Range (SR) Hi Flux when the SR Nuclear Instrumentation System (NIS) Channel N-31, upon automatically re-energizing at the normal setpoint of  $5 \times 10^{-11}$  amps on the Intermediate Range (IR) NIS, indicated higher than normal count rate. (i.e. SR count rate greater than or equal to  $1 \times 10^5$  Counts Per Second (CPS)).

## 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   0	—   0   0   3	—   0   0	0   3	OF	0   6

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

The Control Room operators performed the applicable actions of Emergency Operating Procedures, E-0 (Reactor Trip or Safety Injection) and ES-0.1 (Reactor Trip Response) and stabilized the plant. Both reactor trip breakers opened as required and all control and shutdown rods were verified inserted.

The Control Room operators notified Higher Supervision, the Instrument and Control (I&C) Department and the Nuclear Regulatory Commission (NRC) of the reactor protection system activation from NIS faulty source range channel N-31.

Subsequently the Control Room operators declared source range channel N-31 inoperable.

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 event was immediately apparent due to alarms and indications in the Control Room.

F. OPERATOR ACTION:

After the reactor trip the Control Room operators performed the actions of Emergency Operating Procedures, E-0 (Reactor Trip or Safety Injection) and ES-0.1 (Reactor Trip Response) and stabilized the plant.

Subsequently the Control Room operators notified Higher Supervision, the I&C Department and the NRC of the event and declared source range channel N-31 inoperable.

## 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 (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	- 0 0 3	- 0 0	0	4	OF 0 6

TEXT (If more space is required, use additional NRC Form 364A's) (17)

III. CAUSE OF EVENT

## A. IMMEDIATE CAUSE:

The reactor trip occurred due to SR NIS channel N-31 Hi Flux setpoint being exceeded (i.e. SR count rate greater than or equal to  $1 \times 10^5$  Counts Per Second (CPS)).

## B. INTERMEDIATE CAUSE:

The SR NIS, N-31 Hi Flux reactor trip was received because SR NIS, N-31 was indicating higher than normal count rate when re-energizing automatically as the IR NIS decreased below  $5 \times 10^{-11}$  amps.

## C. ROOT CAUSE:

The underlying cause of the higher than normal count rate on SR NIS channel, N-31 was a low internal resistance of the source range detector. Approximately 60 ohms was measured between the center conductor and inner shield. The internal resistance should be a minimum of  $10^8$  ohms. The manufacturer of the detector, Westinghouse Tube Division, believes the detector's internal tungsten wire broke and shorted to the detector casing.

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 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 Source Range Hi Flux reactor trip was an automatic actuation of the RPS.

## 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 (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	0 0 3	0 0	0 5	OF	0 6

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

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 attributed to the SR Hi Flux reactor trip because:

- o The two reactor trip breakers opened as required.
- o All withdrawn control and shutdown rods inserted as designed.
- o The unit was already shutdown with the reactor subcritical so there were no power, temperature, or pressure transients related to the reactor trip.
- o The other source range instrument N-32 was operating.

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:

The detector installed in source range channel N-31 was replaced with a new detector. N-31 was then calibrated and tested satisfactorily and restored to service.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

Ginna Maintenance has submitted a Technical Staff Request (TSR) for the evaluation of the new Westinghouse low voltage source range detectors which utilizes a different center conductor material.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMS 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 0	0 0 3	0 0	0 6	OF	0 6

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

VI. ADDITIONAL INFORMATION

## A. FAILED COMPONENTS:

The faulty detector was a type BF3 SR Detector, Part No. WL-24182 manufactured by Westinghouse Electric Corporation.

## 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. However, LERs 85-010 and 88-001 were similar events with a different root cause.

## C. SPECIAL COMMENTS:

None.