

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8803140134 DOC. DATE: 88/03/07 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.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-001-00: on 880205, higher than normal count rate on source range NIS due to faulty connectors.

W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 8
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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

	RECIPIENT ID CODE/NAME	COPIES LTR	ENCL	RECIPIENT ID CODE/NAME	COPIES LTR	ENCL
	PD1-3 LA	1	1	PD1-3 PD	1	1
	STAHL, C	1	1			
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	AEOD/DOA	1	1	AEOD/DSP/NAS	1	1
	AEOD/DSP/ROAB	2	2	AEOD/DSP/TPAB	1	1
	ARM/DCTS/DAB	1	1	DEDRO	1	1
	NRR/DEST/ADS7E4	1	0	NRR/DEST/CEB8H7	1	1
	NRR/DEST/ESB 8D	1	1	NRR/DEST/ICSB7A	1	1
	NRR/DEST/MEB9H3	1	1	NRR/DEST/MTB 9H	1	1
	NRR/DEST/PSB8D1	1	1	NRR/DEST/RSB 8E	1	1
	NRR/DEST/SGB 8D	1	1	NRR/DLPQ/HFB10D	1	1
	NRR/DLPQ/QAB10A	1	1	NRR/DOEA/EAB11E	1	1
	NRR/DREP/RAB10A	1	1	NRR/DREP/RPB10A	2	2
	NRR/DRIS/SIB9A1	1	1	NRR/PMAS/ILRB12	1	1
	REG FILE 02	1	1	RES TELFORD, J	1	1
	RES/DE/EIB	1	1	RES/DRPS DIR	1	1
	RGN1 FILE 01	1	1			
EXTERNAL:	EG&G GROH, M	5	5	FORD BLDG HOY, A	1	1
	H ST LOBBY WARD	1	1	LPDR	1	1
	NRC PDR	1	1	NSIC HARRIS, J	1	1
	NSIC MAYS, G	1	1			

TOTAL NUMBER OF COPIES REQUIRED: LTR 46 ENCL 45

R
I
D
S
/
A
D
S
/
A
D
S

LICENSEE EVENT REPORT (LER)

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 7**

TITLE (4) **Higher Than Normal Count Rate on Source Range NIS Due to Faulty Connectors, Causes 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 NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
0 2	0 5	8 8	8 8	0 0 1	0 0	0 3	0 7	8 8	0 5 0 0 0		

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

OPERATING MODE (9) N	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input checked="" type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
POWER LEVEL (10) 0 1 0 1 0	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 80.34(e)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 80.34(e)(2)	<input type="checkbox"/> 80.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(viii)(A)	
	<input type="checkbox"/> 20.406(a)(1)(vi)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(ix)(B)	
	<input type="checkbox"/> 20.406(a)(1)(vii)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(ix)(a)	

LICENSEE CONTACT FOR THIS LER (12)

NAME **Wesley H. Backus** TELEPHONE NUMBER **3 1 1 5 5 1 2 1 4 1 4 1 4 6**

Technical Assistant to the Operation

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
B	I	G	C	10	N	A	13	8	10

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On February 5, 1988 at 1857 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 inserted as designed.

The reactor trip was due to the SR instruments indicating higher than normal count rate when re-energized during the controlled shutdown. The root cause of the higher than normal count rate was circuit noise caused by faulty connectors at the detectors, possibly damaged by personnel or objects entering the instrument ports.

Immediate corrective action was to stabilize the plant, rack out and hold the reactor trip breakers, and borate the Reactor Coolant System to refueling shutdown concentration. Subsequent action was to changeout the two source range detectors.

Action planned to prevent recurrence is to install protective gratings over the instrument ports during outages.

8803140134 880307
PDR ADOCK 05000244
S DCD

5E22 1/1
8605773692

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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			
		8 8	- 0 0 1	- 0 0	0 2	OF	0 7

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. EVENT:

On February 5, 1988 at 1857 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), upon re-energizing at the normal setpoint of 5×10^{-11} amps on the Intermediate Ranges (IR) NIS, indicated higher than normal count rate.

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.

The Control Room operators, per procedure ER-NIS.1 (SR Malfunction), held open the reactor trip breakers, continued boration to refueling shutdown and notified the Instrument and Control Department to investigate.

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

None

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) R. E. Ginna Nuclear Power Plant	DOCKET NUMBER (2) 0 5 0 0 0 2 4 4 8 8	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8	0 0 1	0	0 0 0 3	OF	0 7

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

C. DATES AND APPROXIMATE TIMES FOR MAJOR OCCURRENCES:

- o February 5, 1988, 1857 EST: Event date and time
- o February 5, 1988, 1857 EST: Discovery date and time
- o February 5, 1988, 1914 EST: Reactor trip breakers racked out and held
- o February 6, 1988, 0120 EST: Source Range NIS N-31 and N-32 declared inoperable
- o February 6, 1988, 0221 EST: Reactor Coolant System Boron Concentration at refueling shutdown concentration (2004 ppm)
- o February 7, 1988, 1147 EST: Source Range NIS N-32 declared operable
- o February 8, 1988, 1118 EST: Source Range NIS N-31 declared operable

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.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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			
		8 8	- 0 0 1	- 0 0	0 4	OF	0 7

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

F. OPERATOR ACTION:

- o 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.
- o Subsequently the Control Room operators performed the actions of equipment restoration procedure ER-NIS.1 (SR Malfunction) and held the reactor trip breakers racked out, continued RCS boration to refueling shutdown concentration and notified the Instrument and Control (I&C) Department of the SR malfunction.

III. CAUSE OF EVENT

A. IMMEDIATE CAUSE:

The reactor trip occurred due to SR NIS Hi Flux (i.e. SR count rate greater than or equal to 10^5 counts per second (cps)).

B. INTERMEDIATE CAUSE:

The SR Hi Flux reactor trip was received because the SR NIS was indicating higher than normal count rate when they re-energized automatically as the IR NIS decreased below 5×10^{-11} amps.

C. ROOT CAUSE:

The root cause of the higher than normal count rate on the SR NIS was due to noise caused by faulty connectors at the detectors. It is believed that these connectors could have been damaged by persons or objects entering the instrument port holes during work in the reactor cavity.

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	8 8	- 0 0 1	- 0 0	0 5	OF 0 7

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

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.

The Source Range instrumentation system also had a Technical Specification (TS) operability action statement associated with it. This action statement from TS table 3.5.1, action statement 4 states, "with the number of operable channels one less than the minimum operable channel requirement (i.e. 2 source range instruments), suspend all operations involving positive reactivity changes. If the channel is not restored to operable status within 48 hours, open the reactor trip breakers within the next hour."

The plant operators racked out and held the reactor trip breakers soon after the reactor trip and only negative reactivity changes were made thereafter.

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 sub-critical so there were no power, temperature, or pressure transients related to the reactor trip.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		
		8 8	- 0 0 1	- 0 0	0 6	OF 0 7

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

Implications of the event were the loss of accurate core neutron flux monitoring for shutdown considerations. A review of these implications was made with the following results:

- o Nuclear data accumulated following the controlled shutdown indicates that the actual neutron fluence at the SR detector locations was well below the trip setpoint of 10^5 cps.
- o The failure of the SR NIS's was in the conservative direction (i.e. the indicated count rate was higher than the actual count rate).
- o With the controlled shutdown negative reactivity was added continuously using Boric Acid addition as reactor power was decreased. This Boric Acid addition was continued after the reactor was subcritical thus assuring more than adequate core shutdown margin at all times.
- o After the reactor trip the reactor trip breakers were racked out and held, assuring no inadvertent positive reactivity insertion due to control rods.

Based on the above it can be concluded that core shutdown margin was more than adequate at all times during the SR NIS malfunction assuring the public's health and safety.

V. CORRECTIVE ACTION

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

- o Source Range detectors for N-31 and N-32 SR channels were replaced with new detectors. With these new detectors the SR channels were calibrated and tested satisfactorily.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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 8 8	SEQUENTIAL NUMBER - 0 0 1	REVISION NUMBER - 0 0	Q 7	OF	0 7

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

- o Subsequent investigation revealed that the N-31 SR detector connector was broken at the detector. This connector was replaced and tested satisfactorily.
- o Subsequent investigation revealed that the N-32 SR detector connector was dirty. This connector was cleaned and tested satisfactorily.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

- o Ginna Station Work Request Trouble Report No. 88-1331 was initiated to design, manufacture and install heavy gauge tubing or armored grating over the NIS instrument ports to protect against people and tools from falling into the instrument ports during outages.

VI. ADDITIONAL INFORMATION

A. FAILED COMPONENTS:

- o The faulty components were: Amphenol Connectors, part number 52975-1051.

B. PREVIOUS LERs ON SIMILAR EVENTS:

A similar LER event historical search was conducted with the following results: No documentation of similar LER events at Ginna Station could be identified.

C. SPECIAL COMMENTS:

The industry was notified of this event through Nuclear Network on February 24, 1988.

R

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

TELEPHONE
AREA CODE 716 546 2700

March 7, 1988

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

Subject: LER 88-001, Higher Than Normal Count Rate On Source
Range NIS Due To Faulty Connectors, Causes 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 88-001 is hereby submitted.

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

Very truly yours,



Bruce A. Snow
Superintendent of
Nuclear Production

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

Ginna USNRC Resident Inspector

IE22
1/1

P605773692