

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9609130028 DOC.DATE: 96/09/05 NOTARIZED: NO DOCKET #
 FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
 AUTH.NAME AUTHOR AFFILIATION
 MARTIN,J.T. Rochester Gas & Electric Corp.
 MERCREDY,R.C. Rochester Gas & Electric Corp.
 RECIP.NAME RECIPIENT AFFILIATION

VISSING,G.S.

SUBJECT: LER 96-011-00:on 960807,improper configuration of circuit
 breaker occurred.Due to undetected internal interference,
 resulting in automatic start of both auxiliary feedwater
 pumps.Running AFW pumps were secured.W/960905 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
 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

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD1-1 PD	1 1	VISSING,G.	1 1
INTERNAL: AEOD/SPD/RAB	2 2	AEOD/SPD/RRAB	1 1
<u>FILE CENTER</u>	1 1	NRR/DE/ECGB	1 1
NRR/DE/EELB	1 1	NRR/DE/EMEB	1 1
NRR/DRCH/HHFB	1 1	NRR/DRCH/HICB	1 1
NRR/DRCH/HOLB	1 1	NRR/DRCH/HQMB	1 1
NRR/DRPM/PECB	1 1	NRR/DSSA/SPLB	1 1
NRR/DSSA/SRXB	1 1	RES/DSIR/EIB	1 1
RGN1 FILE 01	1 1		
EXTERNAL: L ST LOBBY WARD	1 1	LITCO BRYCE,J H	2 2
NOAC MURPHY,G.A	1 1	NOAC POORE,W.	1 1
NRC PDR	1 1	NUDOCS FULL TXT	1 1

NOTE TO ALL "RIDS" RECIPIENTS:
 PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM OWFN 5D-5(EXT. 415-2083) TO ELIMINATE YOUR NAME FROM
 DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
 TOTAL NUMBER OF COPIES REQUIRED: LTTR 25 ENCL 25



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



AREA CODE 716 546-2700

ROBERT C. MECREDY
Vice President
Nuclear Operations

September 5, 1996

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

Subject: LER 96-011, Improper Configuration of Circuit Breaker, Due to Undetected Internal Interference, Results in Automatic Start of Both Auxiliary Feedwater Pumps
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 96-011 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 14C7)
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

IER221/

9609130028 960905
PDR ADDCK 05000244
S PDR

NRC FORM 366 (4-95)			U.S. NUCLEAR REGULATORY COMMISSION <div style="text-align: right;"> APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 </div>																																										
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)			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																																										
FACILITY NAME (1) R.E. Ginna Nuclear Power Plant			DOCKET NUMBER (2) 05000244		PAGE (3) 1 OF 5																																								
TITLE (4) Improper Configuration of Circuit Breaker, Due to Undetected Internal Interference, Results in Automatic Start of Both Auxiliary Feedwater Pumps																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">EVENT DATE (5)</th> </tr> <tr> <th>MONTH</th> <th>DAY</th> <th>YEAR</th> </tr> <tr> <td>08</td> <td>07</td> <td>96</td> </tr> </table>			EVENT DATE (5)			MONTH	DAY	YEAR	08	07	96	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">LER NUMBER (6)</th> </tr> <tr> <th>YEAR</th> <th>SEQUENTIAL NUMBER</th> <th>REVISION NUMBER</th> </tr> <tr> <td>96</td> <td>-- 011</td> <td>-- 00</td> </tr> </table>		LER NUMBER (6)			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	96	-- 011	-- 00	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">REPORT DATE (7)</th> </tr> <tr> <th>MONTH</th> <th>DAY</th> <th>YEAR</th> </tr> <tr> <td>09</td> <td>05</td> <td>96</td> </tr> </table>		REPORT DATE (7)			MONTH	DAY	YEAR	09	05	96	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">OTHER FACILITIES INVOLVED (8)</th> </tr> <tr> <th>FACILITY NAME</th> <th>DOCKET NUMBER</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td>FACILITY NAME</td> <td>DOCKET NUMBER</td> </tr> <tr> <td> </td> <td> </td> </tr> </table>		OTHER FACILITIES INVOLVED (8)		FACILITY NAME	DOCKET NUMBER			FACILITY NAME	DOCKET NUMBER		
EVENT DATE (5)																																													
MONTH	DAY	YEAR																																											
08	07	96																																											
LER NUMBER (6)																																													
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER																																											
96	-- 011	-- 00																																											
REPORT DATE (7)																																													
MONTH	DAY	YEAR																																											
09	05	96																																											
OTHER FACILITIES INVOLVED (8)																																													
FACILITY NAME	DOCKET NUMBER																																												
FACILITY NAME	DOCKET NUMBER																																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">OPERATING MODE (9)</td> <td style="width: 15%; text-align: center;">3</td> </tr> <tr> <td>POWER LEVEL (10)</td> <td style="text-align: center;">000</td> </tr> </table>			OPERATING MODE (9)	3	POWER LEVEL (10)	000	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="4">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)</th> </tr> <tr> <td style="width: 25%;">20.2201(b)</td> <td style="width: 25%;">20.2203(a)(2)(v)</td> <td style="width: 25%;">50.73(a)(2)(i)</td> <td style="width: 25%;">50.73(a)(2)(viii)</td> </tr> <tr> <td>20.2203(a)(1)</td> <td>20.2203(a)(3)(i)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(x)</td> </tr> <tr> <td>20.2203(a)(2)(i)</td> <td>20.2203(a)(3)(ii)</td> <td>50.73(a)(2)(iii)</td> <td>73.71</td> </tr> <tr> <td>20.2203(a)(2)(ii)</td> <td>20.2203(a)(4)</td> <td><input checked="" type="checkbox"/> 50.73(a)(2)(iv)</td> <td>OTHER</td> </tr> <tr> <td>20.2203(a)(2)(iii)</td> <td>50.36(c)(1)</td> <td>50.73(a)(2)(v)</td> <td rowspan="2" style="font-size: x-small;">Specify in Abstract below or in NRC Form 366A</td> </tr> <tr> <td>20.2203(a)(2)(iv)</td> <td>50.36(c)(2)</td> <td>50.73(a)(2)(vii)</td> </tr> </table>			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)				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)	20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71	20.2203(a)(2)(ii)	20.2203(a)(4)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	OTHER	20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A	20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)									
OPERATING MODE (9)	3																																												
POWER LEVEL (10)	000																																												
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)																																													
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)																																										
20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71																																										
20.2203(a)(2)(ii)	20.2203(a)(4)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	OTHER																																										
20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A																																										
20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)																																											
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																																			
SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED SUBMISSION DATE (15)		MONTH 	DAY 	YEAR 																																			
YES (If yes, complete EXPECTED SUBMISSION DATE).				<input checked="" type="checkbox"/> NO	X																																								
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16) <p>On August 7, 1996, at approximately 2009 EDST, the plant was in Mode 3 with the reactor coolant system being maintained at a temperature of 545 degrees F and a pressurizer pressure of 2235 PSIG. With no auxiliary feedwater pumps running and one main feedwater pump circuit breaker racked out in the "test" position, an "AFW Bypass Switch" was moved from "Defeat" to "Normal". An undetected improper configuration of the circuit breaker created the logic that both main feedwater pump breakers were already open. This created the logic for autostart of both the "A" and "B" motor-driven auxiliary feedwater pumps.</p> <p>Immediate action was to stabilize auxiliary feedwater flow to both steam generators.</p> <p>The underlying cause of the autostart was that the logic for autostart was present due to an undetected internal interference within the circuit breaker between the racking arm and the actuating rod for the 52S auxiliary switch, which prevented this switch from opening to provide the circuit logic that the breaker was in the closed position.</p> <p>This event is NUREG-1022 Cause Code (A).</p> <p>Corrective action to prevent recurrence is outlined in Section V.B.</p>																																													

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	96	-- 011	-- 00	2 OF 5

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

I. PRE-EVENT PLANT CONDITIONS:

On August 7, 1996, at approximately 2009 EDST, the plant was in Mode 3 as a result of a voluntary plant shutdown to upgrade motor-operated valves in the residual heat removal (RHR) system. Valve upgrades were completed and plant heatup and startup was in progress. The reactor coolant system (RCS) was being maintained at a temperature of approximately 545 degrees F and a pressurizer (PRZR) pressure of approximately 2235 PSIG. The circuit breaker for the "A" main feedwater (MFW) pump had jumpers installed and was closed in the "test" position, to comply with temporary administrative requirements.

Auxiliary feedwater (AFW) pumps had just been secured as directed by these temporary administrative requirements, so there were no AFW pumps running.

II. DESCRIPTION OF EVENT:

A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- August 7, 1996, 2009 EDST: Event date and time.
- August 7, 1996, 2009 EDST: Discovery date and time.
- August 7, 1996, 2024 EDST: One running AFW pump is secured.
- August 7, 1996, 2135 EDST: All running AFW pumps are secured.

B. EVENT:

On August 7, 1996, at approximately 2009 EDST, the plant was in Mode 3. The RCS was being maintained at a temperature of approximately 545 degrees F and a PRZR pressure of approximately 2235 PSIG. As directed by Normal Operating Procedure O-1.2, "Plant Startup From Hot Shutdown to Full Load", the Control Room operators moved an "AFW Bypass Switch" from the "Defeat" to the "Normal" position. Due to an undetected improper configuration of the circuit breaker for the "A" MFW pump, the 2 of 2 logic for both MFW pump breakers open was present, which caused an autostart of both the "A" and "B" AFW pumps.

The Control Room operators observed the autostart of both the "A" and "B" AFW pumps, and controlled AFW flow to the desired flow rate for Mode 3 conditions. One of the running AFW pumps was secured at approximately 2024 EDST. The Control Room operators requested that plant electricians investigate the problem. Electricians determined, when racking out the circuit breaker into the "test" position, the breaker positioning arm had travelled beyond its mechanical stop. This caused an undetected interference between the racking arm and the 52S auxiliary switch actuating rod, which prevented the 52S switch from opening to provide circuit logic that the breaker was in the closed position. The breaker was properly racked out, and electricians verified there was no interference and that the 52S switch had opened.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	96	-- 011	-- 00	3 OF 5

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

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 when both the "A" and "B" AFW pumps autostarted after the AFW Bypass Switch was placed in the "Normal" position.

F. OPERATOR ACTION:

After both the "A" and "B" AFW pumps autostarted, the Control Room operators took prompt actions to control AFW flow. They requested that the plant electricians determine the cause of the problem. The Control Room operators subsequently notified higher supervision and notified the NRC per 10CFR50.72 (b) (2) (ii), non-emergency four hour notification, at approximately 2226 EDST on August 7, 1996.

G. SAFETY SYSTEM RESPONSES:

Both the "A" and "B" AFW pumps autostarted as per design.

III. CAUSE OF EVENT:

A. IMMEDIATE CAUSE:

The immediate cause of the autostart of both the "A" and "B" AFW pumps was the autostart logic, which was satisfied by 52S contacts providing circuit logic that both MFW pump breakers were open and an AFW Bypass Switch in "Normal".

B. INTERMEDIATE CAUSE:

The intermediate cause of autostart logic being satisfied was an undetected improper configuration of the "A" MFW pump circuit breaker.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	96	-- 011	-- 00	4 OF 5

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

C. ROOT CAUSE:

The underlying cause of the improper configuration was an undetected internal interference within the "A" MFW pump circuit breaker. When the breaker was racked out to the test position, the breaker positioning arm travelled beyond its mechanical stop. This caused interference between the racking arm and the actuating rod for the 52S auxiliary contact switch. Therefore, while the breaker was physically closed in the "test" position, the auxiliary switch did not provide circuit logic that the breaker was in the closed position.

This situation was created to be in compliance with the Ginna Station Improved Technical Specifications (ITS) Table 3.3.2-1 Function 6.f. To prevent an unnecessary actuation of both AFW pumps during Mode 2 conditions, a MFW pump breaker may be administratively closed in the test position, provided it is capable of being tripped on undervoltage and overcurrent conditions. The administrative requirements were established to comply with ITS Table 3.3.2-1, which requires the autostart function of the motor-driven AFW pump upon opening of both MFW pump breakers during Modes 1 and 2. Prior to Amendment No. 61 to the ITS, this function was only required in Mode 1 when the MFW pumps were actually in service. The addition of Mode 2 (when the MFW pumps may not be in service) was inadvertently added to the ITS by Amendment No. 61.

This event is NUREG-1022 Cause Code (A), "Personnel Error". This error was a cognitive error on the part of a plant electrician, who did not detect the interference between the racking arm and the actuating rod. This error was associated with activities that were covered by an approved procedure, and was not contrary to that procedure. The procedural guidance was correct, but enhancements to the procedure have been identified. There were no unusual characteristics of the location of this breaker that contributed to this event. Note that this interference can only be created when racking the breaker out to the test position.

The autostart of the AFW pump 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)". The start of an AFW pump is an actuation of an ESF.

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 autostart of both the "A" and "B" AFW pumps because:

- The autostart occurred with acceptable levels in both S/Gs. AFW flow was controlled to maintain these levels.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	96	-- 011	-- 00	5 OF 5

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

- The limiting case for the supply of AFW is the Loss of Feedwater accident at 100% power. The plant condition at the time of this event was less than 5% power.

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:

- AFW flow was controlled as desired to maintain S/G level.
- The running AFW pumps were secured.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

- The ITS will be revised to eliminate the need for having a MFW pump breaker closed in the test position during Mode 2 conditions.
- Procedure O-2.1 will be enhanced to include specifically addressing that the 52S switch actuating rod is in the correct position when the breaker is racked out in the test position.

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 could be identified. However, LERs 96-004, 96-008, and 96-010 are similar events with different root causes.

C. SPECIAL COMMENTS:

None