

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8709040467 DOC. DATE: 87/09/01 NOTARIZED: NO DOCKET #
 FACIL: 50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
 AUTH. NAME AUTHOR AFFILIATION
 MAZZAFERRO, P. A. Niagara Mohawk Power Corp.
 LEMPGES, T. E. Niagara Mohawk Power Corp.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-013-00: on 870802 reactor bldg emergency ventilation initiation occurred. Caused by pneumatic timing relay failure. Reactor protection sys Bus 11 transferred to maint bus & one-half scram reset. W/870901 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1, SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL		RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	
	PD1-1 LA	1	1	PD1-1 PD	1	1
	BENEDICT, R	1	1	HAUGHEY, M	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
	DEDRO	1	1	NRR/DEST/ADS	1	0
	NRR/DEST/CEB	1	1	NRR/DEST/ELB	1	1
	NRR/DEST/ICSB	1	1	NRR/DEST/MEB	1	1
	NRR/DEST/MTB	1	1	NRR/DEST/PSB	1	1
	NRR/DEST/RSB	1	1	NRR/DEST/SGB	1	1
	NRR/DLPQ/HFB	1	1	NRR/DLPQ/QAB	1	1
	NRR/DOEA/EAB	1	1	NRR/DREP/RAB	1	1
	NRR/DREP/RPB	2	2	NRR/PMAS/ILRB	1	1
	REG FILE 02	1	1	RES DEPY GI	1	1
	RES TELFORD, J	1	1	RES/DE/EIB	1	1
	RGN1 FILE 01	1	1			
EXTERNAL:	EG&G GROH, M	5	5	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: LTTR 44 ENCL 43



LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Nine Mile Point Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 2 2 0	PAGE (3) 1 OF 0 4
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TITLE (4)
Reactor Building Emergency Ventilation Initiation Caused By Relay Failure

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(S)
08	02	87	87	013	00	09	01	87			05000
											05000

OPERATING MODE (9) N THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL (10) 089	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)
	20.405(a)(1)(i)	50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(ii)	50.36(c)(2)		50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Peter A. Mazzaferro, Assistant Supervisor Technical Support	TELEPHONE NUMBER AREA CODE: 315, 349-2190
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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	
X	E	F	R	L	Y	G	0	8	0	Y

SUPPLEMENTAL REPORT EXPECTED (14)

YES (if yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

ABSTRACT

On August 2, 1987, Nine Mile Point Unit 1 (NMP1) was operating at 89% power with the mode switch in the "RUN" position. At 1300 hours the unit experienced a trip of Reactor Protection System (RPS) Motor Generator (MG) Set 162. Subsequently, RPS Bus 11 was deenergized. This resulted in a one-half scram, Reactor Building Emergency Ventilation (RBEV) initiation, Control Room Emergency Ventilation (CREV) initiation, and an isolation of the Reactor Water Cleanup System (RWCU). Upon investigation, it was found that the coil of the pneumatic timing relay in the primary protective relaying circuit of MG Set 162 had failed. This caused the fuse in that circuit to blow, deenergizing one of two series contactors and isolating RPS Bus 11 from its power supply.

Immediate corrective action included transferring RPS Bus 11 to the maintenance bus, resetting the one-half scram, restoring the normal Reactor Building and Control Room ventilation, and returning the RWCU to service. Subsequent corrective action consisted of replacing the blown fuse and the pneumatic timing relay under a station work request, and returning RPS Bus 11 to MG Set 162. Additional corrective action is not deemed necessary at this time.

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		8 7	0 1 3	0 0	0 2	OF 0 4

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

I. DESCRIPTION OF EVENT

On August 2, 1987, Nine Mile Point Unit 1 (NMP1) was operating at 89% power with the mode switch in the "RUN" position. At 1300 hours the unit experienced a trip of Reactor Protection System (RPS) Motor Generator (MG) Set 162. Subsequently, RPS Bus 11 was deenergized. This resulted in a one-half scram, Reactor Building Emergency Ventilation (RBEV) initiation, Control Room Emergency Ventilation (CREV) initiation, and an isolation of the Reactor Water Cleanup System (RWCU). Upon investigation, it was found that the coil of the pneumatic timing relay (2/TDC) in the primary protective relaying circuit of MG Set 162 had failed. This caused the fuse (FU-1/20A) in that circuit to blow, deenergizing one of two series contactors (42-1) and isolating RPS Bus 11 from its power supply (see electrical diagram on page 4 of this report).

Each of the two RPS MG Sets have a protective relaying scheme consisting of a primary and an alternate channel. Each channel controls the action of one of two series contactors (42-1 and 42-2) which isolate the associated RPS channel from the MG set. The two channels of protective relaying are separately fused. Deenergizing either of the two contactors will isolate the associated RPS bus, causing a one-half scram when the mode switch is in the "RUN" position. Deenergizing either channel of the RPS, under any position of the mode switch, will result in a RBEV initiation, a CREV initiation, and a RWCU isolation because the logic for these systems is noncoincident.

II. CAUSE OF THE EVENT

The cause of the fuse failure was a physical fault due to the burned out coil of the pneumatic timing relay in the primary protective relaying circuit of MG Set 162. The most likely root cause of the coil failure was degradation resulting from aging during normal service of the relay. The relay was damaged by the coil failure, rendering examination for further analysis impractical.

III. ANALYSIS OF THE EVENT

Since the protective relaying functioned as designed, there were no adverse safety consequences resulting from this event. The actuation logic of the Reactor Protection System is a deenergize to function circuit. Therefore, individual component failures (such as the one which caused this event) cause the associated RPS channel to trip. This places the associated systems into service to perform their safety functions if noncoincident logic is involved. This analysis is applicable to any normal operating configuration and power level.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

IV CORRECTIVE ACTION

Immediate corrective action consisted of transferring RPS Bus 11 to Instrument and Control Bus 130A, initiating a station work request to investigate the cause of the MG Set trip, resetting the one-half scram, returning the normal Reactor Building and Control Room Ventilation systems to service, and returning the RWCU to service.

Subsequent corrective action consisted of replacing the failed timing relay and the blown fuse, under Station Work Request #126052, and returning MG Set 162 to service.

The timing relay that failed in this event is also used in the protective relaying circuits of MG Sets 161, 171, 172, and 167. Upon investigation into the failure history of this model relay, it has been determined that only 2 failures have occurred in the past 90 MG Set years (5 MG Sets times 18 years of plant operation). Since the number of failures is small, Niagara Mohawk does not consider these failures to be a safety or reliability concern. Therefore, no additional corrective action is deemed necessary at this time. However, should additional failures occur and our trending program (Site Administrative Procedure AP-5.0 and Site Supervisory Procedure S-SUP-1) indicate an undesirable trend, additional corrective action will be reconsidered.

V. ADDITIONAL INFORMATION

The relay was a General Electric model CR2820B110AA2 (Series A) type relay.

The relay's manufacturer identification code from Table 9 of the NPRDS Reporting Procedures Manual is "G080".

The NUREG 1022 Appendix B failure code is "X".

The IEEE 803A-1983 function identifier code is "RLY".

The IEEE 805-1983 system code is "EF".

There have been no previous events of this type at NMP1.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)

Nine Mile Point Unit 1

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

DOCKET NUMBER (2)

0 5 1 0 0 0 2 2 0

LER NUMBER (6)

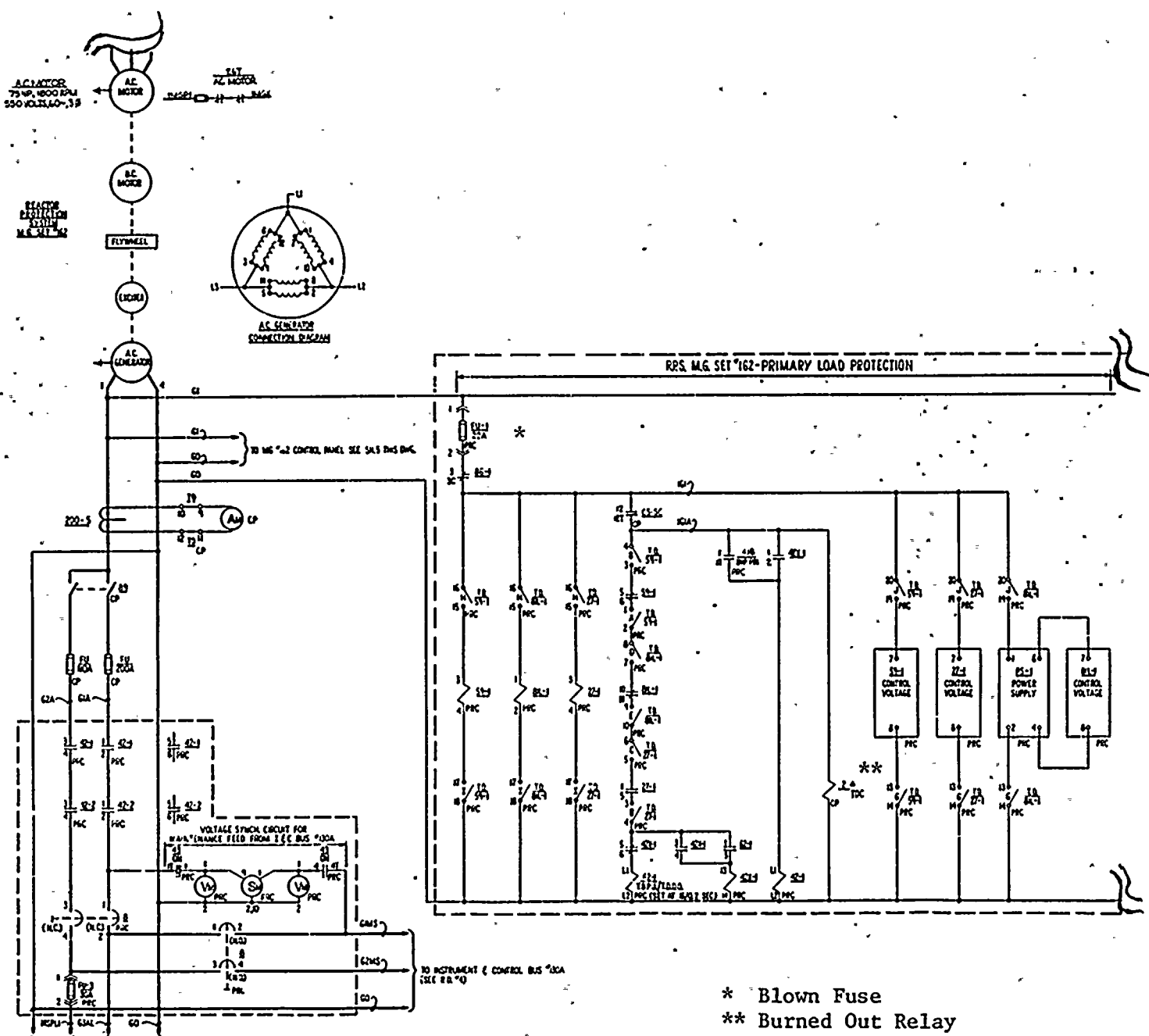
YEAR 8 1 7

SEQUENTIAL NUMBER 0 1 3

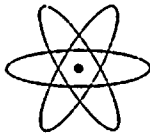
REVISION NUMBER 0 0

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NIAGARA MOHAWK POWER CORPORATION

NIAGARA  MOHAWK

301 PLAINFIELD ROAD
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THOMAS E. LEMPGES
VICE PRESIDENT—NUCLEAR GENERATION

NMP27275

September 1, 1987

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

RE: Docket No. 50-220
LER 87-13

Gentlemen:

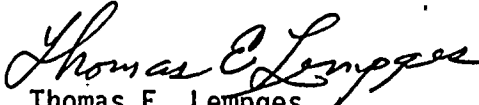
In accordance with 10 CFR 50.73, we hereby submit the following Licensee Event Report:

LER 87-13 Which is being submitted in accordance with 10 CFR 50.73 (a)(2)(iv), "Any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS). However, actuation of an ESF, including the RPS, that resulted from and was part of the preplanned sequence during testing or reactor operation need not be reported."

10 CFR 50.72 reports were made at 1450 hours and 1630 hours on August 2, 1987.

This report was completed in the format designated in NUREG-1022, Supplement 2, dated September 1985.

Very truly yours,


Thomas E. Lempges
Vice President
Nuclear Generation

TEL/meh

Attachment

cc: William T. Russell
Regional Administrator

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