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REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9005310051 DOC. DATE: 90/05/25 NOTARIZED: NO DOCKET #
 FACIL: 50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
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 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-005-00: on 900425, low safeguards bus voltage during start of "A" reactor coolant pump.

W/9 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 8
 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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	PD1-3 LA	1 1	PD1-3 PD	1 1
	JOHNSON, A	1 1		
INTERNAL:	ACNW	2 2	AEOD/DOA	1 1
	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/DLPQ/LHFB11	1 1
	NRR/DLPQ/LPEB10	1 1	NRR/DOEA/OEAB11	1 1
	NRR/DREP/PRPB11	2 2	NRR/DST/SELB 8D	1 1
	NRR/DST/SICB 7E	1 1	NRR/DST/SRLB8D1	1 1
	NRR/DST/SRXB 8E	1 1	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		

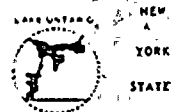
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May 25, 1990

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

Subject: LER 90-005, Low Safeguards Bus Voltage During Start
of "A" Reactor Coolant Pump Causes Automatic Start of
the "A" Emergency Diesel Generator
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 Protec-
tion System (RPS)", the attached Licensee Event Report LER 90-005
is hereby submitted.

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

Very truly yours,

Robert C. Mecredy
Robert C. Mecredy
Division Manager
Nuclear Production

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

Ginna USNRC Senior Resident Inspector

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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R.E. Ginna Nuclear Power Plant	0 5 0 0 0 2 4 4	9 0	0 0 5	0 0	0 2	OF	0 7

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

I. PRE-EVENT PLANT CONDITIONS

The unit was in refueling shutdown for the Annual Refueling and Maintenance Outage. The reactor coolant system temperature and pressure were 71°F and 325 psig respectively. Refueling and primary side maintenance had been completed. Filling and venting of the reactor coolant system was in progress per operating procedure O-2.3.2, (Filling and Venting the Reactor Coolant System).

II. DESCRIPTION OF EVENT

A. DATES AND APPROXIMATE TIMES FOR MAJOR OCCURRENCES:

- o April 25, 1990, 1835 EDST: Event date and time.
- o April 25, 1990, 1835 EDST: Discovery date and time.
- o April 25, 1990, 1848 EDST: "A" Emergency Diesel Generator stopped and realigned for auto-standby.

B. EVENT:

On April 25, 1990, at 1835 EDST, with the reactor in the refueling shutdown condition, the Control Room received the following alarms during the start of the "A" Reactor Coolant Pump (RCP) per operating procedure O-2.3.2: Alarm J-24 (Emergency Diesel Gen 1A Panel), Alarm L-14 (Bus 14 Undervoltage - Safeguards) and Alarm L-23 (Bus 18 Undervoltage - Safeguards).

The Control Room operators immediately checked safeguards 480 volt buses 14 and 18 for proper voltage. They observed that during the start of the "A" RCP that safeguards buses 14 and 18 voltage was low (i.e. approximately 390 volts). The Control Room operators also at this time verified that the "A"

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

Emergency Diesel Generator had started and displayed proper voltage and frequency. As only 1 out of 4 Bus 14 and Bus 18 undervoltage monitoring sub-systems operated per bus the "A" Emergency Diesel Generator, by design, did not tie into Bus 14 or Bus 18, (i.e. it requires 2 out of the 4 undervoltage monitoring sub-systems per bus to operate for the Emergency Diesel Generator to tie-in to its respective Bus).

Subsequently, the Control Room operators observed that safeguards Buses 14 and 18 voltage had returned to normal after the "A" RCP attained rated speed (i.e. in approximately 30 seconds after initial start). It should be noted that, in previous years, starts of Reactor Coolant Pumps were from offsite power feed 34.5 KV Circuit #767.

On April 25, 1990 at 1848 EDST the undervoltage relays on Buses 14 and 18 undervoltage monitoring system were reset and the "A" Emergency Diesel Generator was removed from service and realigned for auto standby.

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 indication in the Control Room.



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

F. OPERATOR ACTION:

Following the Bus 14 and Bus 18 undervoltage alarms and the "A" Emergency Diesel Generator automatic start, the Control Room operators immediately verified voltage on Buses 14 and 18 via the normal power supply and that the "A" Emergency Diesel Generator displayed proper voltage and frequency.

G. SAFETY SYSTEM RESPONSES:

The "A" Emergency Diesel Generator automatically started and displayed proper voltage and frequency.

III. CAUSE OF EVENT

A. IMMEDIATE CAUSE:

The automatic actuation of the "A" Emergency Diesel Generator was due to an undervoltage signal from Bus 14 and/or Bus 18 undervoltage monitoring systems.

B. INTERMEDIATE CAUSE:

The undervoltage signal from the Bus 14 and/or Bus 18 undervoltage monitoring system was due to the following:

- o The reduction of Bus 14 and Bus 18 terminal voltage was due to the start of the "A" RCP. The "A" RCP power source is the same offsite power feed that is used for Bus 14 and Bus 18 (i.e. 34.5 KV circuit #751).

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

C. ROOT CAUSE:

The underlying cause of the low terminal voltage on Bus 14 and Bus 18 during the start of the "A" RCP was due to the large reactive inrush current and the associated voltage drop on Circuit 751.

Circuit 751 employs automatic voltage regulation to maintain the 34.5 KV voltage within acceptable limits under steady-state loading conditions. Automatic regulation requires a finite time to respond to voltage variations. (This time is much longer than the response time of the Bus 14 and Bus 18 undervoltage relays.)

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)". 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 this event with the following results and conclusions:

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

There were no operational or safety consequences or implications attributed to the starting of the "A" Emergency Diesel Generator because:

- o The "A" Emergency Diesel Generator operated as designed.
- o The unit was in refueling shutdown with low decay heat loads.
- o Both Buses 14 and 18 power supplies (i.e. normal and emergency) were either in use or available throughout the event.
- o Even considering the worst case scenario during this event, (i.e. the complete loss of offsite 34.5 KV circuit 751) the "A" Emergency Diesel Generator would have tied into safeguards Buses 14 and 18 and offsite 34.5 KV circuit 767 could have been crosstied immediately to supply power to the remaining 4160 volt and 480 volt "A" train non-safeguards loads.

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:

- o Once the "A" RCP attained rated speed the 480 volt Bus 14 and Bus 18 voltage returned to normal pre-event values.
- o The "A" Emergency Diesel Generator was taken out of service and realigned for auto standby.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

- o The "A" RCP start at cold Reactor Coolant System (RCS) conditions is the largest instantaneous load that offsite 34.5 KV circuit 751 will experience. An evaluation to determine what actions are necessary to increase the voltage performance of 34.5 KV circuit 751 prior to the start of an RCP at cold RCS conditions, will be performed. Based on this evaluation, appropriate actions deemed necessary will be taken.

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.