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FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
AUTH.NAME AUTHOR AFFILIATION
SWEET,K. Niagara Mohawk Power Corp.
FIRLIT,J.F. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-008-01:on 900523,actuation of ESF occurred caused by reactor bldg emergency ventilation.Caused by personnel error.Resetting control logic & alarms,returning reactor bldg normal ventilation to service.W/910419 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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	AEOD/ROAB/DSP	2	2	NRR/DET/ECMB 9H	1	1
	NRR/DET/EMEB 7E	1	1	NRR/DLPQ/LHFB11	1	1
	NRR/DLPQ/LPEB10	1	1	NRR/DOEA/OEAB	1	1
	NRR/DREP/PRPB11	2	2	NRR/DST/SELB 8D	1	1
	NRR/DST/SICB 7E	1	1	NRR/DST/SPLB8D1	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 BRYCE,J.H	3	3	L ST LOBBY WARD	1	1
	NRC PDR	1	1	NSIC MAYS,G	1	1
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RIDS/ADDS

RIDS/ADDS

NIAGARA MOHAWK

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Joseph F. Firlit
Vice President
Nuclear Generation

NMP77397

April 19 , 1991

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

RE: Docket No. 50-220
LER 90-08 Supplement 1

Gentlemen:

In accordance with 10CFR50.73, we hereby submit the following Licensee Event Report:

LER 90-08 Supplement 1	Which is being submitted in accordance with 10CFR50.73 (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 pre-planned sequence during testing or reactor operation need not be reported".

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

Very truly yours,

Joseph F. Firlit
Vice President - Nuclear Generation

JFF/DS/lmc

cc: Thomas T. Martin, Regional Administrator Region I
William A. Cook, Sr. Resident Inspector

Cert No P733438972

IE22
1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Nine Mile Point Unit 1	0 5 0 0 0 2 2 0	1 OF 0 5

TITLE (4)

Reactor Building Emergency Ventilation Initiation Due To Personnel Error

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)
									N/A	0 5 0 0 0
0 5	2 3	9 0	9 0	0 0 8	0 1	0 4	1 9	9 1	N/A	0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Ken Sweet, Manager Maintenance NMP1	3 1 5 3 4 9 - 2 4 6 2

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)	X NO				

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

On May 23, 1990, at 1313 hours, Nine Mile Point Unit 1 (NMP1) experienced an actuation of an Engineering Safety Feature (ESF). Specifically, initiation of Reactor Building Emergency Ventilation (RBEV) and isolation of Reactor Building Normal Ventilation. At the time of the event, the plant was in an extended refueling outage with the core loaded and the mode switch in the "REFUEL" position.

The root cause of the event was due to personnel error in that care was not exercised when working in close proximity to control devices.

The immediate corrective actions consisted of verifying the RBEV initiation, resetting control logic and alarms, returning the Reactor Building Normal Ventilation to service and restoring the RBEV to standby. Other corrective actions consisted of counseling the responsible technician and development of a Lessons Learned Transmittal (LLT). Long term corrective action is to evaluate the replacement of the Motor Generator sets with Uninterrupted Power Supplies (UPS) to provide a reliable power source to the monitors, along with evaluating the need to modify the RBEV logic.

1

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit 1	0 5 0 0 0 2 2 0	9 0	— 0 0 8	— 0 1	0 2 OF 0 5

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

I. DESCRIPTION OF EVENT

On May 23, 1990, at 1313 hours, Nine Mile Point Unit 1 (NMP1), with the plant in cold shutdown and the mode switch in "REFUEL", the unit experienced a Reactor Building Ventilation Isolation and a Reactor Building Emergency Ventilation (RBEV) initiation. The RBEV system is designed to automatically initiate upon receipt of a high radiation signal from either the Reactor Building Ventilation duct area of 5 mr/hr, or the Refuel Platform area of 1,000 mr/hr. At the time of the event the "Refuel/Bypass" switch was in the "Bypass" position, which inhibits RBEV auto initiation from the Refuel Platform Monitors. Immediately following the initiation, the Indicator Trip Unit was verified not to have a valid alarm signal and reset. The RBEV system was returned to standby and Reactor Building Normal Ventilation was returned to service.

At the time of the initiation an Instrument and Control (I&C) Chief Technician was providing a pre-job briefing for WR#171817, which was to replace two relays in the Reactor Building Constant Air Monitor (CAM) Trip Unit. This unit was housed adjacent to the RBEV Channel 11 Trip Unit which caused the initiation. The chief technician had removed the Reactor Building CAM Trip Unit from its mounting location to show the location of the relays and upon returning it to the rack it became stuck on the front of the mounting rack. The rack has a catch on the front which is designed to hold the unit when it is partially slid out for calibrations. In trying to free the trip unit from the catch, the adjacent RBEV Channel 11 Trip Unit was bumped hard enough to cause the alarm indicator to illuminate and initiation of RBEV to occur.

The initiation occurred May 23, 1990, at 1313 hours. Immediate corrective actions including clearing alarms, returning RBEV system to standby, and restoring normal Reactor Building Ventilation were performed by 1325 hours. NRC notification was made by Operations at 1436 hours by telephone.

II. CAUSE OF EVENT

The root cause of the event has been determined to be cognitive personnel error, specifically a chief I&C technician not carefully reinstalling the Reactor Building Constant Air Monitor (CAM) Indicator Trip Unit adjacent to the initiating Indicator Trip Unit (Reactor Building Emergency Ventilation Channel 11).

II. CAUSE OF EVENT (cont.)

While investigating the event on June 1, 1990, Reactor Building Emergency Ventilation (RBEV) was manually initiated and an effort was made to duplicate the initiation. The initiation signal could not be duplicated, however, upon removing RBEV Channel 11 Trip Unit it was discovered the power connection was not fully seated. This power connection is not provided a retaining mechanism to ensure it remains connected. This connector provides power for the detection and alarm relay control. The alarm relays, K1 and K2, are normally energized when not in alarm and upon loss of control power would initiate an output alarm and subsequent initiation. Also, there is no physical separation provided between the trip units. They are located in an open rack and contact is made with adjacent units as a unit is slid out for calibration. The lack of a retainer for the power connection and lack of a mechanical separation between units have been determined to be contributing factors of the event.

III. ANALYSIS OF EVENT

This event is reportable in accordance with 10CFR50.73 (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)."

There were no significant safety consequences as a result of this event. The plant was in a cold shutdown condition with fuel loaded in the core. The initiation of the Reactor Building Emergency Ventilation System (RBEVS) is the protective mode of operation, and thus performed its intended safety function. Had this event occurred during plant operations, the plant and operator response would have been the same. The operator actions are described in the appropriate operating procedures for the affected systems. Therefore, the health and safety of plant personnel and the general public were not affected.

The Reactor Building Normal Ventilation System was returned to service and the RBEVS was secured to its normal standby condition within 15 minutes by operator action.

IV. CORRECTIVE ACTIONS

Immediate corrective actions consisted of verifying Reactor Building Emergency Ventilation System (RBEVS) initiation, resetting alarms and annunciators, restoring RBEVS to standby and returning the Normal Reactor Building Ventilation System to service.

IV. CORRECTIVE ACTIONS (cont.)

Other corrective actions included counseling the chief I&C technician on exercising care when working in close proximity to sensitive automatic initiating control devices. A Lessons Learned Transmittal (LLT) was prepared to alert other department personnel responsible for activities of this type of the possible potential for inadvertent actuations.

Long term corrective action was based on an Independent Safety Engineering Group (ISEG) evaluation of past actuations. This evaluation reviewed 26 past occurrences beginning in 1985 and identified three primary causes.

1. 65% (17) loss of power to equipment in the logic circuitry.

2. 20% (5) attributed to procedure errors and or work practices.

3. 15% (4) attributed to spiking at the monitors. 1

Two hardware recommendations made by ISEG are under consideration.

1. Review and possibly modify the RBEV initiation logic.

2. Provide a highly reliable power supply to the monitors.

These modifications will be evaluated by Engineering and appropriate corrective actions will be performed to prevent reoccurrence of this event. If after the evaluation, corrective actions other than the proposed modifications recommended in this LER supplement are required, a supplement to this report will be submitted.

V. ADDITIONAL INFORMATION

A. Failed components: none.

B. Previous similar events:

There was one similar event which occurred August 15, 1985, reported in LER 85-10. At that time it was determined the event was an isolated occurrence. Consequently no corrective actions were developed which would have prevented this occurrence.

V. ADDITIONAL INFORMATION (cont.)

C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 FUNCTION	IEEE 805 SYSTEM ID
Reactor Building Ventilation System	N/A	VA
Reactor Building Emergency Ventilation System	N/A	VA
Radiation Monitor	MON	IL
Trip Unit	RI	IL
CAM	MON	IL