

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9710030162 DOC. DATE: 97/09/23 NOTARIZED: NO DOCKET #
 FACIL: 50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
 AUTH. NAME AUTHOR AFFILIATION
 DEAN, R.J. Niagara Mohawk Power Corp.
 DAHERG, K.A. Niagara Mohawk Power Corp.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-008-00: on 970826, potential spurious actuation of
 RWCU high pressure/low pressure interface valves occurred.
 Caused by personnel error. Fire watch affected zone replaced.
 W/970923 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:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD1-1 PD	1 1	HOOD, D	1 1
INTERNAL:	ACRS	1 1	AEOD/SPD/RAB	2 2
	AEOD/SPD/RRAB	1 1	ELE CENTER	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/DET/EIB	1 1	RGN1 FILE 01	1 1
EXTERNAL:	L ST LOBBY WARD	1 1	LITCO BRYCE, J H	1 1
	NOAC POORE, W.	1 1	NOAC QUEENER, DS	1 1
	NRC PDR	1 1	NUDOCS FULL TXT	1 1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS
 OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL
 DESK (DCD) ON EXTENSION 415-2083

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

C
A
T
E
G
O
R
Y

1

D
O
C
U
M
E
N
T

ADY





NIAGARA MOHAWK
GENERATION
BUSINESS GROUP

NINE MILE POINT NUCLEAR STATION/LAKE ROAD, P.O. BOX 63, LYCOMING, NEW YORK 13093

September 23, 1997
NMP2L 1726

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

RE: Docket No. 50-410
LER 97-08

Gentlemen:

In accordance with 10CFR50.73 (a)(2)(ii)(B), we are submitting LER 97-08, "Potential Spurious Actuation of RWCU High Pressure/Low Pressure Interface Valves."

Very truly yours,

Kim A. Dahlberg
Plant Manager - NMP2

KAD/GJG/cmk
Attachment

xc: Mr. H. J. Miller, Regional Administrator, Region I
Mr. B. S. Norris, Senior Resident Inspector
Records Management

IE22/1

9710030162 970923
PDR ADOCK 05000410
S PDR





LICENSEE EVENT REPORT (LER)

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) Nine Mile Point Unit 2	DOCKET NUMBER (2) 05000410	PAGE (3) 1 OF 5
---	-------------------------------	--------------------

TITLE (4)
Potential Spurious Actuation of RWCU High Pressure/Low Pressure Interface Valves

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	26	97	97	008	00	09	23	97	N/A	05000
									N/A	05000

OPERATING MODE (9) 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL (10) 95	<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(i) <input checked="" type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 73.71(b) <input type="checkbox"/> 73.71(c) <input type="checkbox"/> OTHER (Specify in Abstract below and In Text, NRC Form 366A)
------------------------	--	---	---	--

LICENSEE CONTACT FOR THIS LER (12)

NAME R. J. Dean - Manager Unit 2 Engineering	TELEPHONE NUMBER (315) 349-4240
---	------------------------------------

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS

SUPPLEMENTAL REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO			

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

On August 26, 1997, Niagara Mohawk (NMPC) determined that a fire in the Nine Mile Point Unit 2 (NMP2) Reactor Building elevation 328 could potentially have caused spurious actuation of the Reactor Water Cleanup System (RWCU) high pressure/low pressure interface valves. This is contrary to the requirements of 10CFR50 Appendix R Section III G. This condition would occur only if offsite power was available, since these valves automatically close upon loss of power or loss of air.

The cause of this event has been determined to be personnel error during the original evaluation of NMP2 for compliance to 10CFR50 Appendix R.

Immediate corrective action was to place a fire watch in the affected fire zone.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (0150-0104), 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 2	05000410	97	08	00	02 OF 05

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

I. DESCRIPTION OF EVENT

On August 26, 1997, Niagara Mohawk (NMPC) determined that a fire in the Nine Mile Point Unit 2 (NMP2) Reactor Building elevation 328 feet (Fire Sub Area (FSA) 35 Fire Zone 274 SW) could potentially have caused spurious actuation of the Reactor Water Cleanup System (RWCU) high pressure/low pressure interface valves. Numerous RWCU demineralizer vent/drain valves are identified in the NMP2 Updated Safety Analysis Report (USAR) Table 9B.5-1 as high/low pressure interfaces. However, Note 2 on Table 9B.5-1 incorrectly concludes "No single fire could cause sufficient spurious operations to violate the high/low pressure interface in this flow path, since these valves are controlled from local panels which are located in a separate fire area from the control room." In fact, 10CFR50 Appendix R Section III G requires that the design of controls for high/low pressure interface valves prohibit spurious actuation regardless of fire area.

This discrepancy was discovered during corrective actions being taken by NMPC as described in NMP2 LER 97-02. Specifically, NMPC is performing a confirmatory evaluation of plant design to verify that the systems required to achieve safe shutdown during a control room exposure fire are in accordance with the requirements of 10CFR50 Appendix A, Criterion 3.

II. CAUSE OF EVENT

The cause of this event has been determined to be a personnel error during the original evaluation of the plant for compliance to 10CFR50 Appendix R.

III. ANALYSIS OF EVENT

This event is being reported in accordance with 10CFR50.73(a)(2)(ii)(B), "any event or condition that resulted in a nuclear power plant being in a condition that was outside the design basis of the plant."

The NMP2 USAR Table 9B.8-1, "List of Safe Shutdown Equipment by Fire Area/Fire Zone", lists the fire areas, and fire zones and equipment within these areas. Fire Sub Area (FSA) 35 encompasses the south half of the reactor building from elevation 175 feet through elevation 328 feet. FSA 35 is separated into seven fire zones (213 SW, 223 SW, 238 SW, 245 SW, 255 SW, 262 SW and 274 SW). In the event of a fire in NMP2 Fire Zone 274 SW, one or more air operated valves could have spuriously opened to allow high pressure fluid into a low pressure system. Spurious opening of high pressure/low pressure interface valves could cause a loss in reactor pressure vessel inventory due to the resulting low pressure system line break. However, due to the design of NMP2, it is assumed that other fire areas would not have experienced fire damage. Therefore, as described in Table 9B.8-2 of the NMP2 USAR, Safe Shutdown Train III would be

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 30.0 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 2	05000410	97	- 08	- 00	03 OF 05	

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

III. ANALYSIS OF EVENT (cont'd)

available to provide make up. In addition since this postulated event can only occur if power is available, the non safety related feedwater pumps will also be available to provide limited makeup.

The high pressure portion of the system outside the primary containment is designed to prevent excessive loss of reactor coolant and release of radioactive materials. Containment isolation valves 2WCS*MOV102 and 112 would automatically isolate the portions of the high pressure system outside the primary containment when the following signals exist:

1. Low Low Reactor Water Level
2. High Pump Room and Heat Exchanger Room Ambient Temperature
3. High Differential Flow between RWCU supply and return of 150.5 gpm after a time delay of 45 seconds
4. High Non-Regenerative Heat Exchanger Outlet Temperature (Tube Side)
5. Reactor Building Radioactive Pipe Chase High Temperature
6. Standby Liquid Control or Redundant Reactivity Control Initiation

Since power cables for the RWCU isolation valves 2WCS*MOV102 and 2WCS*MOV112 are located in the same FSA as the control panels for the high pressure/low pressure interface valves, 10CFR50 Appendix R requires assumption of loss of both functions. However, since power cables for RWCU isolation valves 2WCS*MOV102 and 2WCS*MOV112 are located in FSA 35 Fire Zone 238 Reactor Building General Area, south elevation 240 feet, a single fire disabling both of these valves and causing spurious actuation of high pressure/low pressure valves in Fire Zone 274 SW Reactor Building General Area southeast elevation 328 feet is highly unlikely. Therefore, automatic isolation of RWCU based upon temperature and/or differential flow parameters would be expected.

However, even if the ability to close 2WCS*MOV102 and 2WCS*MOV112 were lost, operators would be able to diagnose the failure based upon loss of position indication, system flow anomalies and fire alarms from installed fire detectors, and take action to isolate RWCU by closing valves from the control room for which power cables are routed in fire areas other than FSA 35. NMPC has evaluated the actions required to manually isolate RWCU from the control room and determined that isolation could have been achieved within 14 minutes. A calculation was performed which determined that a loss of inventory for 14 minutes would result in doses below the 500 mRem whole body or equivalent limit in Regulatory Guide 1.29. An

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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 2	05000410	97	08	00	04 OF 05

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

III. ANALYSIS OF EVENT (cont'd)

assessment of pipe break affects for the 14 minutes required to isolate the system, indicated that it is bounded by the existing analysis discussed in NMP2 USAR Section 3.6A and Appendix 3C. Therefore, this condition posed no threat to the public or plant personnel.

IV. CORRECTIVE ACTIONS

1. Immediately upon discovery of the condition, a fire watch was started in Fire Zone 274 SW. After review by a qualified Fire Protection Engineer, this action was revised to a daily fire patrol.
2. Annunciator Response Procedure (N2-ARP-01) has been revised to require operators to isolate RWCU in response to a confirmed fire alarm in Fire Zone 274 SW.
3. NMPC will evaluate modifications to the system to resolve this issue or request an exemption to 10CFR50 Appendix R Section III G requirements from the NRC by the completion of the next refueling outage.
4. The corrective actions as described in LER 97-02 which have been expanded to evaluate fire areas beyond the control room will evaluate any additional concerns for NMP2.

V. ADDITIONAL INFORMATION

- A. Failed components: none.
- B. Previous similar events: LER 97-02 Supplement 1, "Potential Inoperability of Emergency Diesel Generator Service Water Cooling Outlet Valves During a Control Room Fire" identifies several 10CFR50 Appendix R deficiencies, identified by NMPC for plant response to a control room fire. A corrective action in LER 97-02 Supplement 2 is to perform a confirmatory evaluation of plant design to verify that the systems required to achieve safe shutdown during a control room exposure fire are in accordance with the requirements of 10CFR50, Appendix A, Criterion 3. Subsequently, this corrective action was expanded to evaluate fire areas other than the control room. The event described in this LER was identified during the continuing evaluation.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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		
		97	- 08	- 00		
Nine Mile Point Unit 2	05000410				05 OF 05	

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

V. **ADDITIONAL INFORMATION** (cont'd)

C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 FUNCTION	IEEE 805 SYSTEM ID
2WCS*AOV's	V	CE
2WCS*MOV102, and 112	20	CE

