REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8705110228 DOC. DATE: 87/05/05 NOTARIZED: NO DOCKET #
FACIL: 50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH. NAME AUTHOR AFFILIATION
RANDALL, R. G. Niagara Mohawk Power Corp.
LEMPGES, T. E. Niagara Mohawk Power Corp.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 86-003-01: on 861108, during core alterations, safety related radiation monitor removed from svc when Tech Spec misinterpreted. Caused by personnel error. Workers reminded to inform supervisors of off-normal controls. W/870505 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD1-1 LA	1	1	PD1-1 PD	1	1
	NEIGHBORS, D	1	1	MINER, S	1	1
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	1	1
	AEOD/DOA	1	1	AEOD/DSP/ROAB	2	2
	AEOD/DSP/TPAB	1	1	NRR/DEST/ADE	1	0
	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/EPB	1	1	NRR/DREP/RAB	1	1
	NRR/DREP/RPB	2	2	NRR/PMAS/ILRB	1	1
	NRR/PMAS/PTSB	1	1	REG FILE 02	1	1
	RES SPEIS, T	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 42 ENCL 40

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 2	0 5 0 0 0 4 1 0	1 OF 0 4

TITLE (4)

Partial Loss of Secondary Containment Isolation Actuation Instrumentation

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
1 1	0 8	8 6	8 6	— 0 0 3	— 0 1	0 5	0 5	8 7	N/A	0 5 0 0 0

OPERATING MODE (9)	5
POWER LEVEL (10)	0 0 0

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

	20.402(b)		20.405(c)		50.73(a)(2)(iv)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)
	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)

	73.71(b)
	73.71(c)
X	OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*

Voluntary

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Robert G. Randall, Supervisor Technical Support	3 1 5 · 3 4 9 - 2 4 4 5

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)

Misinterpretation of Technical Specification (TS) requirements resulted in the inoperability of a safety related radiation monitor during core alterations.

The cause of this event was personnel error. The contributing cause was the frequent low flow alarms from the sample cabinets.

The corrective actions are as follows:

1. Shift operations personnel have been reminded to inform the shift supervisor of any equipment or controls placed in an off normal condition, and to review and observe all TS requirements when preparing systems for testing.
2. Operations personnel have been instructed in determining the actions to be taken by the TS, should one of the isolation actuation instruments be declared inoperable.
3. All isolation actuation instrumentation addressed in table 3.3.2-1 of the TS has been reviewed for potential misinterpretation.
4. A training modification recommendation for correct interpretation of table 3.3.2-1 of the TS, based on the review mentioned above, has been completed.
5. Frequent low flow alarms have been remedied by the completion of modification PN2Y86MX153.

IE 22

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

I. Description of Event

On November 8, 1986 at 1238 hours, a safety related radiation monitor was removed from service while Nine Mile Point Nuclear Station Unit #2 was in the process of initial core loading. All the control rods were fully inserted and the reactor head was removed. The mode switch was in the refuel position. The core loading operation scheduled for the shift on duty was completed at 1535 hours and therefore "core alteration" ceased at that time. Misinterpretation of Technical Specification requirements resulted in the inoperability of a safety related radiation monitor during core alterations. A radiation monitoring sample cabinet that was rendered inoperable for maintenance at the start of the event contributed but in itself was not the direct cause of this event. This event was discovered during a review of equipment status on November 9, 1986.

II. Cause of Event

A root cause analysis has been completed per procedure S-SUP-1, "Root Cause Evaluation Program". The root cause of this event was personnel error that is cognitive in nature. The Niagara Mohawk licensed control room operator misinterpreted table 3.3.2-1 of the Technical Specifications. This table shows the minimum operable channels per trip system for Reactor Building Above the Refuel Floor Exhaust Radiation - High to be one. The operator thought that the normal operable channels per trip system was two since there are two radiation monitors in the exhaust ductwork above the refueling floor. (Table 3.3.2-1 of the Technical Specifications does not show normal operable channels per trip system). This is not the case. The monitor taken out of service was the only one for the division I trip system. The other monitor was division II. Thus in this case the minimum operable channels per trip system is the same as the normal operable channels per trip system.

The contributing cause was the frequent low flow alarms from the sample cabinets. The cause of the low flow alarms has been determined to be the charcoal filter cartridge breakdown due to pressure perturbation induced by the metal bellows sample pump. The pressure perturbation was causing the charcoal granules to be liberated from the filter mesh assembly thus being deposited throughout the balance of the sample flow path. This charcoal filter degradation has been exhibited in two ways. When the filter was removed, it no longer contained charcoal, only the mesh screens remained. In a more dramatic failure, the charcoal was not only gone but the mesh screens were torn. In some cases, the screens were ripped from the filter assembly and were found blocking the sample flow path downstream of the filter. After charcoal had been liberated from the filter, it was drawn through the balance of the sample flow path. The distribution of charcoal has caused low flow alarms to be generated in two ways: (1) Charcoal built up in the mass flow meter caused erroneous low flow readings; (2) Charcoal was trapped in the positive displacement metal bellows pump valving preventing a positive seal and causing leakage during the compression stroke of the piston, thus resulting in low flow.

III. ANALYSIS OF EVENT

This event is considered reportable per 10CFR50.73 part (a) (2) (i) (B) "Any operation or condition prohibited by the plant's Technical Specifications" on a voluntary basis. Actual violation of the Technical Specifications did not occur since the Division I trip channel was rendered inoperable at 1238 hours and core alterations concluded at 1535 hours (less than the three hours permitted in Section 3.3.2.b and table 3.3.2-1 of the Technical Specifications...2 hours by "*" footnote and 1 hour for the action statement). This was, however, more coincidental than precautionary, since NMPC personnel were not aware of the required action for the situation they were in.

There were no adverse safety consequences. The Division II Process Radiation Monitoring Trip System was operable throughout the event and no trips were observed. If a trip of the operable radiation monitor had occurred to initiate the associated Standby Gas Treatment (GTS) train, the ensuing events would have normal Reactor Building Ventilation (HVR) isolating and a low flow condition occurring, which would result in the other GTS train initiating. This would result in having both redundant trains of GTS running to maintain the required pressure differential for secondary containment integrity. Work on the Division I cabinet was completed and the system was back in operation prior to resumption of core loading.

A "reasonable and credible" alternative condition in this situation would be a dropped spent fuel bundle. Radiation detection and automatic isolation actuation would have occurred via the Division II trip system and Reactor Building Integrity would have been maintained.

The elapsed time of the event was approximately two hours and fifty seven minutes.

IV. CORRECTIVE ACTION

1) The Station Superintendent has reminded shift operations personnel per correspondence NMP#21,723 to inform the shift supervisor of any equipment or controls placed in an off normal condition, and to review and observe all Technical Specification requirements when preparing systems for surveillance testing.

2) Operations personnel have been instructed per the Station Shift Supervisor Instructions issued December 26, 1986 in determining the actions to be taken by the Technical Specifications, should one of the isolation actuation instruments be declared inoperable. These instructions also define the minimum verses normal number of channels per trip system.

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

3) All isolation actuation instrumentation addressed in table 3.3.2-1 of the Technical Specifications has been reviewed for potential misinterpretation.

4) Training for correct interpretation of table 3.3.2-1 of the Technical Specifications, based on the review mentioned above, has been completed as of March 4, 1987.

5) Frequent low flow alarms have been remedied by the completion of Modification PN2Y86MX153 which added a transient pressure accumulator between the sample pump and the charcoal filters (reference Sketch #1) for six category I gaseous process radiation monitor cabinets (2HVR*CAB14A, B, 32A, B, and 2CMS*CAB10A, B). No charcoal filter degradation has been experienced since this modification was installed. A modification request (Issue #I20045) has been initiated for similar design process radiation monitor cabinets.

V. ADDITIONAL INFORMATION

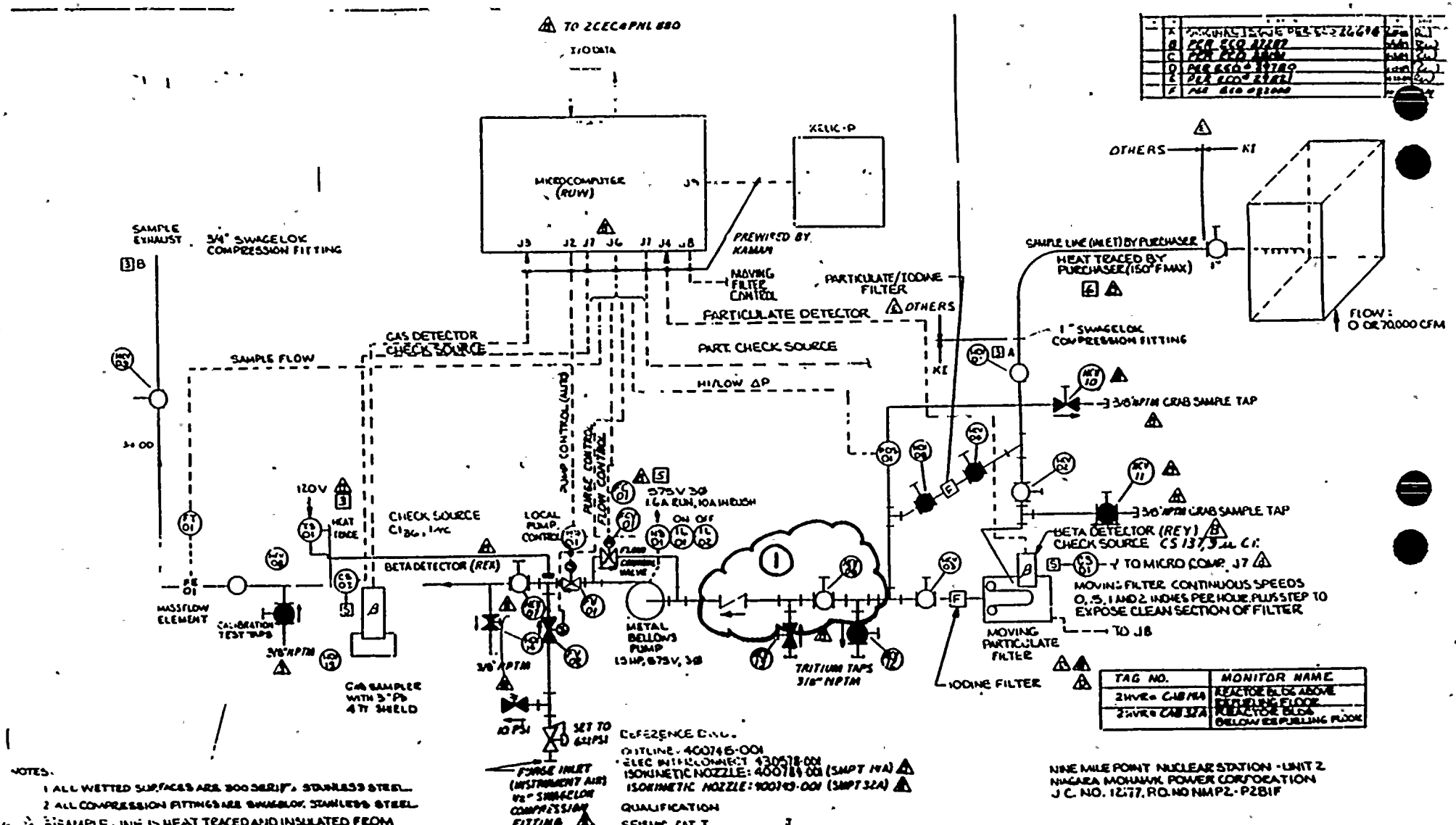
Identification of Components Referenced in this LER

Component	IEEE 803 EIIS Funct	IEEE 805 System ID
Sample Cabinet	CAB	IL
Radiation Monitors	MON	IL
Filter (on cabinet)	FLT	IL
Pump (on cabinet)	P	IL

There are no previous similar events.

1 ACCUMULATOR ADDED IN THIS SECTION OF LINE

SKETCH #1



TAG NO.	MONITOR NAME
2HVR-CAB 31A	REACTOR BLDG ABOVE REFUELING FLOOR
2HVR-CAB 32A	REACTOR BLDG BELOW REFUELING FLOOR

REFERENCE DWGS.
OUTLINE - 400746-001
ELEC INTERCONNECT 430578-001
ISOKINETIC NOZZLE: 400784-001 (SMPT 31A)
ISOKINETIC NOZZLE: 900349-001 (SMPT 32A)

QUALIFICATION
SEISMIC CAT I
ELECTRICAL CLASS 1E
QA CAT I

NOTES:
1 ALL WETTED SURFACES ARE 300 SERIES STAINLESS STEEL.
2 ALL COMPRESSION FITTINGS ARE SWAGELOK, STAINLESS STEEL.
3 SAMPLE LINE IS HEAT TRACED AND INSULATED FROM POINT A TO POINT B., PREWIRED BY KAMAN, PNVR & CABINA
4 SAMPLE FLOW RATES (NOMINAL):
2-HVR-RE14A } 225 SCFM
2-HVR-RE32A }
5 MOTORSTARTER LOCATED ON SKID AND PREWIRED BY KAMAN.

NINE MILE POINT NUCLEAR STATION - UNIT 2
NIAGARA MOHAWK POWER CORPORATION
J.C. NO. 12177, R.O. NO NMP2-P281F

Kaman Instrumentation Corporation

P&I DIAGRAM
OFFLINE GAS PARTICULATE
NMPC-MF GROUP 9

DRN 207

400159-(XX)

NMP-23853

NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

301 PLAINFIELD ROAD
SYRACUSE, NY 13212

THOMAS E. LEMPGES
VICE PRESIDENT—NUCLEAR GENERATION

May 5, 1987

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

RE: Docket No. 50-410
LER 86-03 - Supplement 1

Gentlemen:

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

LER 86-03
Supplement 1

A telephone notification was made at 1400 hours on November 9, 1986.

This report was completed in the format designated in NUREG-1022, Supplement No.2, dated September 1985.

Very truly yours,

Thomas E. Lempges

Thomas E. Lempges
Vice President
Nuclear Generation

TEL/DRG/mjd

Attachments

cc: Regional Administrator, Region 1
Sr. Resident Inspector, W. A. Cook

IE22
1/1