



April 14, 2000
NMP2L 1954

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

RE: Docket No. 50-410
LER 00-04

Gentlemen:

In accordance with 10CFR50.73(a)(2)(iv) and Technical Specification 4.8.1.1.3, we are submitting Licensee Event Report 00-04, "Division I Diesel Generator Special Report and Two Service Water System Isolations".

Very truly yours,

A handwritten signature in black ink, appearing to read "M. Peckham".

Michael F. Peckham
Plant Manager - NMP2

MFP/CES/tmk
Attachment

cc: Mr. H. J. Miller, NRC Regional Administrator, Region I
Mr. G. K. Hunegs, NRC Senior Resident Inspector
Records Management

*DFM
IE02*

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)

01 OF 06

TITLE (4) Division I Diesel Generator Special Report and Two Service Water System Isolations

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)	
03	15	00	00	04	00	04	14	00	N/A		
									N/A		

OPERATING MODE (9)

5

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

POWER LEVEL (10)

0

- 20.2201(b)
- 20.2203(a)(1)
- 20.2203(a)(2)(I)
- 20.2203(a)(2)(ii)
- 20.2203(a)(2)(iii)
- 20.2203(a)(2)(iv)

- 20.2203(a)(2)(v)
- 20.2203(a)(3)(I)
- 20.2203(a)(3)(ii)
- 20.2203(a)(4)
- 50.36(c)(1)
- 50.36(c)(2)

- 50.73(a)(2)(i)
- 50.73(a)(2)(ii)
- 50.73(a)(2)(iii)
- 50.73(a)(2)(iv)
- 50.73(a)(2)(v)
- 50.73(a)(2)(vii)

- 50.73(a)(2)(viii)
- 50.73(a)(2)(x)
- 73.71
- OTHER
(Specify in Abstract below and in Text, NRC Form 366A)
Special Report

LICENSEE CONTACT FOR THIS LER (12)

NAME

Don Bosnic - Manager Operations

TELEPHONE NUMBER

(315) 349-7952

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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)

On March 15, 2000, during surveillance testing while the plant was shutdown, the Division I Diesel Generator failed to control voltage. As required by Technical Specification 4.8.1.1.3, Niagara Mohawk Power Corporation is providing a special report for a non-valid failure of the diesel generator. In addition, on March 17 and March 21, 2000, the service water system isolated the non-essential portions of service water, which is an automatic engineered safety feature actuation.

The cause of the diesel generator high voltage condition was the lack of procedural guidance for the re-assembly of the Potential Transformer (PT) fuse carriage linkage. The PT fuse carriage linkage was re-assembled and tested satisfactorily. The re-assembly of the PT fuse carriage was proceduralized.

The cause of the first service water isolation was that the control room operators did not effectively assimilate and use available information to determine the condition of plant equipment. The circuit was repaired and tested satisfactorily. Static and/or simulator training will be enhanced to improve operator recognition of abnormal annunciator and alarm indications and clarifications to the watch standing policy will be developed.

The cause of the second service water isolation was that a supervisor stepped out of the supervisory role and became part of the task execution. The blown fuse and relay were replaced and the supervisor involved was counseled on oversight expectations. The Manager-Maintenance will reinforce his expectations on maintaining a supervisory role under all conditions.

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TEXT CONTINUATIONESTIMATED 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
(3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Nine Mile Point Unit 2	DOCKET NUMBER (2) 05000410	LER NUMBER (6)			PAGE (3) 02 OF 06
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		00	- 04	- 00	

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

I. DESCRIPTION OF EVENT

On March 15, 2000, Niagara Mohawk Power Corporation (NMPC) performed Surveillance Procedure N2-OSP-EGS-R003, "Diesel Generator Loss of Offsite Power with no ECCS (Emergency Core Cooling System) Division I and II," to start the Division I Diesel Generator and connect it to the electrical bus. The operators noted that the voltage was pegged upscale, and tripped the diesel generator.

A post event visual inspection of the diesel generator Potential Transformer (PT) fuse carriage revealed that the fuse fingers were not fully engaged within their respective stabs and the linkage was loose. The PT fuse carriage is part of the feedback circuit for the voltage regulator and electronic governor. During maintenance, the PT fuse carriage linkage was disassembled. Re-assembly of the PT fuse carriage linkage was performed without specific guidance. After re-assembly, resistance checks were performed to assure continuity within the affected circuits. The initial readings were outside the acceptable range and the PT fuse carriage was raised and lowered three times to wipe the contacts and improve continuity. Raising and lowering the PT fuse carriage most likely loosened the linkage. When the PT fuse carriage was lowered the final time, the fuse fingers were not fully engaged within their respective stabs, even though the resistance checks were within their acceptance criteria. Not having full engagement resulted in an intermittent opening of the contacts while the diesel generator was running, which disabled the voltage sensing circuit.

On March 17, 2000, while the plant was shutdown, NMPC was restoring the Division I electrical system to service using Procedure N2-PM-@12, "Shutdown of Switchgear 2ENS*SWG101 and 2BYS*SWG002A For Division I Maintenance Outages," when the non-safety portions of service water isolated. The diesel generator overvoltage condition, described above, damaged a fuse and relay in the Division I Service Water circuit. This was indicated by a main control room panel annunciator window and an illuminated inoperable status light. This Division I Service Water circuit provides an input to the Division II Service Water circuit that monitors Division I Service Water, power availability and pump operating status. Even though power was available to Division I Service Water and a service water pump was running, the Division II Service Water circuit did not receive an input from the Division I Service Water circuit because of the damaged components. This resulted in an automatic isolation of the Division II Service Water non-essential isolation valves upon implementing a step in Procedure N2-PM-@12. Most of the flow in the service water system was supplying non-essential loads, and when the automatic isolation occurred, the number of loads decreased to only essential loads. This caused the Division II Service Water pumps (2SWP*P1B and 2SWP*P1D) to trip on low flow. The running Division I Service Water pump (2SWP*P1C) continued to operate and maintained flow to the essential portions of service water.

On March 21, 2000, while the plant was shutdown, NMPC was replacing a relay in Division I Service Water System logic circuitry, when the non-essential portions of the system water system isolated. The relay was being replaced due to the overvoltage event discussed above. The work order's plant impact statement and pre-job brief discussed the possibility of causing the non-essential portion of service water to isolate due to the installation of jumpers during the replacement of the relay. The control room operators placed the service water system in a line-up where the service water pumps would not trip if an isolation occurred.

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

I. DESCRIPTION OF EVENT (Cont'd)

An electrician attached the first jumper without any problems. After several failed attempts to connect the second jumper, the electrician decided to try a different type of connector on the jumper. While the electrician removed the jumper from the panel, the connector touched the metal frame of the panel and caused a fuse to blow. The blown fuse in turn caused the non-essential portion of service water to isolate. During the installation of the jumper, the supervisor focused on verifying the jumper was landed on the correct terminal screw. While focusing on the terminal labels, the supervisor stepped out of his supervisory role and became part of the task execution instead of maintaining oversight of the job.

II. CAUSE OF EVENT

The cause of the diesel generator high voltage condition was the lack of procedural guidance on reassembling the linkage and subsequent confirmation of the correct position for the PT fuse carriage.

The cause of the March, 17, 2000, service water isolation was that control room operators did not effectively assimilate and use available information (annunciators and inoperable status light) to determine the condition of plant systems.

The cause of the March 21, 2000, service water isolation was that a supervisor stepped out of his supervisory role and became part of the task execution.

III. ANALYSIS OF EVENT

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv) and Technical Specification 4.8.1.1.3. 10 CFR 50.73(a)(2)(iv) requires a report when any event or condition resulted in a manual or automatic actuation of any engineered safety features, including the reactor protection system. On two occasions, the non-essential portions of service water automatically isolated. Technical Specification 4.8.1.1.3 requires a special report on all diesel generator failures, valid or non-valid.

The diesel generator is designed to provide onsite electrical power for the electrical loads necessary to safely shutdown the plant following a loss of coolant accident and loss of offsite power. The Division II Diesel Generator remained operable throughout the time frame that the Division I Diesel Generator was inoperable.

The failure of the Division I Diesel Generator is a non-valid failure as defined in Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Section C.2.e(2). There have been 2 valid failures in the last 100 valid tests. Based on these results, the interval for periodic testing remains at least once per 31 days as required by Technical Specification Table 4.8.1.1.2-1.

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V. ANALYSIS OF EVENT (Cont'd)

The service water system is designed with three loops (two essential loops and one non-essential loop). During an accident the non-essential loop is isolated.

The core damage frequency for the first and second service water isolations have been analyzed using the Nine Mile Point Unit 2 probabilistic risk analysis model. The first event that involved the loss of Service Water Pumps 2SWP*P1B and 2SWP*P1D had a negligible impact on core damage frequency (estimated at less than 1.0E-8/year). The low core damage frequency was because the alternate decay heat system was in service and the refueling cavity was flooded. The alternate decay heat system reduces risk while allowing maintenance on the residual heat removal system and its support systems (service water and emergency power). During the second service water isolation, the plant system line-ups and end results were identical except that the Division II Service Water Pumps did not trip. Therefore, the second service water isolation is bounded by the first service water isolation.

Based on the information provided above, there were no adverse safety consequences as a result of this event. The failure of the Division I Diesel Generator to control voltage or the automatic isolations of the non-essential loads of service water posed no threat to the health and safety of the general public or plant personnel.

IV. CORRECTIVE ACTIONS

1. NMPC re-assembled the PT fuse linkage and satisfactorily tested it. Also, NMPC visually inspected the Division II Diesel Generator PT fuse fingers and found them to be fully engaged within their stabs.
2. NMPC revised Procedure N2-EPM-EGS-R655, "4400KW Standby Diesel Generator and Auxiliary Equipment Refuel PM (Preventive Maintenance)," to include steps for the restoration of the PT fuse carriage linkage and conformation of the correct position of the PT fuse carriage.
3. NMPC repaired the Division I Service Water logic circuit (fuses and relays) for both service water isolations.
4. NMPC will develop clarification to the watch standing policy as it applies to the March 17, 2000 service water isolation, will remediate personnel involved in the March 17, 2000 service water isolation, and will conduct face-to-face focus meetings for all other appropriate Operations personnel by April 28, 2000.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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IV. CORRECTIVE ACTIONS (Cont'd)

5. NMPC counseled the supervisor regarding his performance on the importance of maintaining his supervisory role under all conditions. The Manager-Maintenance will reinforce the importance of maintaining a supervisory role under all conditions with maintenance supervisors by May 29, 2000.
6. NMPC will enhance static and/or simulator training to conduct exercises to improve operator recognition of abnormal annunciator and alarm indications under all plant modes by December 15, 2000.

V. Additional Information

- A. Failed Components: None
- B. Previous Similar Events:

Licensee Event Report 98-13 documented that plant personnel re-energized a circuit without fully evaluating the impact on the plant. The corrective actions associated with Licensee Event Report 98-13 corrected a knowledge deficiency associated with operations personnel understanding of the operation of Rosemount trip units. Licensee Event Report 00-04 cause is different (rule-based versus knowledge based) and therefore the corrective actions associated with Licensee Event Report 98-13 would not have prevented Licensee Event Report 00-04.

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C. Identification of components referred to in this licensee event report:

Components	IEEE 803A Function	IEEE 805 System ID
Service Water System	N/A	BI
Pumps	P	BI
Valves	ISV	BI
Annunciator	ANN	IB
Diesel Generator	DG	EK
Switchgear	SWGR	EK
Fuse	FU	BI
Relay	RLY	BI
Fuse Fingers	N/A	EK
Fuse Stabs	N/A	EK
Fuse Carriage	N/A	EK
Jumper Connector	CON	BI