



NINE MILE POINT NUCLEAR STATION / P.O. BOX 32 LYCOMING, NEW YORK 13093 / TELEPHONE (315) 343-2110

Joseph F. Firlit
Vice President
Nuclear Generation

April 25, 1992
NMP84874

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

RE: Docket no. 50-410
LER 92-08

Gentlemen:

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

LER 92-08 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)."

A 10CFR50.72 (b)(2)(ii) report was made at 1344 hours on March 27, 1992.

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/RM/lmc
ATTACHMENT

xc: Thomas T. Martin, Regional Administrator Region I
Wayne L. Schmidt, Senior Resident Inspector

Cent No P738305043

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-50), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)		DOCKET NUMBER (2)	PAGE (3)
Nine Mile Point Unit 2		0 5 0 0 0 4 1 2	1 OF 0 5

TITLE (4) High Pressure Core Spray Pump and Diesel Generator Starts Caused by Improper Testing 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)
0 3	2 7	9 2	9 2	0 0 8	0 0 0	0 4	2 5	9 2	N/A	0 5 0 0 0
N/A										

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50.71 (Check one or more of the following) (11)								
POWER LEVEL (10)	0 1 0 0	20.402(b)	20.406(c)	X	50.73(a)(2)(i)	73.71(b)	20.406(a)(1)(i)	50.73(a)(1)	50.73(a)(2)(ii)	73.71(c)
		20.406(a)(1)(ii)	50.73(a)(2)		50.73(a)(2)(iii)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)	20.406(a)(1)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)(i)	
		20.406(a)(1)(iv)	50.73(a)(2)(v)		50.73(a)(2)(v)(ii)		20.406(a)(1)(v)	50.73(a)(2)(vi)	50.73(a)(2)(v)(iii)	
		20.406(a)(1)(v)	50.73(a)(2)(vi)		50.73(a)(2)(v)(iv)					

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Ken L. Coates, Maintenance Manager NMP2	3 1 5 3 4 9 - 2 4 9 7

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On March 27, 1992 at 1225 hours, Nine Mile Point Unit 2 (NMP2) experienced two Engineered Safety Feature (ESF) actuations. Specifically, the High Pressure Core Spray (HPCS) pump and the Division III Emergency Diesel Generator both automatically started on a low low reactor vessel water level (Level 2) trip signal. No water was injected into the reactor vessel due to actual water level being above the high level trip, preventing the HPCS injection valve from opening. At the time of the event, the plant was shutdown with the reactor mode switch in the "REFUEL" position (Operational Condition 5), reactor pressure was 0 pounds per square inch gauge (psig), and reactor temperature was 90 degrees Fahrenheit.

The initial cause for the event was a Maintenance technician contacting the wrong terminals with a test meter. The root cause has been determined to be personnel error.

The immediate corrective actions were for operators to identify the cause of the event, verify normal plant status, and return the HPCS to standby. Additional corrective actions include: 1) counseling the technician involved; 2) revising the surveillance procedure; 3) modifying the test method; and 4) issuing a directive to help minimize the risk of relay state verification methods.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-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	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		92	008	00	02	OF 05

TEXT (If more space is required, use additional NRC Form 305A's) (17)

I. DESCRIPTION OF EVENT

On March 27, 1992 at 1225 hours, Nine Mile Point Unit 2 (NMP2) experienced two Engineered Safety Feature (ESF) actuations. Specifically, the High Pressure Core Spray (HPCS) pump and the Division III Emergency Diesel Generator both automatically started on a low low reactor vessel water level (Level 2) trip signal. No water was injected into the reactor vessel due to the actual water level being above the high level trip, preventing the injection valve from opening. At the time of the event, the plant was shutdown with the reactor mode switch in the "REFUEL" position (Operational Condition 5), the reactor vessel head removed, reactor pressure was 0 pounds per square inch gauge (psig), and reactor temperature was 90 degrees Fahrenheit.

The Instrument and Control (I&C) Department was performing I&C surveillance procedure N2-ISP-CSH-R107, "Operating Cycle Calibration of HPCS Initiation on Reactor Vessel Water Level Low Low, Level 2 and Isolation on High Level 8 Instrument Channels." An I&C technician was in Control Room Panel 2CEC*PNL625 measuring the resistance between contacts M1 and T1 of relay E22A-K73 to verify the relay was energized. By procedure, the technician was to place the probes of a digital multi-meter (in the resistance mode) across terminal T1 of relay E22A-K103 and terminal T1 of relay E22A-K83. The most probable cause of the event was the placement of the meter probes across the wrong terminals. With the digital multi-meter in the resistance mode, the meter effectively jumpered across open contacts for the Level 2 logic initiation and caused HPCS to actuate and the Division III Diesel Generator to start automatically. No actual low water level or loss of reactor coolant condition existed at the time of the event.

Initially, NMP2 licensed operators identified the cause of the ESF actuation and verified normal plant status. The operators then aborted the maintenance surveillance procedure, reset the initiation signal, and returned the HPCS and Division III Diesel Generator to standby.

II. CAUSE OF EVENT

A root cause investigation was performed utilizing Nuclear Interfacing Procedure, NIP-ECA-02, "Root Cause Evaluation."

The root cause of this event was determined to be a personnel error. The technician performing the surveillance test placed the digital multi-meter probes on the incorrect terminals causing the low low reactor water level initiation logic to energize.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

II. CAUSE OF EVENT (cont.)

A contributing factor to this event is the physical arrangement of the work area. Control Room Panel 2CEC*PNL625 is narrow with a high concentration of wiring and components. Access is physically restrictive and, consequently, it is difficult to perform any type of maintenance or surveillance activities. The physical obstructions in this panel contributed to this event.

III. ANALYSIS OF EVENT

This event is considered reportable under 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)."

In this event, the digital multi-meter in the resistance mode acted as a jumper across a combination of contacts to cause a Level 2 trip signal and the ESF actuations. At no time during this event did a low water level condition exist. A jumper can be postulated to occur during any surveillance procedure which requires use of a multimeter. This can lead to one of two situations: either the jumper could prevent actuation of a single component when required or it could actuate a component when not required. NMP2 Updated Safety Analysis Report (USAR) section 15.0.3.2.1 specifically addresses the consequences of single failures or operator errors.

This event caused an undesirable challenge to a plant ESF. However, the actuation of HPCS and the automatic start of the Division III Diesel Generator were conservative actions and did not pose any adverse safety consequences to the general public or plant personnel, nor did it affect the operators' ability to maintain the reactor in a safe condition.

The duration of this event from HPCS pump/Emergency Diesel Generator start to returning the Division III Diesel Generator to standby was 1 hour and 25 minutes (the HPCS pump ran for 17 seconds).

IV. CORRECTIVE ACTIONS

The immediate corrective actions were for licensed operators to identify the cause of the ESF actuation, verify it was not a valid signal, and return HPCS and Division III Diesel Generator to standby.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)

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Nine Mile Point Unit 2

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YEAR SEQUENTIAL NUMBER REVISION NUMBER

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IV. CORRECTIVE ACTIONS (cont.)

Additional corrective actions include the following:

1. The technician involved has received counseling on attention-to-detail from the General Supervisor of I&C Maintenance.
2. A revision to procedure N2-ISP-CSH-R107 has been completed to allow use of a test box that can be connected to the front panel "HPCS in test status" connector. This allows testing the low Level 2 initiating relay contacts without having to enter Control Room Panel 2CEC*PNL625.
3. A Plant Change Request (PC2-0101-92) has been initiated to add additional wiring to the "HPCS in test status" connector enabling testing of the high Level 8 initiating relay contacts without having to enter Control Room Panel 2CEC*PNL625.
4. Operations has begun validating the plant impact for refueling surveillances, and from this event they have placed the high pressure and low pressure Emergency Core Cooling System pumps in pull-to-lock to prevent recurrence.
5. The I&C General Supervisor has issued a memo to all NMP2 I&C personnel, with the following directives:
 - a. Review all refueling (R) surveillances prior to performance for steps requiring manual verification of contact state. If the contact can be verified in another way that minimizes risk, then notify I&C supervision and initiate the procedure change.
 - b. If the surveillance involves (or could involve due to proximity) circuits that cause an automatic start function, then notify the I&C supervision and alter the procedure to reduce the inherent risk of an unanticipated equipment start. One method might be to have the system secured prior to commencing the surveillance.
6. A Lessons Learned Transmittal (LLT) will be issued to ensure all applicable personnel are aware of this event and the need to practice self-verification techniques.

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

V. ADDITIONAL INFORMATION

- A. Failed components: none.
- B. Previous similar events:

There have been three previous similar events: LER 87-055, "Partial Primary Containment Isolation due to Instrument Leads Being Disconnected During a Surveillance/Personnel Error"; LER 88-043, "Inadvertent Initiation of the High Pressure Core Spray System due to Shorted Contacts Personnel Error"; and LER 88-054, "Engineered Safety Feature Actuation (Residual Heat Removal Pump 1A) due to Shorting of Contacts on the Start Relay Caused by Personnel Error Following Surveillance Test." The corrective actions for these three events could have prevented this event in that they all stressed attention-to-detail and good work practices; however, they did not prevent this occurrence.

- C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 EHS FUNCTION	IEEE 805 SYSTEM ID
High Pressure Core Spray	N/A	BG
Division III Diesel Generator	N/A	EK
Relay	44	BG
Diesel Generator	DG	EK
HPCS Pump	P	BG