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Joseph F. Firlit Vice President Nuclear Ceneration

April 25, 1992 NMP84874

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

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

Gentlemen:

In accordance with 10CFR50.73, we hereby submit " rollowing 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,

mi mi Comild 6.

Jos ph F. Firlit Vice President - Nuclear Generation

JFF/RM/Imc ATTACHN NT

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

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NAME	TELEPHONE NUMBER
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On March 27, 1992 at 1225 hours, Nine Mile Point Unit 2 Engineered Safety Feature (ESF) actuations. Specifically Spray (HPCS) pump and the Division 31 Emergency automatically started on a low low reactor vessel water leve water was injected into the reactor vessel due to actual wat high leval trip, preventing the HPCS injection valve from op event, the plant was shutdown with the reactor mode position (Operational Condition 5), reactor pressure was 0 gauge (psig), and reactor temperature was 90 degrees Far The initial cause for the event was a Maintenance technic terminals with a test meter. The root cause has been de error. The immediate corrective actions were for operators to event, verify normal plant status, and return the HPCS corrective actions include: 1) counseling the technician surveillance procedure; 3) modifying the test method; and help minimize the risk of relay state verification methods.	, the High Pressure Core Diesel Generator both al (Level 2) trip signal. No ater level being above the rening. At the time of the switch in the "REFUEL" O pounds per square inch menheit. Han contacting the wrong termined to be personnel identify the cause of the to standby. Additional involved; 2) revising the

NRC FORM 366A IG 801	U.S. NUCLEAR REGULATORY COMMISSION	APPROVÉD OMBING 315/ EXPIRES 4/30/92	
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Nine Mile Point Unit 2	05000410	92-008-00	0 2 0 0 5

# I. DESCRIPTION OF EVENT

On March 27, 1992 at 1225 hours, Nine Mile Point Unit 2 (NMP2) experienced two Engineered Safety Festure (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 avent, 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-I&P-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.

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#### 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 tuation, verify it was not a valid signal, and return HPCS and Division III Diesel Generator to standby.

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	CORRECTIVE ACTIONS (	cont.)						
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AUU	itional corrective actions i	neidde the following.						
1.	The technician involved General Supervisor of I	has received counseling or &C Maintenance.	n attenti	on-to-de	tail from	n the		
2.	a test box that can be connector. This allows	N2-ISP-CSH-R107 has bee connected to the front p testing the low Level 2 initi Room Panel 2CEC*PNL62	anel "H ating re	IPCS in	test sta	tus"		
3.	wiring to the "HPCS in t	st (PC2-0101-92) has been est status" connector enab acts without having to o	ling tes	ting of th	e high L	evel		
4.	from this event they	alidating the plant impact fo have placed the high p g System pumps in pull-to	ressure	and lo	w pres	sure		
5.	The I&C General Super with the following direc	visor has issued a memo stives:	to all N	MP2 1&(	C persor	nnel,		
	requiring manual	ling (R) surveillances prior verification of contact sta r way that minimizes risk, rocedure change	ate. If	the con	tact car	n be		

- 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 unanticipal equipment start. One method might be to have the system secured prior to commencing the surveillance.
- 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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# 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 EIIS FUNCTION	IEEE 805 SYSTEM ID			
High Pressure Core Spray	N/A	BG			
Division III Diesel Generator	N/A	EK			
Relay	4.4	BG			
Diesel Generator	DG	ĒK			
HPCS Pump	Р	BG			