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Big Rock Point Nuclear Plant, 10269 US-31 North, Charlevoix, MI 49720

Patrick M Donnelly
Plant Manager

March 28, 1994

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT - LICENSEE EVENT REPORT 94-003; UNPLANNED ACTUATION OF AN ENGINEERED SAFETY FEATURE - ELECTRIC FIRE PUMP.

LICENSEE EVENT REPORT 94-003; UNPLANNED ACTUATION OF AN ENGINEERED SAFETY FEATURE - ELECTRIC FIRE PUMP, is attached. This event is reportable to the Nuclear Regulatory Commission pursuant to 10 CFR 50.72(b)(2)(ii) and 10 CFR 50.73(a)(2)(iv).

Patrick M Donnelly



Patrick M Donnelly
Plant Manager

CC: Administrator, Region III, USNRC
NRC Resident Inspector - Big Rock Point

ATTACHMENT

9404050056 940328
PDR ADOCK 05000155
S PDR

A CMS ENERGY COMPANY

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LICENSEE EVENT REPORT (LER)

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TITLE (4)
UNPLANNED ACTUATION OF AN ENGINEERED SAFETY FEATURE - ELECTRIC FIRE PUMP

EVENT DATE (8)			LER NUMBER (8)		REPORT DATE (8)			OTHER FACILITIES INVOLVED (8)			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
0 3	0 7	9 4	9 4	0 0 3	0 0	0 3	2 8	9 4	N/A		
									N/A		

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

OPERATING MODE (9) N	20.402(b)	20.406(e)	<input checked="" type="checkbox"/>	80.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 0 0	20.408(a)(1)(B)	80.35(a)(1)	<input type="checkbox"/>	80.73(a)(2)(v)	73.71(c)
	20.408(a)(1)(B)	80.38(c)(2)	<input type="checkbox"/>	80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text)
	20.408(a)(1)(B)(i)	80.73(a)(2)(B)	<input type="checkbox"/>	80.73(a)(2)(vii)(A)	NRC Form 388A
	20.408(a)(1)(B)(ii)	80.73(a)(2)(B)	<input type="checkbox"/>	80.73(a)(2)(vii)(B)	
	20.408(a)(1)(B)(iii)	80.73(a)(2)(B)	<input type="checkbox"/>	80.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Michael D Bourassa, Senior Licensing Engineer	TELEPHONE NUMBER 6 1 6 5 4 7 - 6 5 3 7
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES <input type="checkbox"/> (If yes, complete EXPECTED SUBMISSION DATE)	NO <input checked="" type="checkbox"/>	EXPECTED SUBMISSION DATE (16)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (18)

On March 7, 1994, the reactor was in the cold shutdown condition and the Steam Drum had been drained to allow reactor vent valve repairs. This configuration generates an electric and diesel fire pump engineered safety features start signal through the Reactor Depressurization System (RDS) logic, which was inhibited per procedure by hand switches in the control room. These fire pumps also function as low pressure core spray pumps.

Following valve repair, the steam drum water level was raised above the automatic start setpoints of the fire pumps. To return the RDS system to its normal standby condition, RDS sensor cabinets were reset; and at 1812 hours that same day the key switch for the electric fire pump was switched from the "INHIBIT" to the "AUTO" position. Unexpectedly, the electric fire pump started. The operator then placed the switch back to "INHIBIT", reset the modules in the actuation cabinets, and stopped the pump. The Diesel Fire Pump was not affected.

Root cause has been determined to be "failure to use procedures". Corrective actions will include examining the level of procedure usage, training, and appropriate procedure revisions.

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						94	003	00	02	OF	05

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

IDENTIFICATION OF EVENT

I. Any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System. However, actuation of an ESF, including the RPS, that resulted from and was part of the preplanned sequence during testing or reactor operation need not be reported. This event is reportable because the actuation was not part of a preplanned sequence.

References

- a. 10 CFR 50.72(b)(2)(ii), and
- b. 10 CFR 50.73(a)(2)(iv).

CONDITIONS PRIOR TO THE EVENT

The reactor was in the cold shutdown condition. The facility was shutdown March 2, 1994, for a scheduled maintenance outage.

DESCRIPTION OF THE EVENT

On March 7, 1994, the reactor [RX] was in the cold shutdown condition and the Primary Coolant System [AD] level had been lowered beyond the bottom of the Steam Drum [SD] to allow reactor vent valve, MO-N004 [VPR], repairs. This configuration generates an electric motor driven and diesel engine driven fire pump [MO-ENG; KP;P] engineered safety features start signal (low water level) through the Reactor Depressurization System (RDS) logic; which was inhibited by hand switches [HS] HS-7085 and HS-7086 on the C-40 panel (PL) in the control room (NA).

NOTE: Both fire pumps function as low pressure core spray (BM) pumps. The source of water for the core spray system is supplied by the Fire Protection System [KP]. However, since the RDS is not required to be in an automatic mode when the reactor is in the cold shutdown condition, the fire pump hand switches were placed to "INHIBIT" in accordance with facility procedures to prevent the fire pumps from auto starting.

Following the valve repair, the steam drum water level was raised to plus 22 inches, which is above the automatic start setpoints of the fire pumps. The Shift Supervisor (SS) decided to return the RDS system to its normal standby condition by clearing the caution tags hung for lowering water level. This action would restore the automatic start feature of the fire pumps

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TEXT (If more space is required, use additional NRC Form 306A's) (17)

((decreasing (minus 17 inches) water level)) in the steam drum. This is a routine evolution.

An experienced Control Room Operator (CRO) was assigned the task. The SS gave the CRO the keys to unlock the RDS sensor cabinet doors, but not the actuation cabinet doors. The CRO carried out the order to remove the tagging, however he did not use a procedure to reset the RDS system. After the RDS sensor cabinets were reset, HS-7085 was switched from "INHIBIT" to the "AUTO" position at 1812 hours that same day. Unexpectedly, the electric fire pump started. The operator then returned the switch to "INHIBIT", reset the fire pump L2 modules on Actuation Cabinet, 1 and 3, and stopped the pump. The Diesel Fire Pump was not affected.

By 2041, a four-hour report had been made to the NRC Operations Center, notifying the agency that an unplanned ESF actuation had occurred.

CAUSE(s) OF THE EVENT

Failure to use procedures

A Standard Operating Procedure existed to control the evolution, but it was not used. Neither the Shift Supervisor nor the Control Room Operator saw the need because of the simple nature of the task.

Less Than Adequate Knowledge of the Fire Pump Start Circuitry

The Shift Supervisor and the Control Room Operator stated that they did not understand the interconnection between the RDS Sensor Cabinets and the RDS Actuation Cabinets.

Less Than Adequate Understanding of the Administrative Requirements

Although the administrative requirements are clear, they are not being adhered to. Both the Shift Supervisor and the Control Room Operator failed to apply the requirements of Administrative Procedure 2.1.2.

CORRECTIVE ACTION TO PREVENT RECURRENCE

A. Procedure Usage

Consider a management discussion with all the Shift Supervisors concerning their responsibilities, and managements' expectations under the Administrative Procedures with regards to procedure usage.

This action will be completed by May 15, 1994

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

B. System Knowledge

1. Implement training for all operators detailing the actuation of all RDS system components.
2. Conduct training for all licensed operators on what constitutes an Engineering Safety Feature and the increased attention needed when operating them.
3. Perform a complete review of Administrative 2.1.2 that contains a discussion of managements' expectations.

These actions will be completed by September 1, 1994.

C. Procedure Revisions/Corrections

1. Add a statement to SOP-29 (Nuclear Steam Supply System), section 6.5, that refers the operators to SOP-18 (Reactor Depressurization System) section 6.5.4, if the RDS requires resetting.
2. Consider changing section 6.5.4 of SOP-18 to a "continuous use procedure".
3. Evaluate changing the steps in SOP-18 section 6.5.4 so that the steam drum low sensor cabinet bistables are all reset prior to resetting the actuation cabinet L2 module.
4. Review SOP-18 to insure that the proper guidance is given to operate an Engineered Safety Feature; and the corrective action to take given an actuation.

These actions will be complete by September 1, 1994

5. Review all SOPs that contain equipment that is defined as Engineered Safety Features to insure that the proper guidance is given as to the care that must be exercised to avoid inadvertent actuation.

This action will be completed by December 1, 1994.

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SAFETY SIGNIFICANCE

Engineered Safety Features are provided to mitigate the consequences of events, and therefore should work properly when called upon and should not be challenged unnecessarily. As a result of this event, the electric fire pump worked properly when the RDS logic was satisfied; however it was challenged unnecessarily. The safety significance with regards to the fire pump actuation is negligible (reactor in cold shutdown, core spray valves remained closed and flow was never initiated), but the fact that the root cause identified less than adequate procedure usage, which led to the inadvertent actuation, is significant. The corrective actions described above are expected to increase the facility's attention in this matter.

OTHER REFERENCES

- LER 91-005 dated July 15, 1991.
- LER 92-007 dated May 26, 1992.
- LER 93-007 dated August 12, 1993.