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

Patrick M Donnelly
Plant Manager

April 8, 1994

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT - LICENSEE EVENT REPORT
94-005; UNPLANNED ACTUATION OF THE REACTOR PROTECTION SYSTEM - NO ROD MOTION.

LICENSEE EVENT REPORT 94-005; UNPLANNED ACTUATION OF THE REACTOR PROTECTION
SYSTEM - NO ROD MOTION, 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
Plant Manager

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

ATTACHMENT

IF22
1/1

9404130183 940408
PDR ADOCK 05000155
S PDR

A CMS ENERGY COMPANY

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) BIG ROCK POINT PLANT	DOCKET NUMBER (2) 0 5 0 0 0 1 5 5	PAGE (3) 1 0 0 4
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TITLE (4)
UNPLANNED ACTUATION OF THE REACTOR PROTECTION SYSTEM - NO ROD MOTION

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (8)			OTHER FACILITIES INVOLVED (9)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
0 3	2 0	9 4	9 4	0 0 5	0 0	0 4	0 8	9 4	N/A		
									N/A		

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: *Check one or more of the following!* (11)

OPERATING MODE (8)	N	20.402(b)	20.406(c)	<input checked="" type="checkbox"/>	60.73(a)(2)(b)	73.71(b)
POWER LEVEL (10)	0 0 0	20.406(a)(1)(b)	60.38(c)(1)	<input type="checkbox"/>	60.73(a)(2)(b)	73.71(c)
		20.406(a)(1)(b)	60.38(c)(2)	<input type="checkbox"/>	60.73(a)(2)(b)(A)	OTHER (Specify in Abstract below and in Text.)
		20.406(a)(1)(b)	60.73(a)(2)(b)	<input type="checkbox"/>	60.73(a)(2)(b)(B)	NRC Form 388A
		20.406(a)(1)(b)	60.73(a)(2)(b)	<input type="checkbox"/>	60.73(a)(2)(b)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Michael D Bourassa, Licensing Supervisor	TELEPHONE NUMBER AREA CODE 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
---	NOT APPLICABLE	---	---	N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES <input type="checkbox"/> IF you complete EXPECTED SUBMISSION DATE	NO <input checked="" type="checkbox"/>	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 10/11 on single space typewritten line) (16)

On March 20, 1994, a procedure was being performed that demonstrates the core remains subcritical when the highest worth control rod and an adjacent rod at a position known to contribute greater than or equal to .003 delta K/K under the most reactive conditions, are fully withdrawn. In order to proceed with control rod withdrawal, there must be no scram signals present and rod withdrawal interlocks must be clear.

In an attempt to clear an interlock (an unplugged jib winch on the refuel floor), the operators repositioned the mode switch from the REFUEL to RUN position at 1957 hours. A Reactor Protection System (RPS) scram resulted unexpectedly, and the operators immediately determined that the Main Steam Isolation Valve (MSIV) was in the closed position, causing the scram. However, there was no rod motion because all the rods were already inserted fully in the core. The mode switch was repositioned from RUN to REFUEL, the safety system reset, and the interlock cleared by plugging in the jib winch.

Corrective action will include additional training for the operations personnel with regards to interlock interaction with the mode switch, and procedure enhancements to prevent recurrence.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		9 4	— 0 0 5	— 0 0	0 2	OF 0 4

TEXT (If more space is required, use additional NRC Form 205A'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, although the systems' safety functions had already been completed (i.e., all rods in) the RPS scram signal was valid and the actuation was not part of the planned procedure. The automatic signal was valid because it was generated from the sensor by measurement of an actual physical system parameter that was at its setpoint (Main Steam Isolation Valve closed).

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 shutdown (all or all but one of the control rods fully inserted in the reactor core; and Primary System [AD] coolant water temperature less than 212 degrees F) condition. The facility was removed from service March 2, 1994, for a scheduled maintenance outage.

DESCRIPTION OF THE EVENT

On March 20, 1994, TR-43 Shutdown Margin Check, was being performed. This procedure demonstrates that the core remains subcritical when the highest worth control rod [AA] and an adjacent rod at a position known to contribute greater than or equal to .003 delta K/K under the most reactive conditions, are fully withdrawn. In order to proceed with control rod withdrawal, there must be no scram signals present and electrical interlocks [IEL] must be clear.

The control room [NA] started the test, and was able to withdraw the first control rod (the "adjacent" rod as described above), to its intended position. However, the operators could not establish permissive to withdraw the high worth control rod because of an active reactor crane [RCT;CRN] position interlock. (This interlock requires that the 75 Ton reactor crane not be positioned over the reactor. Limit switches [33] provide the input for this interlock). The withdrawn rod was then reinserted into the core.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 266A 9/117)

An Auxiliary Operator (AO) was dispatched to move the crane to clear the interlock. The control room then attempted to withdraw both rods, and again were unsuccessful. The one withdrawn rod was reinserted. The AO was then instructed to determine if the reactor deck jib crane was electrically plugged in (there is also a permissive interlock associated with the jib crane position). The AO reported that it was not. The Shift Supervisor then decided to place the mode switch in RUN (which is discussed in the procedure) to bypass the permissive interlock. The operators repositioned the mode switch [33] from the REFUEL to RUN position at 1957 hours.

Note: In the REFUEL position, the following Reactor Protection System [JE] trips are bypassed:

- Low Steam Drum [SD] Water Level
- Recirculation Waterline Valves [AD;FCV] Closed
- Main Steam Line Isolation Valve Closed
- High Condenser [SG] Pressure

In the RUN position, there are no rod withdrawal interlocks and no RPS trips are bypassed.

A Reactor Protection System scram resulted unexpectedly, and the operators immediately determined that the Main Steam Isolation Valve [SB;ISV] was in the closed position (this configuration constitutes a scram signal). However, there was no rod motion because the withdrawn "adjacent" rod had been reinserted earlier. The mode switch was repositioned from RUN to REFUEL, (versus opening the MSIV to clear the interlock), the safety system reset, and the interlock cleared by plugging in the jib winch and positioning it to allow rod withdrawal. TR-43 was then successfully completed.

By 2052, a four-hour report had been made to the NRC Operations Center, notifying the agency that an unplanned RPS actuation had occurred.

CAUSE(S) OF THE EVENT

The RPS scram has been attributed to personnel performance. The control room personnel missed the connection between the MSIV valve position and the mode switch. Contributing factors are:

- 1) Failure to apply knowledge of the interlocks to plant conditions.
- 2) Ineffective procedure guidance for explicitly specifying scram signals which must be cleared, and
- 3) Lack of generic guidance for mode switch manipulations.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR 9 4	SEQUENTIAL NUMBER — 0 0 5	REVISION NUMBER — 0 0	OF 0 4	OF 0 4

TEXT IF more space is required, use additional NRC Form 3854 (1/77)

CORRECTIVE ACTION TO PREVENT RECURRENCE

- 1) Training will be provided to operations personnel on interlocks and the interaction with the mode switch. The training should include simulator work.

THIS ACTION WILL BE COMPLETED JUNE 30, 1994

- 2) Revise TR-43, Shutdown Margin Check, to incorporate specific interlocks and specific trips which must be cleared for the test to be run in the two mode switch positions.

THIS ACTION WILL BE COMPLETE SEPTEMBER 1, 1994

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 RPS worked properly when the logic was satisfied; however it was challenged unnecessarily. The corrective actions taken to prevent recurrence should reduce these challenges in the future. The safety significance with regards to the RPS actuation is negligible because there was no control rod motion; the safety function had already be completed before the signal was generated.

OTHER REFERENCES

- A) Letter from NRC to CPCO dated 11/20/92: Clarification of Reporting Requirement for Actuation of the Reactor Protection System.
- B) LER 92-007 dated May 26, 1992: RPS Actuation With Control Rod Motion During Drive Testing.