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Big Rock Point Nuclear Plant, 10269 US-1 North, Charlevoix, MI 49720

December 26, 1990

DCD

William L Beckman  
Plant Manager

Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT -  
LICENSEE EVENT REPORT 90-007 (TECHNICAL SPECIFICATION VIOLATION - REACTOR  
RECIRCULATION PUMP/VALVE INTERLOCKS FAILURE)

Licensee Event Report (LER) 90-007 (Technical Specification Violation -  
Reactor Recirculation Pump/Valve Interlocks Failure) is attached. This event  
is reportable to the NRC per 10CFR50.73(a)(2)(i).

William L Beckman (Signed)

William L Beckman  
Plant Manager

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

Attachment

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>BIG ROCK POINT PLANT</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 1 5 5</b>	PAGE (3) <b>1 OF 0 3</b>
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TITLE (4)  
**Technical Specification Violation - Reactor Recirculation Pump/Valve Interlocks Failure**

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)		
									N/A			0 5 0 0 0		
1	12	79	09	07	00	12	26	90				0 5 0 0 0		

OPERATING MODE (9) <b>N</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)									
POWER LEVEL (10) <b>0 0 0</b>	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(a)	<input type="checkbox"/> 60.73a(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 60.36(a)(1)	<input type="checkbox"/> 60.73a(2)(v)	<input type="checkbox"/> 73.71(a)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 60.36(a)(2)	<input type="checkbox"/> 60.73a(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 305A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input checked="" type="checkbox"/> 60.73a(2)(i)	<input type="checkbox"/> 60.73a(2)(vii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 60.73a(2)(ii)	<input type="checkbox"/> 60.73a(2)(vii)(B)							
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 60.73a(2)(iii)	<input type="checkbox"/> 60.73a(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME <b>MDBourassa; Senior Technologist</b>		AREA CODE <b>6 1 6</b>	<b>5 4 7 - 6 5 3 7</b>

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)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO						

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

Technical Specification 6.1.5(g) states in part that, "If the discharge valve and bypass valves are closed, the motor will be tripped".

During the 1990 refueling outage, modification/maintenance activities were performed on the Reactor Recirculation System suction valve operators. System testing after these activities found that the number 1 recirculation pump motor would not trip if the discharge valve and bypass valve were closed. This condition is contrary to the Technical Specification described above, and was identified in a review of these activities conducted November 27, 1990.

Troubleshooting after the system testing had identified a mispositioned limit switch on the number 1 recirculation pump discharge valve. This switch was repositioned and tested. The pump motor would now trip in accordance with the conditions stated in Technical Specification 6.1.5(g).

To avoid recurrence, a plant surveillance procedure will be modified to include provisions for testing the reactor recirculation pump motor trip circuitry on associated valve closure.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  BIG ROCK POINT PLANT	DOCKET NUMBER (2)  0 5 0 0 0 1 5 5 9 0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	0 0 7	0 0	0 2	OF	0 3

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

Description of Event

During review of modification/maintenance activities on November 27, 1990 it was identified by system testing that the number 1 reactor recirculating (AD) pump (P) motor (MO) would not have tripped if the discharge valve (20) and bypass valve (20) were closed. Technical Specification 6.1.5(g) requires in part for the pump motor to be tripped if the discharge valve and bypass valve are closed. This feature prevents damage to the recirculation pump if flow is terminated by the closure of the discharge and bypass valve.

The plant was shut down for the 1990 refueling outage.

Cause of Failure

Troubleshooting activities found limit switch 13 (33) on the number 1 recirculation pump discharge valve to be 180 degrees out of position. It had been concluded, following extensive troubleshooting of the valve/pump interlock circuitry, that if routine testing had been implemented, it is reasonable that the 180 degree reversed rotor position would have been detected at an earlier date. Apparently the limit switch position had been changed as a result of past maintenance, some time after the initial acceptance test, without being properly tested.

Corrective Action

On November 24, 1990 at 0700, the discharge valve contacts (LS-13) were reset. The number 1 reactor recirculation loop was tested and the surveillance test was repeated by Operations personnel. Results were acceptable and in accordance with Technical Specification 6.1.5(g).

Action To Prevent Recurrence

An applicable surveillance procedure (TR-35, Reactor Recirculation Pump Interlock Test) will be revised to include provisions for testing of the reactor recirculation pump motor trip circuitry on associated valve closure as defined in the Plant Technical Specifications, Section 6.1.5(g). This will be completed by the 1991/1992 refueling outage which is the next time TR-35 is scheduled to be performed.

Safety Assessment

As found, level switch 13 would have initiated a pump trip upon closure of the discharge bypass valve; however, if the discharge valve had been closed first, the combination closure of the discharge valve and the discharge bypass valve would not have tripped the pump. Had these valves been inadvertently closed during pump operation, pump damage may have occurred if the operator did not manually trip the pump. Any leakage from the reactor recirculation pump could have been isolated by closing the suction valve and checking the discharge and discharge bypass valves closed.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  BIG ROCK POINT PLANT	DOCKET NUMBER (2)  0 5 0 0 0 1 5 5 9 0 - 0 0 7 - 0 0 0 3 OF 0 1 3	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		

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

Valve/pump interlocks are also provided as described in Technical Specification 6.1.5(g) to prevent against a "cold-water accident". These features remained operable, thus the safety significance of this finding was low.