Wisconsin Electric
POWER COMPANY

231 W Michigan, PO Box 2046, Milwaukee, WI 53201 (414) 221-2345

VPNPD-91-101
NRC-91-029

10 CFR 50.73

March 20, 1991

U. S. NUCLEAR REGULATORY COMMISSION
Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Gentlemen:

DOCKET 50-301
LICENSEE EVENT REPORT 90-002-01
INADVERTENT START OF AUXILIARY FEEDWATER PUMP
POINT BEACH NUCLEAR PLANT, UNIT 2

Enclosed is Licensee Event Report 90-002-01 for Point Beach Nuclear Plant, Unit 2. This report is provided in accordance with 10 CFR 50.73 (a)(2)(iv), "The licensee shall report...any event or condition that resulted in manual or automatic actuation of any engineering safety feature...."

This is a supplement to the report submitted on November 8, 1990, which described the inadvertent start of motor-driven auxiliary feedwater pump P38A during a ten-year hydrostatic test of the steam generators and associated systems. This report includes the results of our root cause evaluation and corrective actions.

If further information is required, please contact us.

Very truly yours,

C. W. Fay
Vice President
Nuclear Power

Enclosure

Copies to NRC Regional Administrator, Region III
NRC Resident Inspector

IE22
1/1

NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-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)	DOCKET NUMBER (2)	PAGE (3)
POINT BEACH NUCLEAR PLANT	0 5 0 0 0 3 0 1	1 OF 0 5

TITLE (4)

INADVERTENT START OF AUXILIARY FEEDWATER PUMPS

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)
1 0	0 9	9 0	9 0	—	0 0 2	— 0 1	0 3	2 0	9 1	UNIT 1	0 5 0 0 0 2 6 6
											0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10)		20.402(b)	20.405(c)	X	50.73(a)(2)(iv)	73.71(b)	
		20.405(a)(1)(i)	50.36(c)(1)		50.73(a)(2)(v)	73.71(c)	
		20.405(a)(1)(ii)	50.36(c)(2)		50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
		20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		
		20.405(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
		20.405(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
C. W. Fay, Vice President, Nuclear Power	4 1 4 2 2 1 - 2 8 1 1

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	B A	B K R	W 1 2 0	Y							

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

ABSTRACT:

On October 9, 1990, during a 10-year hydrostatic test of the steam generators and steam lines, and simultaneous performance of maintenance on the Unit 2 "B" train safeguards relays, both motor-driven auxiliary feedwater (AFW) pumps received automatic start signals. When the "A" main feed pump was started in accordance with the test procedure, the 2/3 steam generator low-low level automatic start logic for the motor-driven AFW pumps was fulfilled. The "A" motor-driven AFW pump automatically started. The "B" motor-driven AFW pump was already running as required by the hydrostatic test, with the steam generators filled and pressurized.

All systems functioned as designed. A small amount of water was injected into the Unit 1 "A" steam generator; however, an operator took immediate action to secure the injection. The "A" motor-driven AFW pump was secured. Upon release of its control switch, the switch returned to the auto position and the pump restarted and then tripped. An investigation revealed the pump's breaker pneumatic overload device had failed to completely reset following initial activation.

EVENT DESCRIPTION:

On October 9, 1990, at 1346 hours the "A" motor-driven auxiliary feedwater pump (P38A) received an automatic start signal. At the time of the event, operating personnel were in the process of performing a hydrostatic test of the Unit 2 steam generators and steam lines in accordance with inservice test procedure, IT-1025. The Unit 2 steam generators were filled and pressurized. In accordance with the procedure's requirements, the "B" motor-driven auxiliary feedwater pump (P38B) was running, and the main feed pump control switches were in pullout in order to block the signal for the auxiliary feedwater pump automatic start circuit. Simultaneous with this test condition, the Unit 2 "B" train safeguards had been removed from service for maintenance. Removal of the "B" train safeguards included the disconnection and tagout of the low-low steam generator level bistable output cables. This fulfilled the logic requirements for 2/3 low-low level even though the steam generators were full of water. The start circuitry was blocked as long as the main feedwater pump switches were in pullout.

In accordance with the test procedure, the "A" main feed pump control switch was passed through the neutral position to start the pump to increase the pressure to greater than that which the auxiliary feedwater pump supplies. This unblocked the steam generator low-low level automatic actuation signal to auxiliary feedwater resulting in automatic actuation of both motor-driven auxiliary feedwater pumps. The "B" motor-driven auxiliary feedwater pump was already running. The "A" pump started in accordance with system design.

Some water was injected into the Unit 1 "A" steam generator because of that unit's lower pressure (as compared to the hydrostatic test pressure of Unit 2). The Unit 1 control operator immediately closed the auxiliary feed discharge valve to the Unit 1 "A" steam generator. The operator attempted to secure the "A" motor-driven auxiliary feedwater pump by moving its control switch to the trip position. Upon releasing the control switch, however, the pump restarted. On the second automatic start, the pump tripped on overload.

An investigation by operating personnel showed that the "A" auxiliary feed pump breaker pneumatic overload device had actuated to trip the breaker. At 1411 hours, the breaker was reset. When restored to the auto position, the breaker and pump operated normally. At 1425 hours, the simulated steam generator low-low level signals were reset and the motor-driven auxiliary feedwater pumps were secured. During the period of time, the "A"

motor-driven auxiliary feedwater pump was tripped (approximately 45 minutes), Unit 1 was in a seven-day LCO in accordance with TS 15.3.4.C.2.

SYSTEM DESCRIPTION

At Point Beach, there are two motor driven auxiliary feedwater pumps shared between the two units and two turbine-driven auxiliary feedwater pumps, one for each unit. The motor-driven auxiliary feedwater pumps receive a start signal on (1) low-low water level in any steam generator, (2) trip or shutdown of both main feedwater pumps in one unit, or (3) safeguards sequence signal.

CAUSE

The causes of this event were as follows:

1. The starting of the main feedwater pump concurrent with "B" train safeguards service work fulfilled the logic required to automatically start both motor-driven auxiliary feedwater pumps. The two procedures, completed independently of each other, would have resulted in no consequence. The inservice test procedure was less than adequate in recognizing the potential for contributing to an inadvertent start of the auxiliary feedwater pump.

2. The subsequent trip after the second automatic start of the "A" motor-driven auxiliary feedwater pump was due to the failure of the pump breaker overload device to completely reset following the first automatic actuation.

REPORTABILITY

This event is being reported under the requirements of 10 CFR50.73 (a)(2)(iv), "The licensee shall report...any event or condition that resulted in a manual or automatic actuation of an engineered safety feature...."

SAFETY ASSESSMENT

The auxiliary feedwater system operated as designed. Therefore, the safety of the plant and the health and safety of the public and plant employees were not jeopardized.

CORRECTIVE ACTION

Short Term:

1. The auxiliary feedwater pump was immediately secured.

2. A maintenance work request (MWR 904517) was initiated to determine the cause of the "A" auxiliary feedwater pump breaker overload trip. The breaker was removed and overload tested. Testing of the "C" phase (Cφ) revealed resistance inconsistencies. Accordingly, the overload was disassembled, inspected, cleaned, and its pick-up current adjusted. Post-maintenance testing was successfully completed with the auxiliary feedwater pump running in the recirculation mode.

Long Term:

1. A ten-year pressure test of the main steam and main feed systems will be conducted during the upcoming Unit 1 Refueling 18. Because this procedure will be conducted concurrently with Instrument and Control maintenance, a procedure change shall be made. The change will "caution" the reactor operator of potential engineered safeguards actuations when operating the main feed pump control switch.

2. A root cause evaluation was performed on this event and similar occurrences of ESF actuations to determine what corrective actions could minimize the potential for recurrence. A specific precursor condition, common to each event, could not be identified. Based on this finding, no further corrective action is planned.

3. Modification Request 87-034, "Amptector Overload Upgrade of 480 V DB Breakers", had been initiated previously to replace all existing 480 V DB breakers overcurrent trip devices. Our schedule for this modification is for completion by the end of 1992. The auxiliary feedwater pump breakers are included within the scope of this modification request. This will improve the reliability and repeatability of the settings of the overcurrent trip devices and eliminate the time delay for the overload reset.

4. The original revision of this Licensee Event Report (301-90-002) was required reading for each operating crew. This revision will also be reviewed by each operating crew.

5. Operations outage planning is an area in which Point Beach management has been increasingly sensitive. Previous to this event, considerable time was spent integrating the Instrument and Control maintenance work with the Operations Unit 2, Refueling 16 activities. Operations planners analyzed the potential impacts of each instrument refurbishment on plant systems and assisted in the scheduling of the maintenance to limit overall exposure to safeguards actuations. Several potential events were avoided. Outage planning activities will continue with increased emphasis on preventing inadvertent safeguards actuations.

GENERIC IMPLICATIONS

A generic problem with the pneumatic overload devices was previously identified. This identification and evaluation concluded with the initiation of a modification request to change out 480 V breaker trip devices.