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VPNPD-91-430
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10 CFR 50.73

December 6, 1991

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

Gentlemen:

DOCKET 50-301
LICENSEE EVENT REPORT 91-005-00
BOTH SAFETY INJECTION PUMP BREAKERS RACKED IN
WITH RCS TEMPERATURE LESS THAN 275 DEGREES
POINT BEACH NUCLEAR PLANT, UNIT 2

Enclosed is Licensee Event Report 91-005-00 for Point Beach Nuclear Plant, Unit 2. This report is being filed in accordance with 10 CFR 50.73(a)(2)(i), "Any operation or condition prohibited by the plant's Technical Specifications." This report describes a condition in which both safety injection pumps were operable with RCS temperature less than 275 degrees and the RCS not open to atmosphere.

Please contact us if there are any questions concerning this report.

Very truly yours,

James J. Zach
Vice President
Nuclear Power

Enclosure

Copies to NRC Regional Administrator, Region III
NRC Resident Inspector

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630) 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) **Point Beach Nuclear Plant, Unit 2** DOCKET NUMBER (2) **0500031011** PAGE (3) **1 OF 05**

TITLE (4) **Both Safety Injection Pump Breakers Racked in with RC Temperature Less than 275°F**

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
11	09	91	91	005	0	12	06	91	
									DOCKET NUMBER(S): 050000
									050000

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

OPERATING MODE (9) N	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
POWER LEVEL (10) 0	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
	<input type="checkbox"/> 20.406(a)(1)(vi)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: **Norm L. Hoefert, Manager - Operations** TELEPHONE NUMBER: **414 755-2321**

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)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

ABSTRACT

On November 11, 1991, a Reactor Coolant System (RCS) heatup was in progress for Unit 2. At approximately 1330, with the RCS at approximately 345°F and 350 psig, it was discovered that both high head safety injection (SI) pump breakers were racked in, making both SI pumps operable. It was determined that this condition existed since November 9, 1991, when the RCS was closed with RCS cold leg temperature $\geq 275^\circ\text{F}$. Having both SI pumps operable under this condition is a violation of Technical Specification Section 15.3.15.B.1. Technical Specification 15.3.15.B.1 requires that one SI pump be rendered inoperable by removing (racking out) its supply breaker or by shutting its discharge valve and removing control power any time the RCS is not open to atmosphere and temperature in either or both RCS cold legs is $\leq 275^\circ\text{F}$. RCS temperature had been less than 275°F until approximately 1145 on November 11, 1991 during the plant heatup.

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TEXT IF MORE SPACE IS REQUIRED USE ADDRESSING NRC Form 200A (11)

EVENT DESCRIPTION

On September 28, 1991, Point Beach Nuclear Plant Unit 2 was shut down for its annual maintenance and refueling outage. During the performance of Step 4.8.4 in Operating Procedure OP-3C, "Hot Shutdown To Cold Shutdown," the supply breaker for the Unit 2 "A" safety injection pump was racked out and red tagged. This was done in order to meet the requirements of Technical Specification 15.3.15.B.1 which requires that one SI pump be rendered inoperable when the RCS is not open to atmosphere and RCS cold leg temperature is $\leq 275^{\circ}\text{F}$. An SI pump can be rendered inoperable by verifying that its motor circuit breaker has been removed from its electrical power supply circuit or by verifying that the pump's associated discharge valve is shut with power removed from its operator.

On November 2, 1991, with the RCS depressurized and drained, Operations Refueling Test ORT-3, "Safety Injection Actuation With Loss Of Engineered Safeguards AC," was being performed. A portion of this test demonstrates SI sequencing and diesel loading during a loss of engineered safeguards AC power. In order to perform this test, the red tag was cleared from the "A" safety injection pump breaker, allowing it to be placed in the "test" position. The supply breaker for the "B" safety injection pump was also placed in the "test" position for this ORT. Upon the successful completion of the test, the supply breaker for the "A" SI pump was again red tagged in the racked out position to allow for planned safety injection system corrective maintenance. The supply breaker for the "B" SI pump was racked in after the test's completion. Additionally, both pumps' control switches were placed in pullout in the control room. Having a control switch in pullout removes the associated pump's automatic start feature as well as indication of breaker position.

Subsequent to the test, corrective maintenance was performed on valve SI-829A, the SI pump discharge cross-connect valve. This maintenance was completed, but the associated tagout remained active until 1438 on November 9, 1991.

The tagout was cleared during performance of Operating Procedure OP-1A, "Cold Shutdown to Low Power Operation." Section 4.6 of OP-1A, "RCS Heatup to <225 Degrees" was being performed in order to meet the required plant conditions for Wisconsin Michigan Test Procedure WMTF 11.19, "Steam Generator Cravice Cleaning." The first three steps of Section 4.6 require the alignment of the "A" train of high head safety injection and the test running of the "A" SI pump. It was at this point that the "A" SI pump was racked in, resulting in the violation of Technical Specification 15.3.15.B.1.

This condition was discovered at approximately 1330 on November 11, 1991 when an operator found the "A" SI pump breaker racked in. This operator had been directed to rack in the "A" SI pump breaker to support the primary plant heatup that was being performed. Since he found the breaker already racked in, he immediately realized that a problem

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TEXT IF more space is required, use additional NRC Form 2064's (17)

existed. Both SI pump control switches were in pullout during this period of time. When this problem was discovered, RCS temperature was at approximately 345°F. RCS temperature remained below 275°F during the heatup until approximately 1145 on November 11, 1991. The condition with the breakers on both pumps racked in existed for about 45 hours.

SYSTEM DESCRIPTION

High head safety injection consists of two pumps, boric acid storage tanks containing a highly concentrated boric acid solution, remotely controlled motor-operated valves, and associated piping. There are two independent trains of high head safety injection, one from each pump. Each train supplies flow to both primary loops.

Technical Specification Section 15.3.15, "Overpressure Mitigating System Operations," requires that one pump be rendered inoperable any time the temperature in any one or both RCS cold legs is $\leq 275^\circ\text{F}$ and the RCS is not open to atmosphere. This requirement is based on the fact that the Power Operated Relief Valve (PORV) setpoint in the overpressure mode is based on relieving an overpressure condition resulting from one SI pump discharging to the RCS while the system is solid but may not be adequate for both pumps.

A pump can be rendered inoperable by tagging it out electrically or by shutting the pump's associated discharge valve and removing power from the valve's operator. When a pump is tagged out, the pump motor power supply breaker is placed in the racked out position and the breaker control switch on the control board is placed in pullout. When a breaker is racked out or the control switch placed in pullout, all breaker indication is lost on the control board. Additionally, when the control switch is in pullout, the SI pump's automatic start feature is removed.

CAUSE AND CORRECTIVE ACTION

Following the discovery of this event, a thorough review was conducted. The main causes of this event were determined to be a procedural inadequacy combined with a cognitive error by the operator who cleared the tagout. The procedure in use at the time of the event, Operating Procedure OP-1A, "Cold Shutdown to Low Power Operation," has a note in the precautions and limitations section discussing the Technical Specification requirements, but there is no note or caution in the portion of the procedure where the "A" train of high head safety injection is being aligned. As a result, during the heat-up for preparation for the steam generator high temperature crevice flush, the operator cleared the red tag from the "A" SI pump breaker. He then racked in the breaker as required by the first three steps of OP-1A, Section 4.6. This resulted in both SI pump breakers being operable in violation of the Technical Specifications.

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A review of the other procedure in use at the time of the event was also performed. WMTP 11.19, "Steam Generator Crevice Cleaning," appears adequate in that one of the initial conditions required to perform this procedure is the completion of Checklist CL-1D, "Heatup" Section 2.0. Step 2.19 of this section satisfactorily discusses the Technical Specification requirement. This checklist was completed successfully prior to the racking in of the "A" SI pump breaker. It therefore could not have prevented this event from occurring.

Discussions with Operations personnel revealed that it has been standard practice, when positioning an SI pump breaker, to verify the position of the other SI pump breaker. Since this is the first occurrence of an event of this type, this practice has been successful in the past. In fact, the operator repositioning the "A" SI pump breaker during this event did verify the position of the "B" SI pump breaker, but he failed to perceive the racked-in position of the "B" pump breaker as a problem. The operator, when informed of the Technical Specification requirement, commented that he knew of the requirement but that it had not occurred to him when he was clearing the tagout and repositioning the "A" SI pump breaker.

To prevent this event from occurring again in the future, corrective measures will be performed. Immediately following the review of the event, the operator who racked in the "A" SI pump breaker was informed of his error. The Technical Specification requirements concerning SI pump operability at low RCS temperatures were also discussed with him.

A review of available training was performed and it was determined that this topic is covered in sufficient depth in the operator's Technical Specification training. Therefore, no additional formal training is being proposed. However, this Licensee Event Report will be placed into the required reading binder in the control room to ensure that it gets reviewed by the operators to reinforce the lessons learned from this event.

Additionally, since a procedural inadequacy in OP-1A was one of the causes of this event, a procedural review to determine the adequacy of all the procedures concerning SI pump operability and the requirements in the Technical Specifications will be performed. The inadequacy in OP-1A and any other procedural inadequacies found will be corrected by March 27, 1992.

Finally, operator aids will be installed in the vicinity of the four SI pump breakers (two per unit). These aids will serve to remind the operators of the Technical Specification requirements concerning the SI pumps. These aids will be installed by March 27, 1992. This will ensure that all corrective measures are in place prior to the upcoming Unit 2 refueling outage in April 1992.

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SAFETY ASSESSMENT

Limitations on SI pump operability are imposed under specific operating conditions where the potential for a cold overpressure event exists. This minimizes the possibility of reactor coolant system failure and subsequent fuel damage. During the time that both SI pumps were operable, the SI pump control switches on the control boards were in the pullout position and the SI pump discharge motor-operated valves were shut thereby minimizing the potential for an inadvertent start of an SI pump and subsequent discharge to the RCS. In order to end up in a condition with both SI pumps discharging to the RCS, the operator would have to place both control switches in manual, start both pumps, and then open both SI pump discharge valves. This would require four distinct switch manipulations. There is also no normal plant condition that would require these actions to be taken. The health and safety of the public and of plant personnel were not endangered.

REPORTABILITY

This event is being reported in accordance with the requirements in 10 CFR 50.73 (a)(2)(i), "Any operation or condition prohibited by the plant's Technical Specifications." An NRC notification in accordance with 10 CFR 50.72 was not required in response to this event. The NRC Resident Inspector was informed.

SIMILAR OCCURRENCES

A thorough review of previous Licensee Event Reports was conducted. There have been no other instances of these pumps or others being operable in violation of limitations imposed by the Technical Specifications.