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VPNPD-92-317  
NRC-92- 112

September 28, 1992

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

Gentlemen:

DOCKET 50-301  
LICENSEE EVENT REPORT 92-002-00  
RADIOACTIVE WASTE DISPOSAL SYSTEM COMPONENT COOLING WATER  
ISOLATION VALVES OUTSIDE DESIGN BASIS  
POINT BEACH NUCLEAR PLANT, UNIT 2

Enclosed is Licensee Event Report 92-002-00 for Point Beach Nuclear Plant, Unit 2. This report is provided in accordance with 10 CFR 50.73(a)(2)(ii)(B), "The licensee shall report...any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant."

This report summarizes the discovery of component cooling water (CCW) system isolation valves LW-63 and LW-64 in a condition outside of the plant's design basis. Valves LW-63 and LW-64 were discovered to be capable of providing the appropriate interface between the Seismic Class I and Seismic Class III portions of the CCW system, as specified in Appendix A, "Seismic Design for Structures and Equipment," of the Point Beach Nuclear Plant Final Safety Analysis Report (FSAR).

Please contact us if any further information is required.

Sincerely,

Bob Link  
Vice President  
Nuclear Power

Copy to: MRC Resident Inspector  
NRC Regional Administrator

Enclosure

9210060359 920928  
PLR ADOCK 05000301  
S PDR

*IFOR*  
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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-830), 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): 0 5 0 0 0 3 0 1 1 OF 16 PAGE (3): 1 OF 16

TITLE (4): Radioactive Waste Disposal System Component Cooling Water Isolation Valves Outside Design Basis

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)												
0	8	2	8	9	2	9	2	0	0	2	0	0	0	9	2	8	9	2	0	5	0	0	0

OPERATING MODE (9): N

POWER LEVEL (10): 1 0 0

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

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(a)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)	<input type="checkbox"/> 50.38(a)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.38(a)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	<input type="checkbox"/> OTHER (Specify in Abstract below and in Text NRC Form 306A)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)	
<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)(B)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: Art Reimer, Manager - Nuclear Engineering Projects TELEPHONE NUMBER: 4 1 4 2 1 1 - 3 9 5 7

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

SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (if not, 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)

On August 28, 1992, while preparing the final design for a Unit 2 plant modification, plant personnel discovered that component cooling water (CCW) system isolation valves LW-63 and LW-64 were not capable of performing their intended function. Valves LW-63 and LW-64 were added to the third 10-year interval of the PBNP Inservice Test (IST) Program, which went into effect on December 21, 1990, as providing an isolation boundary between the Seismic Class I and Seismic Class III sections of the CCW system. Discussions with the valve manufacturer revealed that the expected valve through-leakage would exceed acceptable levels. A 48-hour Limiting Condition for Operation (LCO) was entered. The CCW system boundary outside containment was subsequently reestablished by shutting, and verifying shut, Seismic Class I valves CC-826 and CC-893. Valves CC-826 and CC-893 were utilized in the CCW piping to the radioactive waste disposal system to establish the appropriate CCW system boundary. The LCO was exited when valves CC-826 and CC-893 were verified closed. Valves LW-63 and LW-64 will be replaced and modifications made to return the CCW system to its design basis as defined in the Point Beach Final Safety Analysis Report (FSAR).

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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 (F-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) Point Beach Nuclear Plant, Unit 2	DOCKET NUMBER (2) 05000301	LER NUMBER (6)			PAGE (3)	
		YEAR 92	SEQUENTIAL NUMBER 002	REVISION NUMBER 00	12	OF 16

TEXT, if more space is required, use additional NRC Form 386A (11/77)

EVENT AND EQUIPMENT DESCRIPTION

On August 28, 1992, while preparing the final design for Unit 2 plant modification MR 91-111, plant personnel discovered that component cooling water (CCW) system valves LW-63 and LW-64 were not capable of performing their intended isolation function. Modification MR 91-111 was being developed to install components to allow leak testing of these valves in accordance with the ASME Section XI Code.

Point Beach Nuclear Plant Final Safety Analysis Report (FSAR) Appendix A, "Seismic Design For Structures and Equipment," classifies the component cooling water (CCW) system as Seismic Class I. The Unit 2 CCW system provides cooling water to the radioactive waste disposal system which services both Units. The radioactive waste disposal system portion of the CCW system was designed and built to Seismic Class III standards. Point Beach FSAR Appendix A requires that the interface between a Seismic Class I system and a lower class system be a normally closed valve or a valve which is capable of remote operation from the control room. Contrary to these requirements, air-operated butterfly valves LW-63 and LW-64, which are provided to isolate CCW from the radioactive waste disposal system, were discovered to not satisfy the specified leakage criteria and are not capable of remote operation from the control room. Hence, the valves do not provide the appropriate interface in accordance with design basis requirements specified in the FSAR Appendix A.

A 48-hour LCO was entered at 1200 on August 28, 1992, in accordance with PBNP Technical Specification 15.4.4.III.B. This Specification applies to Type C testing of containment isolation valves. This LCO does not specifically address valves LW-63 and LW-64, however, Technical Specification Section 15.4.4 provides guidance for corrective action for conditions which degrade containment integrity due to containment isolation valve leakage. This specification was applied to the discovered condition because valves LW-63 and LW-64 are intended to maintain a closed system which provides a secondary containment boundary.

In response to the LCO, the CCW boundary outside containment was reestablished by shutting and verifying shut CCW valves CC-826 and CC-893. Verification that the valves were shut was achieved by performing radiography on these valves. Valves CC-826 and CC-893 are Seismic Class I manual valves which isolate CCW from the radioactive waste disposal system. Shutting valves CC-826 and CC-893 and verifying closure restored the CCW system to a condition which meets the FSAR Appendix A design criteria. The LCO was exited at 1200 on August 29, 1992.

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TEXT CONTINUATION

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 (F-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.

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

CAUSE

Investigation into the cause of this event revealed that the radioactive waste disposal system portion of the component cooling water system was installed under a vendor specification. This specification required seismic installation of the CCW piping from the existing system tie-in point (Unit 2 only) to valves LW-63 and LW-64. Beyond these valves, the system was installed to meet the requirements of ANSI B31.1 without consideration for seismic loading.

In a review of the specification for the installation of the radioactive waste disposal system and vendor correspondence, we could not clearly determine what level of isolation the valves were intended to serve. However, it is evident that valves LW-63 and LW-64 were designed for local operation only. An automatic trip function was not included in the design nor was operation from the control room intended.

The radioactive waste disposal system was installed between 1970 and 1973. At that time the PBNP plant modification process and 10 CFR 50.59 Safety Evaluation process was not as extensive as it is presently. Therefore, the limited controls established at that time may have contributed to an inadequate design review.

CORRECTIVE ACTIONS

A. Immediate

In response to this event, the following immediate actions were taken:

1. A 48-hour LCO was entered in accordance with Technical Specification 15.4.4.III.B.  
A dedicated operator was stationed at the C-59 control panel next to the control switches for valves LW-63 and LW-64. The operator's responsibility was, at the direction of the control room operators, to shut valves LW-63 and LW-64 to limit potential system leakage, then to shut valves CC-826 and CC-893. By shutting valves LW-63 and LW-64, additional time is obtained to isolate the radioactive waste disposal system prior to a complete loss of CCW inventory.
3. The component cooling water system boundary outside containment was reestablished by shutting and performing radiography to verify that valves CC-826 and CC-893 were fully shut. Shutting valves CC-826 and CC-893 restored

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

the CCW system to the FSAR Appendix A design criteria. The LCO was exited and the need for the dedicated operator was eliminated when these valves were verified shut.

B. Short Term

The radioactive waste disposal system is normally in continuous operation and is removed from service only for maintenance. Until valves LW-63 and LW-64 are modified to conform to design basis requirements, interim measures are necessary to allow the operation of the radioactive waste disposal system. Justification for Continued Operation (JCO) was necessary to prevent increased radiation exposure to personnel through radioactive gas buildup and liquid waste buildup that would occur if the system would be required to be secured. Shutting valves CC-826 and CC-893 required the removal of the radioactive waste disposal system from service. Therefore, a JCO was approved on September 11, 1992, to allow the opening of valves CC-826 and CC-893 when necessary to process liquid and gaseous radioactive wastes. Operations Special Order PBNP 92-06, "Operation of Component Cooling Water to the Letdown Gas Strippers and Blowdown Evaporator Bottoms Loop," has been approved and defines the requirements established by the JCO. Valves CC-826 and CC-893 may be opened for purposes of returning the radioactive waste disposal system to service under the following conditions:

1. During the periods that valves CC-826 and CC-893 are open to process liquid and gaseous radioactive wastes and Unit 2 containment integrity is required, a dedicated operator in the control room will be assigned to isolate CCW to the Unit 2 containment on a valid containment isolation signal and indication of an uncontrollable loss of CCW inventory. During this time the LCO will not be entered because the intent of the FSAR design requirements will be met and the valves utilized to isolate CCW to the Unit 2 containment are designed and tested to meet containment isolation valve requirements.
2. Additionally, an operator will be assigned to shut, at the direction of the control room, valves LW-63, LW-64, CC-826 and CC-893. Shutting these valves will reestablish the CCW system boundary outside containment, consistent with the FSAR design requirements for the system, and facilitate returning the system to service. This operator will be in direct communications with the control room.
3. Restrictions have been stipulated to prevent taking the CCW surge tank level indication out of service when the non-seismic portion of the CCW system is placed in

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service and containment integrity is required. This will ensure the control operator has the necessary indication to prevent an unnecessary isolation of CCW to the Unit 2 containment in a situation outside of that previously considered--a design basis accident coincident with a seismic event causing a loss of CCW inventory.

## C. Long Term:

- Valves LW-63 and LW-64 will be replaced with new leak-tight valves with control room remote operation capability and valve position indication. In addition, a containment isolation signal coupled with a CCW radiation monitor signal will be provided for closure of valves LW-63 and LW-64 and provide isolation of the non-seismically-qualified radioactive waste disposal system portion of the CCW system. Valves LW-63 and LW-64 will be replaced during our current Unit 2 refueling outage scheduled from September 26, 1992, to November 13, 1992. The control room remote operation capability, containment isolation signal, and CCW radiation monitor signal implementation will be completed no later than December 31, 1992.

REPORTABILITY

This event is being reported under the requirements of 10 CFR 50.73(a)(2)(ii)(B), "The licensee shall report...any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant."

SAFETY ASSESSMENT

Due to the design of safety-related equipment, a seismic event up to and including the level of a safe shutdown earthquake (SSE) is not considered an initiating event for any design basis accident (DBA) analyzed in PBNP FSAR Chapter 14, "Safety Analysis," which could result in a radiological release to the environment. A failure of the Seismic Class III portion of the CCW system is postulated during a seismic event, resulting in a loss of integrity of the CCW system outside containment. Because the CCW system inside containment and those systems inside containment with which CCW interfaces are Seismic Class I (except for the excess letdown heat exchanger, which is seismic class II), integrity of this portion of the CCW system is expected to be maintained. Therefore, a potential containment release path for radioactivity would not be created. Consequently, a radiological release to the atmosphere outside containment through the postulated breach in the CCW system will not occur. The CCW piping and components outside containment

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REGULATORY COMMISSION WASHINGTON, DC 20555 AND TO  
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OF MANAGEMENT AND BUDGET WASHINGTON, DC 20503

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serve as the secondary containment boundary. Component cooling water supply and return lines to the reactor coolant pumps and the excess letdown heat exchanger are equipped with the appropriate containment isolation valves for a system normally in service following a DBA. These valves remain operable and meet the PBNP design basis for the class of containment penetration as defined in the FSAR.

The loss of CCW will be compensated for by implementation of AOP-9B, "Loss of Component Cooling." This procedure provides guidance for diagnosing the loss of CCW and restoration of cooling. Component cooling water is not required to place the units in a hot shutdown condition. Following a seismic event, the loss of the CCW system will not prevent placing and maintaining the units in a safe hot shutdown condition and therefore have minimal effect on safety.

GENERIC IMPLICATIONS

No generic implications were identified.

SIMILAR OCCURRENCES

On August 18, 1992, the Unit 1 reactor protection system, engineered safeguards system, and associated process instrumentation were declared inoperable when a seismic review of the auxiliary feedwater system revealed that the Unit 1 control room instrumentation cabinets did not meet their original seismic design criteria as specified in the PBNP FSAR. This event was reported in LER 266/92-007-00 on September 15, 1992.