

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY
WITH THIS INFORMATION COLLECTION REQUEST:
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REGARDING BURDEN ESTIMATE TO THE
INFORMATION AND RECORDS MANAGEMENT
BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY
COMMISSION, WASHINGTON, DC 20555-0001, AND
TO THE PAPERWORK REDUCTION PROJECT

FACILITY NAME (1) Point Beach Nuclear Plant, Unit 2										DOCKET NUMBER (2) 05000301		PAGE (3) 1 OF 5	
TITLE (4) Reactor Coolant Pump Component Cooling Water Return Line Check Valve Seriously Degraded													
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 NAME		DOCKET NUMBER		
03	13	98	1998	-- 002 --	00	04	13	98	FACILITY NAME		DOCKET NUMBER		
OPERATING MODE (9)		N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more) (11)									
POWER LEVEL (10)		100		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)			
				20.2203(a)(1)		20.2203(a)(3)(ii)		X 50.73(a)(2)(iii)		50.73(a)(2)(x)			
				20.2203(a)(2)(ii)		20.2203(a)(3)(iii)		50.73(a)(2)(iii)		73.71			
				20.2203(a)(2)(iii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER			
				20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A			
				20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)					
LICENSEE CONTACT FOR THIS LER (12)													
NAME James E. Knorr, Regulation and Compliance Manager										TELEPHONE NUMBER (Include Area Code) (920) 755-6863			
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)													
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX			
X	CC	V	V085										
SUPPLEMENTAL REPORT EXPECTED (14)													
YES (If yes, complete EXPECTED SUBMISSION DATE).						X NO		EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16) On March 13, 1998, with Unit 2 at cold shutdown a reactor coolant pump (RCP) component cooling water (CCW) return line check valve (2CC-745) was found in a condition which could have prevented its closing. The check valve was identified as degraded and in need of repair during a radiograph as part of our inservice testing program. The condition of the valve would have prevented its closure as expected during a break of a RCP CCW line inside containment. The valve was opened, repaired and returned to service. The valve was found with some internal degradation. The CCW system was considered inoperable due to 2CC-745 being found with degradation that had the potential to allow the loss of CCW fluid to the containment given a single active failure in the CCW system along with the assumed pipe failure inside containment. The plant had already been placed in cold shutdown condition on March 5, 1998 due to the potential for the CCW system to be inoperable. After a review of the design and capabilities of the CCW system and repair of 2CC-745, the system was declared operable.													

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Event Description:

At 1325 hours CST on March 5, 1998, with Unit 2 at 100% reactor power, The component cooling water (CCW) system [CC:] was declared inoperable. Point Beach Nuclear Plant Technical Specification (TS) 15.3.3.C.1.c states that, "all valves, interlocks and piping associated with the above components (CCW pumps and heat exchangers) and required for the functioning of the system during accident condition, are operable."

The CCW system was declared inoperable because of a concern about the ability of the CCW system to survive a leak in containment caused by the severance of the CCW piping in the reactor coolant pump (RCP) [AB:P] cubicle as consequential damage from a loss of coolant accident (LOCA). Since the Technical Specifications do not provide an action statement for inoperability of the system, TS 15.3.0 was applied and Unit 2 was shut down.

2CC-745 (CCW reactor coolant pump return valve) [CC:V] was examined on March 13, using radiography to determine the physical position of the valve. This test was performed in accordance with the PBNP inservice testing program recently revised to include these valves. The valve was found degraded such that its capability to prevent CCW inventory loss post CCW break inside containment was compromised.

The description of the CCW system and its expected operation and function post-accident was discussed in detail in an operability determination that was completed on March 21, 1998.

Emergency Operating Procedures and Abnormal Operating Procedures were reviewed and revised to ensure the expeditious isolation of the CCW system from containment and recovery of the system outside containment if CCW inventory had been lost.

The valve (2CC-745) was repaired and Unit 2 was subsequently restarted.

System and Component Description:

The portion of CCW that is affected by the condition that is the subject of this LER is the CCW return line from the RCPs outside the containment building.

The 2CC-745 is a swing check valve located on the RCP CCW return line outside containment. The valve is located such that if there is a failure of one of the remote motor operated valves (2CC-759A\B) to close, 2CC-745 will prevent the loss of CCW inventory from the main CCW system into containment.

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The portion of the system that is outside containment is considered a closed system. The closed nature of the system is credited as one of the barriers for containment integrity. This portion of the system also contains the remote manual isolation valves on the inlet and outlet of the CCW supply to the RCPs which can be used to isolate a break of the system inside containment. These isolation valves are backed up by either a separate remote isolation valve with an independent power supply or a check valve (2CC-745) to prevent the draining of the CCW system into a CCW break and thus into the containment sump. At the time of discovery of the degraded 2CC-745, the remote isolation valves were operable.

Cause:

The failure of 2CC-745 was in all likelihood due to service related wear. The valve had not been a part of a testing program in the past. It was recently added to the inservice testing program and the check valve testing program. The degradation found in the valve was as follows:

The top of the valve disc was found lodged under the top of the seat ring. The valve was disassembled to determine the cause of this condition. The lever and disc assembly moved freely from the open to closed position with no indication of binding or rubbing on the valve body. Excess clearance was found between the disc stud and the lever arm. This clearance allowed the disc to move in such a way as to close with the top of the disc lodging under the top of the seat ring. The disc location would have allowed return flow from the CCW system to a potential break location inside containment.

The valve was returned to service with the following new parts installed; disc, lever arm, hinge pin, hinge pin bushings, hinge pin plugs and gaskets, disc stud nut and washer, body to bonnet studs and nuts, and bonnet gasket.

The March 5 shutdown of the plant was completed due to declaring the CCW system inoperable. The 2CC-745 check valve was subsequently found degraded which would also have had an effect on the operability of the CCW system. The design and description of the CCW system and its expected operation and function post accident was documented and the conclusion reached that the system was operable but degraded on March 21, 1998 pending completion of repair to the 2CC-745 valve.

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Corrective Actions:

1. An operability determination for the CCW system was documented on March 21, 1998.
2. Emergency Operating Procedures (EOP-0, "Reactor Trip or Safety Injection" and Series Foldout Page, EOP-1, "Loss of Reactor or Secondary Coolant") and Abnormal Operating Procedures (AOP 9B Units 1 and 2, "Component Cooling System Malfunction") were revised to provide direction for the isolation of a failed CCW system inside containment and recovery of the system outside containment.
3. 2CC-745 was repaired as described above.
4. The equivalent valve on Unit 1 (1CC-745) was inspected using radiography and with no flow in the system was found to be closed.

Reportability:

A four-hour non-emergency report was made on March 13, 1998 at approximately 2041 CST. This report was made in accordance with 10 CFR 50.72(b)(2)(i), "Any event, found while the reactor is shut down, that, had it been found while the reactor was in operation, would have resulted in the nuclear power plant, including its principal safety barriers, being seriously degraded..." This call documented the 2CC-745 valve degradation.

The NRC resident inspectors were notified.

Safety Assessment:

The 2CC-745 valve condition would have required dependence on remote operated motor operated valves for isolation of the "A" and "B" RCP CCW return lines in the postulated event of the break of an RCP CCW line inside containment. These motor operated valves were operable at the time of discovery of the condition of 2CC-745.

Procedures were in place to isolate the RCP CCW lines if a break had occurred to the lines inside containment. These procedures have since been further enhanced. Therefore, the health and safety of the public and plant personnel were not compromised as a result of the damaged 2CC-745 valve in the component cooling water system.

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Similar Occurrences:

The following reports also identify recent events involving the CCW system:

<u>LER</u>	<u>Description</u>
266/97-013-01	Component Cooling Water System not in Accordance With Plant Design Basis
301/97-004-00	RHR Loop Inoperable Due To CCW Leakage
301/96-002-00	RHR Loop Inoperable Due to CCW Leakage

System and Component Identifiers

The Energy Industry Identification System component function identifier for each component/system referred to in this report are included in the above text as follows: [System Code:EIIS Component Identifier].