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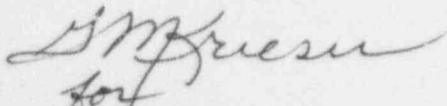
Gentlemen:

DOCKET 50-301
LICENSEE EVENT REPORT 96-002-00
RHR LOOP INOPERABLE DUE TO CCW LEAKAGE
POINT BEACH NUCLEAR PLANT, UNIT 2

Enclosed is Licensee Event Report 96-002-00 for Point Beach Nuclear Plant, Unit 2. This report is provided in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications." This report describes an event where only one of the required two residual heat removal (RHR) loops was operable due to a breach in the component cooling water (CCW) system outside containment.

Please contact us if you require additional information.

Sincerely,


Bob Link
Vice President
Nuclear Power

Enclosure

130090

DAW

cc: NRC Resident Inspector
NRC Regional Administrator

9611130377 961108
PDR ADOCK 05000301
S PDR

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH
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PROJECT

FACILITY NAME (1)

Point Beach Nuclear Plant, Unit 2

DOCKET NUMBER (2)

05000301

PAGE (3)

1 OF 4

TITLE (4)

RHR Loop Inoperable Due To CCW Leakage

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
10	09	96	96	- 002	- 00	11	08	96	FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
			20.2201(b)			20.2203(a)(2)(v)		X	50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER LEVEL (10)		0	20.2203(a)(1)			20.2203(a)(3)(i)			50.73(a)(2)(ii)	50.73(a)(2)(ix)
			20.2203(a)(2)(i)			20.2203(a)(3)(ii)			50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			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
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)	or in NRC Form 366A

LICENSEE CONTACT FOR THIS LER (12)

NAME

David A. Weaver

TELEPHONE NUMBER (Include Area Code)

(414) 221-3418

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

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)

At 0553 on October 10, 1996, while Point Beach Nuclear Plant, Unit 2, was in a refueling shutdown with reactor coolant system temperature at 94°F, a component cooling water (CCW) leak was identified on the Unit 2 CCW piping for residual heat removal (RHR) heat exchanger 2HX-11B. Plant operators isolated CCW to 2HX-11B, and at 0649 declared the associated RHR loop inoperable. The decision to place the plant in this configuration resulted in a violation of Technical Specification 15.3.1.A.3.b which requires both RHR loops to be operable when RCS temperature is less than 140°F. The piping was subsequently repaired and the RHR loop was declared operable at 0651 on October 11, 1996.

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

Event Description:

At 0220 on October 9, 1996, with Unit 2 in cold shutdown for its Fall 1996 refueling outage, plant operators noted a decreasing trend of approximately 4 gallons per hour in the Unit 2 component cooling water (CCW) surge tank level. Plant operators subsequently entered Abnormal Operating Procedure (AOP) 9B, "Component Cooling System Malfunction, Unit 2." Procedure AOP-12A, "Oil, Hazardous Material, and Radioactive Materials Spill," was also entered due to the suspected discharge of chromated CCW water. At 1221, CCW heat exchanger 2HX-12D was isolated in accordance with troubleshooting steps in AOP-9B, and the CCW surge tank level stabilized, which indicated to the operators that the leak had been isolated. However, at 2020, a surge tank level decrease of approximately 7 gallons per hour was again noted by plant operators, and AOP-9B was entered for a second time. It was later suspected that the initial leak stabilized due to flow, temperature, and pressure changes resulting from a change in the plant line-up. After a more thorough inspection was conducted in the field, the CCW leak was discovered beneath the decking in pipeway #3 at approximately 0553 on October 10, 1996. Further inspection revealed the source to be a crack in the heat affected zone of a weld on the 1-inch inlet piping to relief valve 2CC-736B located off the CCW return from residual heat removal (RHR) heat exchanger 2HX-11B. This section of piping was experiencing vibrations at the time of discovery. The Unit 2 RHR system was subsequently aligned for single loop operation and CCW isolated to RHR heat exchanger 2HX-11B, which stopped the leak. Heat exchanger 2HX-11B was declared inoperable, resulting in one RHR cooling loop being inoperable.

Because reactor coolant system temperature was less than 140°F, two RHR loops were required to be operable in accordance with Technical Specification 15.3.1.A.3.b. In addition, the CCW system is classified as a closed system outside containment. With the leak occurring outside containment, this degraded condition would normally have violated the CCW system's design basis. However, the CCW system was not required to be a closed system at the time of the breach because RCS temperature was less than 200°F and containment integrity was not required.

Since the plant was already in cold shutdown, no further Technical Specifications actions were necessary. Single loop decay heat removal capability had been verified prior to aligning the plant for single RHR loop operation. In addition, no plant operations were performed that either increased the RHR heat load or caused a decrease in RCS boron concentration. It was determined that the outage work could continue forward to reactor vessel head removal, which would require only one RHR

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loop to be operable with the refueling cavity flooded as allowed in Technical Specification 15.3.1.A.3.b.(3).

The piping was repaired and RHR heat exchanger 2HX-11B was declared operable at 0651 on October 11, 1996.

Component and System Description:

The component cooling water (CCW) system serves as an intermediate system between the reactor coolant and service water system during cooldown. The CCW loop transfers heat from the reactor coolant, via the residual heat removal (RHR) heat exchangers, to the service water system. This double barrier arrangement reduces the potential for leakage of radioactive reactor coolant to the service water system. The component cooling water system is classified as a "closed system outside containment."

Cause:

The failed pipe section was analyzed by an off-site laboratory to determine the cause of the piping failure. Initial on-site visual examinations indicated that the piping failed via mechanical fatigue due to the piping vibrations identified at the time of discovery. However, subsequent walkdowns of the repaired and similar piping revealed no vibration. Hence, this suggests that specific plant line-ups, combined with the small pipe size and inherent pipe flexibility, may cause the piping vibrations to occur.

The off-site laboratory reported that the pipe failure resulted from low load/high cycle fatigue. No material or weld defects were discovered.

Corrective Actions:

After the leak was isolated, plant personnel reported to the scene to diagnose the cause of the cracked piping to relief valve 2CC-736B and to determine corrective actions. At that time the pipe was vibrating with approximately 1/4 inch total relative displacement. The failed piping was repaired. On October 15, 1996, when the other CCW relief valve lines were being inspected, no vibrations were observed on the repaired piping. However, as a preventive measure, supports will be installed on the piping for valves 1&2CC-736B by February 28, 1997.

The remaining relief valve lines in the CCW system were reviewed for similar vibration-related concerns. Nineteen areas of concern were identified. The 18 areas located outside containment were walked down and two of these, the piping for relief valves 1&2CC-736B, were identified as requiring additional supports to prevent vibrations. In

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addition, the piping associated with valve 1CC-776D was also identified as needing additional support. Radiographic testing (RT) will be performed on the piping to valves 1&2CC-736A&B and valve 2CC-768 by November 18, 1996, to assess the integrity of the piping at the associated welds. The piping for relief valve 2CC-768, located inside containment, will be observed for flow-induced vibrations when CCW is lined up with flow through this section of piping. This will occur prior to the end of the present Unit 2 refueling outage which is currently scheduled to conclude on December 25, 1996. Repairs will be performed as necessary pending the results of the radiographic tests and inspections.

Reportability:

This event is being reported in accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications."

Safety Assessment:

Two RHR pumps and two heat exchangers are utilized to remove residual and sensible heat during plant cooldown. If one of the pumps and/or one of the heat exchangers is inoperable, safe operation of the plant is not affected; however, the time for cooldown is extended. In this case, both active components (RHR pumps) and one passive component (RHR heat exchanger) remained operable. The likelihood of rendering the remaining RHR heat exchanger inoperable and causing the loss of the remaining operable RHR loop was extremely low. Therefore, the health and safety of plant personnel and the public were not impacted by this event.

Similar Occurrences:

No previous similar reportable events have been identified at Point Beach Nuclear Plant.