Wisconsin Electric
POWER COMPANY

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

NPL 97-0266

May 14, 1997

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

Gentlemen:

DOCKET 50-301
LICENSEE EVENT REPORT 97-002-00
POTENTIAL REACTOR COOLANT SYSTEM
BRANCH CONNECTION STRESSES BEYOND DESIGN BASIS
POINT BEACH NUCLEAR PLANT, UNIT 2

Enclosed is Licensee Event Report 97-002-00 for Point Beach Nuclear Plant, Unit 2. This report is provided in accordance with 10 CFR 50.73(a)(2)(ii)(B), "a condition that was outside the design basis of the plant." This report describes a Unit 2 condition in which the existing orientation of the "B" reactor coolant loop resistance temperature detector (RTD) piping branch connection could cause piping stresses outside of FSAR design basis limits.

If you require additional information, please contact us.

Sincerely,

Thomas G Malanowski

for Douglas F. Johnson
Manager ,
Regulatory Services and Licensing

kmc

Enclosure

cc: NRC Resident Inspector, NRC Regional Administrator

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS 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

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Point Beach Nuclear Plant, Unit 2	05000301	1 OF 3

TITLE (4)

Potential Reactor Coolant System Branch Connection Stresses Beyond 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 NAME	DOCKET NUMBER
										05000
04	15	97	97	-- 002 --	00	05	14	97	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)							
POWER LEVEL (10)	000		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)(i)	X	50.73(a)(2)(ii)		50.73(a)(2)(x)
			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	TELEPHONE NUMBER (Include Area Code)
Glenn D. Adams, Licensing Engineer	(414) 221-4691

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 15, 1997, with Unit 1 in cold shutdown and Unit 2 in a defueled condition, pipe stress calculations indicated that the Unit 2 Reactor Coolant System (RCS) Loop "B" RTD (resistance temperature detector) branch connection to the top of the RCS hot leg piping could be stressed in excess of the design basis code allowable limits. The calculated stresses did not exceed the interim operability limits described by the licensing basis; therefore, the piping is considered operable. Evaluation of similar piping in Unit 2 Loop "A" and in Unit 1 did not identify stresses in excess of code allowables. The potential stress problem was identified during an engineering consultant's programmatic review of Point Beach safety-related tubing. This calculated stress condition may have been inherent to the original design, but should have been identified and remedied when the configuration was analyzed in 1987. Those calculations applied RCS thermal/seismic anchor movements in the wrong direction, which provided non-conservative results. Support modifications are planned to restore the stresses to within their design basis limits.

Event Description:

On April 15, 1997, pipe stress calculations indicated that the Unit 2 Reactor Coolant System (RCS) Loop "B" RTD (resistance temperature detector) branch connection to the top of the RCS hot leg piping could be stressed in excess of the design basis code allowable limits for piping as set forth in Point Beach FSAR Appendix A. The calculated stresses did not exceed the interim operability limits described by the licensing basis; therefore, the piping is considered operable.

The potential stress problem was identified during an engineering consultant's programmatic review of RCS safety-related tubing. During the review of a 1987 calculation, it was noted that the RCS piping thermal/seismic anchor movements assumed for Unit 2 loop branch line piping stresses were applied in the wrong direction. These movements provided nonconservative results. A subsequent piping stress reanalysis was conducted for the Unit 2 RTD Loop "B" bypass piping; applying the RCS piping movements in the appropriate direction. The reanalysis demonstrated that the Loop "B" stresses were calculated to exceed design limits. The Loop "A" stresses were calculated to stay within design limits.

The review of Unit 1 stress calculations concluded that the RCS piping movements were applied appropriately and that no new analysis was required for the Unit 1 RTD branch connection. Therefore, the Unit 1 RTD piping on either loop is considered code compliant.

The IEEE Standard 803A-1983 and IEEE Standard 805-1984 identifiers for this report are:

AB Reactor Coolant System (PWR)
DET Detector

Cause:

A modification (Modification Request MR 84-281) was initiated to remove the RTD bypass line isolation valves and the flanged connections on the Unit 2 Loop "B" RTD manifold piping. The piping reanalysis completed in 1987 to support this modification used thermal anchor movements estimated from other branch connections on the Unit 1 RCS and rotated them to coincide with the orientation of the Unit 2 RCS piping. With that input, the reanalysis showed an overstress condition at the top hot-leg branch connection. To relieve the calculated overstress condition at this branch connection, two supports were removed during installation of the modification.

Recent evaluation of terminal connections for the 3/8-inch RCS instrumentation tubing called into question the validity of the anchor movements that were estimated in 1987. When compared to the actual RCS movements provided by the Nuclear Steam Supply System vendor

(Westinghouse) as a part of the recent NRC Bulletin 79-14 rebaselining project, the estimated values used in the 1987 reanalysis were found to be in the wrong directions.

Corrective Actions:

1. Upon identification of the piping movement discrepancy in Unit 2, a stress analysis was conducted on the RTD bypass piping, using the correct RCS thermal/seismic anchor movements for the existing configuration. The conclusion is reported herein.

2. *Design of a plant modification has been initiated to relocate piping supports in the Unit 2 Loop "B" RTD branch line. This modification will accommodate RCS piping movement in the appropriate direction and restore the calculated stresses to a level within the design basis. This modification will be implemented prior to startup from the current Unit 2 Refueling Outage (U2R22).*

Reportability:

This Licensee Event Report is being submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(ii)(B), "a condition that was outside the design basis of the plant."

Safety Assessment:

As analyzed, the pressure boundary integrity of the RCS meets the requirements of Point Beach's operability criteria. At any time over plant life, the combination of design basis stresses to the as-built configuration of the branch lines would not have damaged the RCS pressure boundary. Therefore, this condition has not adversely affected the health and safety of the public.

Similar Occurrences:

Other design or installation flaws that resulted in calculated piping stresses in excess of the design basis limit were reported in the following LERs:

LER	Description
266/97-018-00	Potential Residual Heat Removal System Overpressure During Accident Conditions
266/97-002-00	Potential To Overpressurize Piping Between Containment Isolation Valves During A Design Basis Accident
266/96-005-00	Potential Service Water Flashing In Containment Fan Coolers