

231 W Michigan PO Box 2046 Milwaukee, WI 53201-2046

(414) 221-2345

Lev

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 & Malanowski

Douglas F. Johnson Manager, Regulatory Services and Licensing

kmc

Enclosure

cc: NRC Resident Inspector, NRC Regional Administrator

9705220451 970514 PDR ADDCK 05000301 S PDR



COMPANYARIAN	STAE OF THE REAL PROPERTY OF	i menangkan kanangkan k	litik branzanina	ni anto calendari da ini					INCOME DOCTOR	NUMBER OF STREET, ADDRESS	-					
NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION APPROVED BY OMB NO. 3150-0 (4-95) EXPIRES 04/30/98							0104									
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block) ESTIMATED BURDEN PER RESPONSE TO COMPLY WI THIS INFORMATION COLLECTION REQUEST: 50.0 HI REPORTED LESSONS LEARNED ARE INCORPORATED IN THE LICENSING PROCESS AND FED BACK TO INDUST FORWARD COMMENTS REGARDING BURDEN ESTIMA TO THE INFORMATION AND RECORDS MANAGEME BRANCH (T-6 F33), U.S. NUCLEAR REGULATO COMMISSION, WASHINGTON, DC 20555-0001, AND THE PAPERWORK PERVICENCE								COMPLY WITH EST: 50.0 HRS. RPORATED INTO & TO INDUSTRY. RDEN ESTIMATE MANAGEMENT REGULATORY 6-0001, AND TO								
FACILITY	NAME (	1)		Contraction of the second s		an a		7.008ma	CONTRACTOR OF	a a de se que de la	DOCK	ETI	NUMBER (2	n anterior anterior de la constante de la const )	1	PAGE (3)
Poin	t Bea	ach N	luc 1	ear	Plant, 1	Unit 2						0	50003	01		1 OF 3
TITLE (4)		letteri on versionene						CALIFORNIA STATE	PHIL2.02792-0258		Acoustication	and the second			tero reserie	
Poter	ntial	l Rea	cto	r Co	olant S	vstem	Brand	ch	Con	nect	ion	S	tress	es Bevo	and i	Design
Basi	s															000231
EVE	T DATE	(5)	1	LE	REPORT DATE (7)				OTHER FACILITIES INVOLVED (8)							
	T			SE	SEQUENTIAL REV			1		T	FACILITY NAME				DOCKET NUMBER	
MONTH	DAY	YEAR	YEA	R	NUMBER	NUMBER	MONT	4 0	YAC	YEAR						05000
				<u></u>	NUMBER NU						FACI	CILITY NAME			DOCKET NUMBER	
04	15	97	97		002 0		05		14	97	1 ACI				05000	
OPERA	TING	CHINAMOURLINCS	THIS	REPORT	IS SUBMITTED	PU UANT	TO THE R	EQUIP	REMEN	ITS OF 1	O CFR S	5: ((	Check one o	or more) (11)	deservices and	a de la der van de la der Valen de geraffikken maar van
MODE	(9)	N		20.2201	(b)		20.220	3(a)(2	2)(v)		1	1	50.73(a)(2	!)(i)		50.73(a)(2)(viii)
POW	ER			20.2203	3(a)(1)		20.220	3(a)(3	33763	-		v	50 73(a)(2	9460	++;	50 73(2)(2)(2)
LEVEL	(10)	000		20.2203	3(a)(2)(i)		20.220	3(a)(3	33(11)			-	50.73(a)(2	)(iii)		73.71
1000		THE REAL		20.2203	3(a)(2)(ii)		20.220	3(a)(4	1)	an contractor			50.73(a)(2	)(iv)		OTHER
$(\cdot )$		•		20.2203	3(a)(2)(iii)		50.36(0	)(1)				-	50.73(a)(2	')(v)	Specify	in Abstract below
		20			0.2203(a)(2)(iv)			50.36(c)(2)				50.73(a)(2)(vi)		or in NRC Form 366A		
and the second second	and the second second	Sand and a series	harmond			LICENSEE	CONTACT	FOR	THIS	LER (12)		marcala	Contractoritation 2 and a state	anunaan y minanakean	herenanas	ander - and a state of a state of the state
NAME												1	TELEPHON	E NUMBER (I	nciude A	krea Code)
Glen	n D.	Adam	s,	Licer	nsing Er	nginee	r						(414)	221-4	691	
			a concenter d	COMPLE	TE ONE LINE F	OR EACH C	OMPONEN	TFAL	ILURE	DESCRIB	ED IN T	THIS	REPORT (1	3)		
CAUSE	SYSTEM	и сом	PONEN	IT MAN	NUFACTURER	REPORTA TO NPRO	BLE DS	C	CAUSE	SYST	TEM	CON	PONENT	MANUFAC	TURER	REPORTABLE TO NPRDS
		+													-	
		1.		1.1						1.						
No. 10. 10 Carlos da Paris de Carlos de C		SI	UPPLE	MENTAL R	REPORT EXPECT	ED (14)	Nogeren			T	EXPE	ECTE	D	MONTH	DAY	YEAR
YES (If yes, complete EXPEC			PECTED SUBMISSION DATE)				X	N	0		SUBMISSION DATE (15)					
ABCTRAC	TT (1)	- 1400		eronan ne broats			un and a series	untenna		-			Contract according to the		l.	determine and the second second
On At	oril	15	199	7. w	ith Unit	ingle-spaced 1 in			hut	down	and	d	Unit :	2 in a	def	heled
cond	ition	i. pi	pe	stre	ss calci	ulatic	ns in	ndi	cat	ed t	hat	t	he Un	it 2 Re	acti	or
Coola	ant s	Svste	m (	RCS)	Loop "I	B" RTD	(res	is	tan	ice t	emp	er	ature	detect	or)	branch
conne	ectio	on to	th	e to	p of the	e RCS	hot !	leq	n pi	pinc	( CO	ul	d be	stresse	ed i	n
exce	ss of	E the	de	sign	basis (	code a	llowa	abl	e 1	imit	s.	T	he cal	lculate	ed s	tresses
did 1	not e	excee	d t	he in	nterim (	operab	ility	/ 1	imi	ts d	lesc	ri	bed by	y the 1	lice	nsing
basi	s; th	neref	ore	, the	e piping	g is c	onsid	ler	ed	oper	abl	е.	Eva	luation	n 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																
appl	led }	KCS t	her	mal/	seismic	anche	or mor	/em	nent	S 1r	th	e	wrong	direct	tion	, which
prov.	idea .	non-	cor	serva	to with	esuits	. Sl	qqu	ian	moc	11I1	ca	mite	are p.	Lann	ed to
Test	ore (	ane s	rice	0565	CO WICH	nin ci	err (	res	rdu	i Das	13	77	ult CB.			

· ~;

NRC FORM 366A (4-95)

#### U.S. NUCLEAR REGULATORY COMMISSION

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)	PAGE (3)
Point Beach Nuclear Plant, Unit 2	05000301	YEAR SEQUENTIAL REVISION NUMBER NUMBER	2 OF 3
		97 - 002 - 00	

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

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

#### NRC FORM 366A (4-95)

U.S. NUCLEAR REGULATORY COMMISSION

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	1	LER NUMBER (6	PAGE (3)	
Point Beach Nuclear Plant, Unit 2	05000301	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 3
		97	- 002 -	00	

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

(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

NRC FCRN 366A (4-95)