ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9105150329 DOC.DATE: 91/05/10 NOTARIZED: NO DOCKET #
FACIL:50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397
AUTH.NAME AUTHOR AFFILIATION
FIES,C.L. Washington Public Power Supply System
BAKER,J.W. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-008-00:on 910416,reactor declared in Mode 5 (refueling) w/average reactor coolant temp of 140 F.Caused by less than adequate procedures.Temp reduced & upper temp limits incorporated into plant procedures.W/910510 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD5 LA	1	1	PD5 PD	1	1
	ENG,P.L.	1	1			
INTERNAL:	ACNW	2	2	ACRS	2	2
	AEOD/DOA	1	1	AEOD/DSP/TPAB	1	1
	AEOD/ROAB/DSP	2	2	NRR/DET/ECMB 9H	1	1
	NRR/DET/EMEB 7E	1	1	NRR/DLPQ/LHFB11	1	1
	NRR/DLPQ/LPEB10	1	1	NRR/DOEA/OEAB	1	1
	NRR/DREP/PRPB11	2	2	NRR/DST/SELB 8D	1	1
	NRR/DST/SICB 7E	1	1	NRR/DST/SPLB8D1	1	1
	NRR/DST/SRXB 8E	1	1	REG FILE 02	1	1
	RES/DSIR/EIB	1	1	RGN5 FILE 01	1	1
EXTERNAL:	EG&G BRYCE,J.H	3	3	L ST LOBBY WARD	1	1
	NRC PDR	1	1	NSIC MURPHY,G.A	1	1
	NSIC POORE,W.	1	1	NUDOCS FULL TXT	1	1

Cent NO
P08560271 8

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
TOTAL NUMBER OF COPIES REQUIRED: LTTR 33 ENCL 33

RIDS/ADDS RIDS/ADDS

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

Docket No. 50-397

May 10, 1991

GO2 91-093

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 91-008

Dear Sir:

Transmitted herewith is Licensee Event Report No. 91-008 for the WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Very truly yours,

J. W. Baker (M/D 927M)
WNP-2 Plant Manager

JWB:ac

Enclosure:
Licensee Event Report No. 91-008

cc: Mr. John B. Martin, NRC - Region V
Mr. C. Sorensen, NRC Resident Inspector (M/D 901A)
INPO Records Center - Atlanta, GA
Ms. Dottie Sherman, ANI
Mr. D. L. Williams, BPA (M/D 399)
NRC Resident Inspector - walk over copy

Cert No P0856027718

IE22
1/1

NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	1 OF 0 4

TITLE (4) ENTRY INTO REFUELING MODE WITH AVERAGE REACTOR COOLANT TEMPERATURE GREATER THAN 140 DEGREES F DUE TO INADEQUATE PLANT PROCEDURES

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 4	1 6	9 1	9 1	0 0 8	0 0	0 5	1 0	9 1		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 %	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
C. L. Fies, Compliance Engineer	AREA CODE 5 0 9 3 7 7 - 2 0 3 9

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 fifteen single-space typewritten lines) (16)

At 1423 hours on April 16, 1991, just prior to the start of detensioning of the Reactor Pressure Vessel (RPV) head bolts, the reactor was declared to be in Mode 5 (Refueling) with the average reactor coolant temperature greater than 140 degrees F. This is a violation of the Technical Specification Operational Conditions Requirements listed on Table 1.2.

The root cause of this event was less than adequate procedures.

Immediate corrective action was taken to reduce the average reactor coolant temperature. Further corrective action will be taken to place the Technical Specification upper temperature limit in the plant procedures.

The event posed no threat to the health and safety of either the public or plant personnel.

Plant Conditions

Power Level -0 %
Plant Mode - 4

Event Description

At 1423 hours on April 16, 1991, just prior to the start of detensioning of the Reactor Pressure Vessel (RPV) head bolts, the reactor was declared to be in Mode 5 (Refueling) with the average reactor coolant temperature greater than 140 degrees F. This is a violation of the Technical Specification Operational Conditions Requirements listed on Table 1.2.

At 0700 hours with the plant in Mode 4 (Cold Shutdown) the Shift Manager noted RPV coolant average temperature was approximately 112 degrees F. The temperature had been logged at 117 degrees F by the mid-shift crew and the Shift Manager was concerned about Technical Specification 3.4.6.1.d which requires a minimum temperature of 80 degrees F on the RPV flange and head flange when the bolting studs are under tension. The Shift Manager also anticipated a RPV flood-up would be required to cover the steam dryer in order to limit radiation exposure when the head was lifted. If the downward primary coolant temperature trend continued, the flood-up could cause the flange temperature to be close to the 80 degree F requirement. In addition, it appeared that the time being taken to reach the point of detensioning was longer than it had been in previous refueling outages and could give the flanges more time to cool down.

As a result of the above considerations the Shift Manager directed Plant Operators to increase the RPV coolant temperature at approximately 0700 hours on April 16, 1991 by increasing the amount of coolant that bypasses the Residual Heat Removal (RHR) Heat Exchanger (RHR-HX-1B). The coolant temperature increased throughout the morning and peaked at approximately 157 degrees F at 1230 hours. It was then decreased slowly reaching a value of approximately 150 degrees F at 1600 hours.

During the same time period preparation for detensioning the RPV head continued following the guidance of Plant Procedure PPM 10.3.5, RPV Vessel Head Removal and Replacement. At approximately 1400 hours a pyrometer temperature reading of 89 degrees F was taken on the RPV flange. At 1423 hours Mode 5 (Refueling) was declared, and detensioning was allowed to start. At that time the average reactor coolant temperature was 155 degrees F.

RPV head detensioning continued during swing-shift and was completed at 2257 hours. The average reactor coolant temperature stabilized at approximately 150 degrees F during this time period and the flange temperature increased to 100 degrees F. The non-compliance with the Technical Specification was not detected by the day-shift crew that initiated Mode 5 operation or the swing-shift crew that continued to support the detensioning operation. The error was detected by the mid-shift Shift Manager who recognized the Technical Specification definition of Mode 5 was exceeded.

Immediate Corrective Action

Immediate corrective action was taken by the mid-shift operating crew to reduce the average reactor coolant temperature by decreasing the amount of coolant that bypasses the RHR Heat Exchanger (RHR-HX-1B). The plant was cooled down to less than 140 degrees F by 2338 hours on April 16, 1991.

Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is being reported per the requirements of 10CFR50.73(a)(2)(i)(B) as ".....Any operation or condition prohibited by the plant's Technical Specifications...."

2. The root cause of this event was less than adequate procedures. None of the procedures associated with the operating mode change mentioned the 140 degree limitation in Technical Specification Table 1.2.

3. An evaluation was performed to identify which procedures require modification. Plant procedure, PPM 1.3.40, Operating Mode Change Notification, is used to verify all of the required surveillances are done prior to changing from Mode 4 to Mode 5 (or the reverse). This procedure may be completed and signed off long before the actual start of head bolt detensioning. As a result, it was concluded that adding the upper temperature limit requirement to this procedure would not provide an effective barrier to reoccurrence. Three other plant procedures identified below under Further Corrective Actions will provide this protection.

4. Further evaluation confirmed the lack of a specific reference to the temperature limit in the Plant Procedures. The only indirect reference was in the form of a "NOTE" found in Plant Procedure PPM 1.3.40, Operating Mode Change Notification, which reads, "Definition of modes may be found in the Definitions section of Technical Specifications."

5. There were no structures, components or systems that were inoperable prior to the start of this event which contributed to the event.

B. Further Corrective Action

1. Plant Procedure PPM 10.3.5, Reactor Vessel Head Removal and Replacement, will be revised to include a sign off step prior to the start of detensioning to verify the RPV coolant temperature is below the 140 degree F limit. Additionally, the 140 degree F upper temperature limit will be added to the "Limitations" section.

2. Plant Procedure PPM 7.4.4.6.1.1D, RPV Head Tensioning/Detensioning Temperature Surveillance, will be revised to include the upper coolant temperature limit (140 degrees F) for operation in Mode 5 while head detensioning is in progress.

3. Plant Procedure PPM 7.0.2, Shift and Daily Instrument Checks (Mode 5), will be revised to include monitoring RPV Coolant temperature and the Technical Specification limit of 140 degrees F.

Safety Significance

The Standard Technical Specifications for General Electric BWR-6 Plants (NUREG-1434) issued by the NRC in January 1991 have removed the 140 degree F coolant requirement for Mode 5 operation because there is no accident condition postulated during refueling that takes credit for moderator temperature. This would also apply to BWR-5 plants such as WNP-2.

The higher coolant temperatures could result in a radiological concern if the primary system were open to the Reactor Building atmosphere. During the time period that the temperature was high the Standby Gas Treatment (SGT) System was available if it had been required. However, since the reactor vessel head remained in place while the temperature was above 140 degrees F there was no increase in the evaporation rate of primary coolant to the Reactor Building atmosphere.

In conclusion, there was no safety significance associated with this event.

Similar Events

There have been no similar events involving temperature requirements associated with mode changes. LER 86-005 was written when Mode 5 was entered without all required surveillances performed. The procedure changes generated to correct this problem did not identify the 140 degree F requirement.

EIIS Information

Text Reference	EIIS Reference System	EIIS Reference Component
Reactor Pressure Vessel (RPV	AC	VSL
Residual Heat Removal Heat Exchanger 1B (RHR-HX-1B)	SO	HX
Standby Gas Treatment (SGT)	BH	--