

# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Washington Nuclear Plant - Unit 2

DOCKET NUMBER (2)

0 5 0 0 0 3 9 7

PAGE (3)

1 OF 5

TITLE (4)

**PRESSURE SUPPRESSION PRESSURE LIMIT (PSPL) CURVE IN THE EOPS DID NOT AGREE WITH THE DESIGN CALCULATION**

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
0	9	1	2	9	0	9	0	0	0
0	9	1	2	9	0	9	0	0	0
0	9	1	2	9	0	9	0	0	0
0	9	1	2	9	0	9	0	0	0

OPERATING MODE (9) 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL (10)	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(C)	50.36(c)(1)	50.36(c)(2)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(x)	77.71(b)	73.73(c)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
1																					

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
C. L. Fies, Compliance Engineer	5 0 9 3 7 7 - 4 1 4 7

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) ☒ NO

ABSTRACT (16)

On September 12, 1990, at 1108 hours it was determined that a discrepancy with the Pressure Suppression Limit (PSPL) curve in the Emergency Operating Procedures (EOPs) was reportable as a condition alone that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. This discrepancy was discovered by an NRC Inspector during a recent NRC Team Inspection of the EOPs.

The PSPL curve in the EOP procedure did not agree with the design calculation that formed the basis for the curve. The procedural curve specified a wetwell pressure limit which was as much as 2.0 psi too high between 19.2 and 37.0 feet of Suppression Pool water level. This pressure is a function of primary containment water level and the limit is used during emergency situations to ensure that the pressure suppression function of the containment is maintained while the RPV is at pressure. The procedural discrepancy could have resulted in inappropriate operator action if a situation had occurred which required that the graph be used.

As an immediate corrective action, the applicable procedure was changed to reflect the correct PSPL curve as specified by the design calculation. Further corrective action consisted of reviewing all curves in the Emergency Operating Procedures to verify accuracy with the corresponding design calculations. As a result of that review, it was discovered that the Heat Capacity Temperature Limit (HCTL) and Primary Containment Pressure Limit (PCPL) curves also did not agree with the calculational bases. The discrepancy in the HCTL curve was determined by engineering judgment to be within the conservatism of

<b>LICENSEE EVENT REPORT (LER)</b> <b>TEXT CONTINUATION</b>										
<b>FACILITY NAME (1)</b>  Washington Nuclear Plant - Unit 2	<b>DOCKET NUMBER (2)</b>  0   5   0   0   0   3   9   7			<b>LER NUMBER (8)</b>			<b>PAGE (3)</b>			
				Year	Number	Rev. No.				
				90	019	01	2	OF	5	
<b>TITLE (4)</b> PRESSURE SUPPRESSION PRESSURE LIMIT (PSPL) CURVE IN THE EOPS DID NOT AGREE WITH THE DESIGN CALCULATION										

the design calculation and; therefore, would not have caused inappropriate operator action. The procedure for the HCTL curve was changed to reflect the correct information as specified in the design calculations. The error in the PCPL curve was conservative.

The root cause is less than adequate work practices by both Engineering personnel and the Operations EOP Coordinator for not using the normal review process for engineering calculations. A contributing cause can be attributed to inadequate communications between the two involved parties.

This event did not affect the health and safety of either the public or Plant personnel.

#### Plant Conditions

Power Level - 100%

Plant Mode - 1 (Power Operation)

#### Event Description

On September 12, 1990, at 1108 hours it was determined that a discrepancy with the Pressure Suppression Pressure Limit (PSPL) curve in the Emergency Operating Procedures (EOPs) was reportable as a condition alone that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. This discrepancy was discovered by an NRC Inspector during a recent NRC Team Inspection of the EOPs.

The PSPL curve in Plant Procedure (PPM) 5.0.1, "Emergency Operating Procedure Graphs," did not agree with the design calculation that formed the basis for the curve. Pressure Suppression Pressure is defined to be the lesser of either 1) the highest pressure suppression chamber pressure which can occur without steam in the chamber airspace, or 2) the highest suppression chamber pressure at which initiation of Reactor Pressure Vessel (RPV) depressurization will not result in exceeding the Primary Containment Pressure Limit before RPV pressure drops to the minimum RPV Flooding Pressure, or 3) the highest suppression chamber pressure which can be maintained without exceeding the suppression pool boundary design load if Safety Relief Valves are opened. This pressure is a function of primary containment water level and is used to ensure that the pressure suppression function of the containment is maintained while the RPV is at pressure.

In this particular situation, the PSPL curve in PPM 5.0.1 was nonconservative with regard to suppression chamber pressure. The procedural curve specified a wetwell pressure limit which was as much as 2.0 psi too high between 19.2 and 37.0 feet of Suppression Pool water level. This discrepancy could have resulted in inappropriate Plant Operator action if a situation had occurred which required that the graph be used..

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION																
FACILITY NAME (1)		DOCKET NUMBER (2)							LER NUMBER (8)			PAGE (3)				
Washington Nuclear Plant - Unit 2		0   5   0   0   0   3   9   7							Year	Number		Rev. No.				
									9   0	0   1   9		0   1		3	OF	5
TITLE (4) PRESSURE SUPPRESSION PRESSURE LIMIT (PSPL) CURVE IN THE EOPS DID NOT AGREE WITH THE DESIGN CALCULATION																

### Immediate Corrective Action

Plant Procedure (PPM) 5.0.1, "Emergency Operating Procedure Graphs," was changed to reflect the correct PSPL curve as specified by the design calculation.

### Further Evaluation and Corrective Action

#### A. Further Evaluation

1. This event is reportable under 10CFR50.73(a)(2)(v) as an event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.
2. There were no structures, systems or components that were inoperable at the start of the event that contributed to the event.
3. During preparation of the Emergency Operating Procedures, development of the design calculations and the associated procedural revisions were being performed concurrently by two separate groups. Supply System Engineering personnel were responsible for performing the calculations and the Operations EOP Coordinator was responsible for the procedural development. In this particular situation, a preliminary calculation was initially used as the basis for the PSPL curve in the draft procedure. However, during the final review of the calculation, the results were changed and the new Wetwell pressure information from this final calculation was not incorporated into the procedure. This oversight was not discovered during the normal procedure review process, nor during a special review of the procedures by the Technical Assessment Group.
4. The root cause is less than adequate work practices by the Operations and Engineering personnel involved in the EOP revisions. This led to circumvention of the administrative process for verifying, transmitting, and using only final Engineering calculations due to time constraints. The Operations EOP Coordinator did not review the Calculation Cover Sheet which had been sent from Engineering for Calculation NE-02-89-28, to ensure that the "Verification/Approval Section" had been signed off. This would have indicated that it was not the final calculation. Engineering was behind in their commitment date for completing the EOP calculations needed by Operations. The Operations EOP Coordinator requested and received from Engineering initial calculation values, with the understanding that they were not the final calculations. These initial calculations were, subsequently, used when the EOPs were revised.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														
FACILITY NAME (1)		DOCKET NUMBER (2)							LER NUMBER (8)			PAGE (3)		
Washington Nuclear Plant - Unit 2		0   5   0   0   0   3   9   7							Year   Number   Rev. No. 90   019   01			4 OF 5		
TITLE (4) PRESSURE SUPPRESSION PRESSURE LIMIT (PSPL) CURVE IN THE EOPS DID NOT AGREE WITH THE DESIGN CALCULATION														

5. A contributing root cause was lack of timeliness in communications. The Operations EOP Coordinator and Engineering failed to complete timely and accurate communications during the change in the calculations for Pressure Suppression Pressure Limit (PSPL), which were to be inserted in EOP 5.0.1. Because of the deadline for a forthcoming NRC EOP Inspection Team, the normal process for performing and transmitting "finalized" calculations was circumvented.
6. A second contributing cause was personnel lack of attention/concentration. A work assignment change occurred for one of the key individuals in the calculation process. The change in work assignment affected the concentration and continuity needed for finalizing the calculation process.

B. Further Corrective Actions Completed

1. A review of all curves in the Emergency Operating Procedures was performed to verify accuracy with the corresponding design calculations. As a result of this review, two additional problems were identified. The Heat Capacity Temperature Limit (HCTL) and Primary Containment Pressure Limit (PCPL) curves in the EOPs did not agree with the calculational bases. The HCTL curve, which is a function of RPV pressure and is used to preclude failure of the containment or equipment necessary for safe shutdown of the Plant, was nonconservative (by 3 - 5 degrees F) with regard to Suppression Pool temperature limits. This discrepancy, which appears to be due to a drafting error, was determined by engineering judgment to be within the conservatism of the design calculation and; therefore, would not have caused inappropriate operator action.

The PCPL curve is a function of primary containment water level and is used to maintain primary containment pressure so that containment failure due to overpressurization does not occur. The error in the PCPL curve was conservative and would not have provided inappropriate direction to Plant Operators.

The HCTL curve in the EOPs was changed to reflect the correct information as specified in the design calculations.

2. The formal root cause analysis of this event was completed.
3. A verification was performed to insure correct incorporation of all the Engineering calculations used in EOP development to ensure EOP correctness. (WNP-2 Response to NRC IR 90-20 commitment)
4. A review was performed of all curves used in PPM 5.0.1 to ensure correct incorporation of the supporting engineering calculations.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION											
FACILITY NAME (1)		DOCKET NUMBER (2)					LER NUMBER (8)			PAGE (3)	
Washington Nuclear Plant - Unit 2		0   5   0   0   0   3   9   7					Year	Number	Rev. No.		
							9   0	0   1   9	0   1	5 OF 5	
TITLE (4) PRESSURE SUPPRESSION PRESSURE LIMIT (PSPL) CURVE IN THE EOPS DID NOT AGREE WITH THE DESIGN CALCULATION											

5. Counsel was given to Operations and Engineering personnel responsible for this event, as immediate corrective action to correct the root cause and the first contributing cause. The administrative process and procedure used by Engineering/WNP-2 personnel for performing and issuing final calculation values is more than adequate. The personnel involved in this event are aware of the error made in circumventing the established administrative process that led to the event.

### Safety Significance

The purpose of the Emergency Operating Procedures, which function as an integrated set of symptom-oriented instructions, is to specify those operator actions necessary to mitigate the consequences of emergency situations. The EOPs are the procedures that govern Plant operation during these conditions, and which direct the operator actions required to bring the Plant to a shutdown condition.

It is believed that sufficient conservatism was included in the calculation for the PSPL curve such that design parameters would not have been exceeded if an emergency situation occurred during the event period. However, this cannot be positively stated without a comprehensive engineering analysis of the calculations that formed the bases for the curve. As a result, it is assumed that the discrepancy in the PSPL curve may have delayed those required Plant Operator actions if an emergency situation had occurred during the time-frame that the nonconservative direction was included in the procedures.

However, since an emergency condition did not occur during this time and the procedures were not used, this event did not affect the health and safety of either the public or Plant personnel.

### Similar Events

None

### EIIS Information

#### Text Reference

Primary Containment  
Pressure Suppression Chamber/Wetwell  
Safety Relief Valves

#### EIIS Reference

<u>System</u>	<u>Component</u>
NH	---
NH	---
SN	RV