NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)
High Energy Line Break Analysis

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 5 0 0 0
0 1	1 1	8 5	8 5	0 0 1	0 1	0 3	0 8	8 5		0 5 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)	0 9 8	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)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	10CFR21
		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
R. L. Koenigs, Compliance Engineer	AREA CODE 5 0 9 3 7 7 - 2 5 0 1 Ext. 2279

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	
B	C E	- - -	- - -	N							
B	B N	- - -	- - -	N							

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)

Similar to the condition noted in IE Information Notice 84-90, non-conservative assumptions were found in the Reactor Core Isolation Cooling (RCIC) and Reactor Water Cleanup (RWCU) High Energy Line Break (HELB) calculations which determined the Reactor Building environmental profiles used in determining equipment qualification per 10CFR50.49. Further analysis has determined that correction of these non-conservative assumptions did result in predicted environmental conditions more severe than those used in the equipment qualification. However, a review of the equipment involved has determined that required equipment could be qualified or justified for interim operation to the more severe conditions, and that mitigation of the event and safe shutdown would not be compromised.

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

Plant Conditions

a) Plant Mode - 1
b) Power Level - 98%

Event

On January 11, 1985, based on Supply System review of an independent consultant's calculations, it was determined that a 10CFR21 condition existed due to non-conservative engineering assumptions associated with calculating the environmental profiles used to qualify Reactor Building equipment per 10CFR50.49. The Supply System has identified non-conservative assumptions concerning 1) response times for Leak Detection System (LD) temperature detectors that were used and, 2) the use of saturated fluid conditions rather than subcooled fluid conditions for blowdown analysis following a line break.

The Supply System has determined that this event resulted because an adequate system level review was not performed, nor adequate valve closure operating times established, when the environmental qualification profiles were established.

Initial Corrective Action

- Prior to January 15, 1985, valve stroke times for the DC powered outboard RWCU and RCIC isolation valves were adjusted to provide isolation within time frames that preserve existing environmental profiles.

- During an unscheduled outage on January 31, 1985, the AC powered inboard RWCU and RCIC isolation valves were adjusted to provide isolation within the stroke time necessary to preserve the environmental profiles that had been used in equipment qualification.

- The Supply System on February 1, 1985, completed an evaluation to assess the possible consequences of the non-conservative assumptions on the qualification of equipment identified in the Justification for Interim Operation (JIO) Table A provided in the referenced transmittal. This evaluation concluded that equipment could be qualified to the more severe environmental profiles and that the required safe shutdown path was not compromised.

- The independent consultant, Impell, Corp., was notified on January 22, 1985, that the Supply System considers this event reportable per 10CFR21. The Supply System presently has no knowledge of other plants where these non-conservative assumptions may have been applied during the equipment qualification process. The independent consultant has expressed an interest in assisting the Supply System in correcting the documentation errors associated with the deficiency.

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

Final Corrective Action

A plant modification is scheduled to modify the motor operator of the inboard and outboard valves to eliminate the need for blocking the valves in a partially closed position.

Safety Significance

An evaluation has been completed to 1) assess the consequences of the non-conservative assumptions on the RCIC and RWCU HELB environmental profiles used in equipment qualification, and 2) assess the affect of the more severe profiles on the equipment required to mitigate the event and achieve safe shutdown. This analysis was based on the following key assumptions which are consistent with BTP ASB 3-1.

- RCIC and RWCU isolation valve closure speeds were based on existing Technical Specification limits. Single active component failure of the faster of the inboard or outboard valve was assumed. The limiting valve in both systems is the inboard AC powered valve.

- Loss of off-site power was assumed for the RWCU line breaks because direct actuation of the RPS, and hence turbine generator loss, may occur. Off-site power is available for the RCIC breaks until operator action is taken to shutdown the Plant since no RPS actuation is postulated. Since RCIC line isolation occurs within 30 seconds, AC power would be available to complete system isolation, but not to mitigate the Reactor Building break zone environmental transient.

A sensitivity evaluation of the RWCU HELB environmental profiles considering both availability and unavailability of AC power was conducted. It was found that maximum break zone environmental conditions were not significantly affected by including additional diesel generator start time (10 sec.) delays in the profile calculations. Therefore, the most severe postulated environmenal conditions, i.e., AC unavailable, were used in the RWCU HELB equipment qualification review. The sensitivity of the RCIC HELB environmental profiles to AC power availability was also reviewed. The profiles developed show loss of AC power would result in more severe environmental profiles. However, since no direct RPS actuation mechanistically results from the RCIC HELBs, AC power is available to terminate the mass energy release from the postulated pipe breaks. The resulting environmental profiles were then used to determine, per the requirements of 10CFR50.49, if the equipment necessary to achieve one path to shutdown (JIO Table A) could be qualified to the more severe environmental profiles.

In summary, it was found that all equipment identified on JIO Table A could either be qualified to the more severe postulated environmental profiles, was not needed to mitigate the event or achieve safe shutdown, or has been justified for interim operation without qualification per 10CFR50.49(i). Based on this evaluation, it was concluded that the Plant was operating in a safe manner subsequent to the discovery of the deficiency reported on January 11 and prior to the January 31 unscheduled outage during which the AC powered inboard RCIC/RWCU isolation valves were blocked partially shut. Blocking the valves preserves the environmental profiles that were and are being used in equipment qualification.

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The Plant is now in compliance with the operating conditions necessary to preserve the environmental profiles used in equipment qualification. No additional report will be submitted.

Similar Event

Refer to 10CFR50.55(e) report #287, dated 10-28-83.

Reference

G02-83-590, G.D. Bouchey to A. Schwencer, Nuclear Project No. 2, Justification for Interim Operation, June 30, 1983.

Washington Public Power Supply System
P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

Docket No. 50-397
March 8, 1985

Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 85-001-01

Dear Sir:

Transmitted herewith is Licensee Event Report No. 85-001-01 for WNP-2 Plant. This report is submitted to provide supplementary information to Licensee Event Report No. 85-001 with regard to corrective action.

Very truly yours,

CM Powers for
J. D. Martin (M/D 927M)
WNP-2 Plant Manager

JDM:mm

Enclosure:
Licensee Event Report No. 85-001-001 (3 copies)

cc: Mr. John B. Martin, NRC - Region V
Document Control Desk - NRC
Mr. A. D. Toth, NRC - Site (901A)
Ms. Dottie Sherman, ANI
INPO Records Center - Atlanta, GA

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