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 RECIP. NAME: SCHWENCER, A. RECIPIENT AFFILIATION: Licensing Branch 2

SUBJECT: Forwards info re control rod drive sys line break, missile protection of equipment & UHS capabilities during seismic tornado events. Info closes out SEP Outstanding Issue 1.7(28), "Pipe Break in BWR Scram Sys."

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NRR/DSI/AEB	26	1	1	NRR/DSI/ASB	27	1	1
NRR/DSI/CPB	10	1	1	NRR/DSI/CSB	09	1	1
NRR/DSI/ETSB	12	1	1	NRR/DSI/ICSB	16	1	1
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NRR/DSI/RSEB	23	1	1	NRR/DST/LGB	33	1	1
REG FILE	04	1	1	RGNS		2	2
EXTERNAL: ACRS	41	16	16	BNL (AMDTS ONLY)		1	1
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## Washington Public Power Supply System

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May 12, 1982  
G02-82-436  
SS-L-02-PLP-82-028

Docket No. 50-397

Mr. A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2  
SUBMITTAL OF INFORMATION PROVIDED NRC  
REPRESENTATIVES DURING A SITE VISIT APRIL 26-27, 1982

During the subject site visit Messrs. R. Auluck, J. Ridgely and R. Lobel of your staff were provided information on the following subjects:

1. Additional discussion of control rod drive system line break impact, NUREG-0803 (Attachment 1).
2. Missile protection of equipment identified during a plant tour by Mr. J. Ridgely (Attachment 2).
3. Clarification of ultimate heat sink capabilities under seismic or tornado events (Attachment 3).

By submittal of Attachment 1, the Supply System considers Safety Evaluation Report, Outstanding Issue 1.7(28), "Pipe Break in the BWR Scram System (4.6)" to be closed.

Should you have any further questions, please contact Mr. R. M. Nelson, Project Licensing Manager, WNP-2.

Very truly yours,

*SD Bouchey*

G. D. Bouchey  
Deputy Director, Safety and Security

PLP/jca  
Attachments

cc: R Auluck - NRC  
WS Chin - BPA  
R Feil - NRC Site  
R Lobel - NRC  
J Ridgely - NRC

*Boo  
5/11*

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## ATTACHMENT 1:

### CRD SYSTEM LINE BREAK DISCUSSIONS

The majority of the Supply System response to NUREG-0803 has been provided in previously submitted letters:

- G02-82-37, G.D. Bouchev (SS) to A. Schwencer (NRC), "Safety Concerns Associated with Pipe Breaks in the BWR Scram System", dated January 13, 1982
- G02-82-395, G.D. Bouchev (SS) to A. Schwencer (NRC), Same Subject, dated April 22, 1982

The following discussion was presented to Messrs. J. Ridgely, R. Auluck and R. Lobel of the NRC staff to clarify the previously submitted letters:

Of concern is the potential for a small line break in an unisolable line (insert or withdraw risers) between the CRD hydraulic control units (HCU's) and the Primary Containment.

The only line of concern is the 3/4" withdraw riser. In the event of a line break, the leakage would be limited to approximately 5 gpm with badly worn CRD seals or less than 10 gpm with no seal integrity whatsoever. This leakage rate is within the bounds of the small break LOCA analysis and therefore is not a problem with response to make-up capability and assurance of adequate core cooling. This line break would potentially create a localized environment which is significantly harsher than the one utilized in equipment qualification programs. The Supply System is presently conducting a Safe Shutdown analysis to determine the minimum operable equipment required to achieve cold shutdown. This study is incomplete to date, but it is expected to show that the equipment in the area localized to the CRD HCU's is either unnecessary for safe shutdown or will be qualified to the harsher environment. In addition, the BWR Owner's Group is examining, on a plant specific basis, the probability of this event occurring in an attempt to show that it is of no safety significance, i.e., that the probability of occurrence is  $10^{-6}$ /year. The capability of the plant leakage detection system and the drains/sumps to identify such a leak and handle the water volume and temperatures was affirmed. Finally a brief discussion of the plant staff response to such a line break was provided. This response would include a rapid plant shutdown and depressurization to minimize the total leakage from the break. Following rod leakage identification, rod withdrawal to position 48 to backseat the drain thus further minimizing leakage. Finally, mobilization of a maintenance crew to clamp or freeze seal the leaking riser would occur. The radiological burden to the plant staff would be expected to be manageable within prudent operating practice.

It was indicated that this modified response to NUREG-0803 was adequate when coupled with the further elaboration provided.



ATTACHMENT 2

MISSILE PROTECTION OF EQUIPMENT IDENTIFIED  
DURING A PLANT TOUR BY MR. J. RIDGELY

The equipment in question is located at grade elevation in the west end of the Turbine Building. The three (3) pumps in question are condensate booster pumps, COND-P-2 Units A, B and C. These pumps are not safety related nor are they required for safe shutdown. Likewise, none of the mechanical and electrical equipment and cabling in the area is safety related or required for safe shutdown.



### ATTACHMENT 3

#### ULTIMATE HEAT SINK CAPABILITIES DURING SEISMIC OR TORNADO EVENTS

The Ultimate Heat Sink (UHS) spray piping networks are not considered tornado resistant and are assumed to be lost functionally following a tornado. The safety function of the UHS is assured by providing cooling water from the Columbia River via buried makeup water system piping. This system has three (3) pumps each capable of providing over 12,000 gpm to the spray ponds. The river water enters the pond near the standby service water intake, is pumped to the plant and back to the other pond where it overflows the pond weir and goes back to the river. The makeup pumps and pipe to the spray pond are protected from the effects of tornados, but the syphon is not protected since it is not required following a tornado.

Following a seismic event, the makeup capability is assumed to be lost, and the water in both ponds is required to meet the 30-day water inventory requirement. In normal operation, suction is taken from one pond and is returned into the other pond. The syphon line transfers water from one pond to the other. When both pumps are being used, the syphon line keeps the pond levels nearly equal. The two loops are redundant (either one or both may be used), but the inventory in the ponds is not.

