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 AUTH. NAME: BOUCHEY, G.D. AUTHOR AFFILIATION: Washington Public Power Supply System  
 RECIP. NAME: SCHWENCER, A. RECIPIENT AFFILIATION: Licensing Branch 2

SUBJECT: Forwards response to SER Question 23 amending util 820114  
 response re criteria for balance-of-plant & NSSS tables.  
 Info will be incorporated.

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## Washington Public Power Supply System

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

February 19, 1982  
G02-82-237  
SS-L-02-PLP-82-007

Docket No. 50-397

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

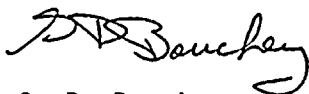
Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2  
SUBMITTAL OF SER OPEN ISSUES

Reference: Letter, G.D. Bouchey (SS) to A. Schwencer (NRC),  
G02-82-41, Same Subject, dated January 14, 1982

The reference letter submitted Supply System responses to various NRC Branch/Supply System meetings. Attached is an amended response to MEB 23 provided in the reference letter. This amended response verifies that both BOP and NSSS tables provided in the original response use the same criteria: "Evaluation of Topical Report - Piping Functional Capability Criteria", dated July 17, 1980. This revised response will be inserted in a forthcoming FSAR revision.

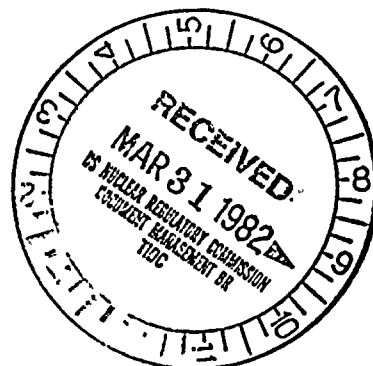
Very truly yours,



G. D. Bouchey  
Deputy Director, Safety and Security

PLP/jca  
Attachment

cc: R Auluck - NRC  
WS Chin - BPA  
R Feil - NRC Site



Boo!  
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3.9.3 ASME Code Class 1, 2 and 3 Components, Component Supports and Core Support Structures

3.9.3.1 Loading Combinations Design Transients and Stress Limits

Question 23

The loading combinations and stress limits used in the design of (1) all ASME Class 1, 2 and 3 systems, components, equipment and their supports, (2) all reactor internals and (3) control rod drive components need to be clarified in the FSAR. Section 3.9.3.1 and the majority of Tables 3.9.2(a) through 3.9.2(ac) in the FSAR do not clearly define the loading combinations and stress limits. We will require a concise summary (preferably in table form) of this information. This summary should include a listing of all the loads which were considered for each service condition or load case plus the acceptance criteria. Appendix 110-1 to NRC Question 110.27 contains loading combinations and acceptance criteria applicable to all of the above system, components, equipment and supports. Table 3.6-5 of the WNP-2 "Plant Design Assessment for SRV and LOCA Loads" presents information which is not completely acceptable. We will require a commitment to the Appendix 110-1 mentioned above. In addition, we will require a clarification of the applicability of Table 3.6-5, i.e., are all of the loading combinations and acceptance criteria in Table 3.6-5 applicable to all of the systems, components, equipment, etc., discussed in the first paragraph above.

Response:

The Table number 3.6-5 in the question appears to be in error. Table 3.5-5 appears to be the table to which the question refers.

See revised Table 3.5-5 of the WNP-2 "Plant Design Assessment for SRV and LOCA Loads" for load combinations and acceptance criteria for balance of plant (attached).

See Table Q23-1 for the load combinations and acceptance criteria for NSSS piping and equipment.

Summation - The effects of hydrodynamic loads listed in the load combination table will be documented in the New Loads update. This item is closed.

LOAD COMBINATIONS AND ACCEPTANCE CRITERIA  
FOR ASME CODE CLASS 1, 2, and 3 BOP PIPING AND EQUIPMENT \*\*

<u>Load Cases</u>	<u>Load Combinations (1)/(2)</u>	<u>Design Assessment Acceptance Criteria</u>
1	P+D.W.	Normal (A)
2	N+ OBE +SRV <sub>ONE</sub>	Upset (B)
3	N+ OBE +SRV <sub>TWO</sub>	Upset (B)
4	N+ OBE +SRV <sub>ALL</sub>	Upset (B)
5	N+ OBE +SRV <sub>ADS</sub> +SBA	Emergency * (C)
6	N+ OBE +SRV <sub>TWO</sub> +SBA	Emergency * (C)
7	N+ SSE +SRV <sub>ADS</sub> +SBA/IBA	Faulted * (D)
8	N+ SSE +SRV <sub>TWO</sub> +SBA/IBA	Faulted * (D)
9	N+ SSE +SRV <sub>ONE</sub>	Faulted * (D)
10	N+ SSE +SRV <sub>TWO</sub>	Faulted * (D)
11	N+ SSE +SRV <sub>ALL</sub>	Faulted * (D)
12	N+ SSE +DBA	Faulted * (D)

(1) As required by the appropriate subsection, i.e., NB, NC or ND of ASME Section III, Division 1, other loads, such as thermal transient, thermal gradients, and anchor point displacement portion of the OBE or SRV, may require consideration in addition to those primary stress-producing loads listed.

(2) SBA, IBA, and DBA include all event induced loads, as applicable, such as chugging, pool swell, drag loads, annulus pressurization, etc.

\*All ASME Code Class 1, 2 and 3 piping systems which are required to function for safe shutdown under the postulated events shall meet the requirements of NRC's memorandum, "Evaluation of Topical Report - Piping Functional Capability Criteria", dated July 17, 1980.

\*\*Equipment includes pumps, valves, supports, vessels. For bolting used in connection with the support of ASME Code Class 1, 2, and 3 components, vendor load capacity data sheets are used or where design is by the architect engineer, stress levels are maintained less than specified minimum yield at temperature.



LOAD DEFINITION LEGEND (Table 3.5-5)

Normal (N)	- Normal loads include internal pressure and dead weight
OBE	- Operational Basis Earthquake loads
SSE	- Safe Shutdown Earthquake loads
SRV <sub>TWO</sub>	- Safety/relief valve discharge induced loads from two adjacent valves
SRV <sub>ALL</sub>	- The loads induced by actuation of all safety/relief valves
SRV <sub>ADS</sub>	- The loads induced by the actuation of safety/relief valves associated with the automatic depressurization system
SRV <sub>ONE</sub>	- The loads induced by the actuation of one safety/relief valve
SBA	- Small Break Accident
IBA	- Intermediate Break Accident
DBA	- Design Basis Accident





**LOAD COMBINATION AND ACCEPTANCE CRITERIA  
ASME CODE CLASS 1, 2, AND 3  
NSSS PIPING AND EQUIPMENT**

(23)

<u>Load Combination</u>	<u>Design Basis</u>	<u>Evaluation Basis</u>	<u>(Service Level)</u>
N + SRV <sub>(ALL)</sub>	Upset	Upset	(B)
N + OBE	Upset	Upset	(B)
N + OBE + SRV <sub>(ALL)</sub>	Emergency	Upset	(B)
N + SSE + SRV <sub>(ALL)</sub>	Faulted	Faulted*	(D)
N + SBA + SRV	Emergency	Emergency**	(C)
N + IBA + SRV	Faulted	Faulted*	(D)
N + SBA + SRV <sub>(ADS)</sub>	Emergency	Emergency**	(C)
N + SBA + OBE + SRV <sub>(ADS)</sub>	Faulted	Faulted*	(D)
N + IBA + OBE + SRV <sub>(ADS)</sub>	Faulted	Faulted*	(D)
N + SBA/IBA + SSE + SRV <sub>(ADS)</sub>	Faulted	Faulted*	(D)
**N + LOCA + SSE	Faulted	Faulted*	(D)

**LOAD DEFINITION LEGEND**

- Normal(N) - Normal and/or abnormal loads depending on acceptance criteria.
- OBE - Operational basis earthquake loads.
- SSE - Safe Shutdown earthquake loads.
- SRV - Safety/relief valve discharge induced loads from two adjacent valves (one valve actuated when adjacent valve is cycling).
- SRV<sub>ALL</sub> - The loads induced by actuation of all safety/relief valves which activate within milliseconds of each other (e.g., turbine trip operational transient).
- SRV<sub>ADS</sub> - The loads induced by the actuation of safety/relief valves associated with Automatic Depressurization System which actuate within milliseconds of each other during the postulated small or intermediate size pipe rupture.

*note: This table will be inserted into the FSAR.*



(13)

LOAD COMBINATION TABLE (CONT'D)

- LOCA - The loss of coolant accident associated with the postulated pipe rupture of large pipes (e.g., main steam, feedwater, recirculation piping).
- LOCA<sub>1</sub> - Pool swell drag/fallout loads on piping and components located between the main vent discharge outlet and the suppression pool water upper surface.
- LOCA<sub>2</sub> - Pool swell impact loads on piping and components located above the suppression pool water upper surface.
- LOCA<sub>3</sub> - Oscillating pressure induced loads on submerged piping and components during condensation oscillations.
- LOCA<sub>4</sub> - Building motion induced loads from chugging.
- LOCA<sub>5</sub> - Building motion induced loads from main vent air clearing.
- LOCA<sub>6</sub> - Vertical and horizontal loads on main vent piping.
- LOCA<sub>7</sub> - Annulus pressurization loads.
- SBA - The abnormal transients associated with a Small Break Accident.
- IQA - The abnormal transients associated with an Intermediate Break Accident.

\* All ASME Code Class 1, 2, and 3 piping systems which are required to function for safe shutdown under the postulated events shall meet the requirements of NRC's ~~"Interim Technical Position-Function Capability of Passive Components"~~ by MEB memorandum, "Evaluation of Topical Report - Piping Functional Capability Criteria," dated July 17, 1980.

\*\* The most limiting case combination among LOCA<sub>1</sub> through LOCA<sub>7</sub>:

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