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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

500C Chestnut Street Tower II

May 11, 1979

USNRC REGION II
ATLANTA, GEORGIA
79 MAY 14 A9:42

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN 79-04

By letter dated May 1, 1979, you were provided with a partial response to the subject bulletin for the Browns Ferry Nuclear Plant. Enclosed is the additional information providing a complete response to the subject bulletin.

Very truly yours,

J. E. Gilleland
Assistant Manager of Power

Enclosure
cc: Mr. Norman C. Moseley, Director (Enclosure)
Division of Reactor Operations Inspection
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

SUPPLEMENTAL RESPONSE TO IE BULLETIN 79-04
INCORRECT WEIGHTS FOR SWING CHECK VALVES
MANUFACTURED BY VELAN ENGINEERING CORPORATION
BROWNS FERRY NUCLEAR PLANT
(DOCKET NOS. 50-259, 50-260, AND 50-296)

1. RCIC System Piping Reanalysis Using Correct Weight of Velan Swing Check Valves (includes TPIPE computer program output and RCIC System Isometric Drawing No. 47W335-17)

2. Summary of Stresses and Loads and Allowable Limits for the Piping and its Supports (includes Support Load Tables for units 1, 2, and 3)

1. RCIC PIPING REANALYSIS USING CORRECT WEIGHT OF VELAN SWING CHECK VALVES

TPIPE Computer Program

The pump suction piping of the Reactor Core Isolation Cooling (RCIC) System at the Browns Ferry Nuclear Plant was reanalyzed using the most recent available information regarding the weight of the Velan swing check valves for that system. (This information was provided to TVA by Velan Engineering Corporation by telex on April 25, 1979.) The piping was analyzed for the deadweight and seismic conditions using the TPIPE computer program. (A description of the TPIPE computer program is presented in the Sequoyah Nuclear Plant FSAR Section 3.9.2.5.) Stress combinations were computed for ANSI B31.1, equations 8, 9U, and 9E. These combinations were then compared to the appropriate allowable stresses. The maximum ratio of pipe stress to allowable stress as computed by TPIPE for this section of RCIC piping was 0.15 for equation 9E at joint number 36. The output of the TPIPE computer program provides a summary of stresses and loads and their allowable limits for the reanalyzed RCIC piping. This output is provided to you for your information.

Isometric Drawing

The colored portion of the isometric drawing shows the reanalyzed RCIC piping. Member numbers (shown within hexagons) and node numbers (shown within diamonds) correspond to the member numbers and node numbers in the TPIPE computer program output. The Velan swing check valve in the RCIC piping is identified as member number 17.

2. Summary of Stresses and Loads and Allowable Limits for the Piping and its Supports

The Support Load Tables show the results of TVA's reevaluation of all pipe supports affected by the revised Velan valve weights. These tables, one for each unit, provide a summary of stresses and loads and the allowable limits for the affected piping and supports.

SUPPORT LOAD TABLE

UNIT 1

Valve	System	Hanger No.	Old Loads Hot	Old Loads Cold	New Loads Hot	New Loads Cold	Drawing No.	Support Mfrr Size and Load Range	Rod Size and Allow. Load		Max Allowable Strl Load(lb)
75-570A	CS Pump A Min Flow	H-51A	90#	-	138#	-	47A458-87	NA	1/2"Ø	1130#	410
75-570B	CS Pump B Min Flow	H-51	90#	-	138#	-	47A458-86	NA	1/2"Ø	1130#	410
75-570C	CS Pump C Min Flow	H-31	3477#	3576#	3525#	3626#	47A458-78	Power Piping 609(2); 900-2250	1"Ø(2)	4960#	Hgr ctrls dsgn
75-570D	CS Pump D Min Flow	H-11	3477#	3576#	325#	3626#	47A458-62	Power Piping 609(2); 900-2250	1"Ø(2)	4960#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-29	414#	422#	307#	314#	47A456-65	Power Piping 605; 222-555	5/8"Ø	1810#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-30	1057#	-	1317#	-	47A456-66	NA	5/8"Ø	1810#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-31	961#	980#	1039#	1058#	47A456-67	Power Piping 608; 600-1500	3/4"Ø	2710#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-33	604#	-	754#	-	47A456-68	NA	5/8"Ø	1810#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-34	331#	335#	371#	375#	47A456-69	Power Piping 604; 159-398	1/2"Ø	1130#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	R-4	N-S 200#	-	N-S 660#	-	B-P1805-4Sh1	B-P Restraint HSSA-3	-	3000#	Does not apply
74-691	RHR Head Spray	URHRH-13	672#	826#	750#	904#	B-P 230c	B-P VS2B-9; 587-953	5/8"Ø	1810#	Hgr ctrls dsgn

SUPPORT LOAD TABLE (Continued)

UNIT 2

Valve	System	Hanger No.	Old Loads Hot	Old Loads Cold	New Loads Hot	New Loads Cold	Drawing No.	Support Mfrr Size and Load Range	Rod Size and Allow. Load		Max Allowable Strl Load(lb)
75-570A	CS Pump A Min Flow	H-51A	90#	-	138#	-	47A458-187	NA	1/2"Ø	1130#	310
75-570B	CS Pump B Min Flow	H-51	90#	-	138#	-	47A458-186	NA	5/8"Ø	1810#	Hgr ctrls dsgn
75-570C	CS Pump C Min Flow	H-38	3487#	3576#	3525#	3626#	47A458-178	Power Piping 609(2); 900-2250	7/8"Ø(2)	3770#	Hgr ctrls dsgn
75-570D	CS Pump D Min Flow	H-11	3477#	3576#	3525#	3626#	47A458-162	Power Piping 609(2); 900-2250	7/8"Ø(2)	3770#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-29	375#	383#	307#	314#	47A456-175	Power Piping 606 300-750	5/8"Ø	1810#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-30	1017#	-	1317#	-	47A456-176	NA	5/8"Ø	1810#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-31	961#	980#	1039#	1058#	47A456-177	Power Piping 608; 600-1500	3/4"Ø	2710#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-33	604#	-	754#	-	47A456-178	NA	1/2"Ø	1130#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-34	331#	335#	371#	375#	47A456-179	Grinnell B-268-5 221-378	1/2"Ø	1130#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	R-4	N-S 200#	-	N-S 660#	-	B-P1805-4Sh1	B-P Restraint HSSA-3	-	3000#	Does not apply
74-691	RHR Head Spray	DRHRH-13	672#	826#	750#	904#	B-P 230c	B-P VS2B-9; 587-953	5/8"Ø	1810#	1,425

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SUPPORT LOAD TABLE (Continued)

UNIT 3

Valve	System	Hanger No.	Old Loads Hot	Old Loads Cold	New Loads Hot	New Loads Cold	Drawing No.	Support Mfrr Size and Load Range	Rod Size and Allow. Load		Max Allowable Strl Load(lb)
75-570A	CS Pump A Min Flow					NOT VELAN VALVES					
75-570B	CS Pump B Min Flow					NOT VELAN VALVES					
75-570C	CS Pump C Min Flow					NOT VELAN VALVES					
75-570D	CS Pump D Min Flow					NOT VELAN VALVES					
71-502	RCIC Pump Suction	H-29	375#	383#	307#	314#	47A456-275	Grinnell B-268-6; 294-504	5/8"#	1810#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-30	1017#	-	1317#	-	47A456-276	NA	5/8"#	1810#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-31	561#	980#	1039#	1058#	47A456-277	Grinnell B-268-9; 700-1200	3/4"#	2710#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-33	604#	-	754#	-	47A456-278	NA	1/2"#	1130#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	H-34	331#	335#	371#	375#	47A456-279	Grinnell B-268-5 221-378	1/2"#	1130#	Hgr ctrls dsgn
71-502	RCIC Pump Suction	R-4	N-S 200#	-	N-S 660#	-	B-P1805-4Sh1	B-P Restraint HSSA-3	-	3000#	Does not apply
74-691	RHR Head Spray	CRHRR-13	672#	826#	750#	904#	B-P 230c	B-P VS2B-9 587-953	5/8"#	1810#	1,425

SUPPORT LOAD TABLES - EXPLANATORY NOTES

Valve, System, and Hanger No. - Self explanatory

Old Loads, New Loads - The original support loads are tabulated as "Old Loads." The actual support loads, based on the corrected valve weights, are tabulated as "New Loads."

Drawing No.--This column refers to applicable TVA or B-P (Bergen-Patterson) drawings.

Support Manufacturer, Size, and Load Range - The manufacturers of catalog-item supports are identified. Loading range is shown for all spring supports. For Power Piping produced supports a "2" is shown in parenthesis where two spring casings make up one spring hanger.

Rod Size and Allowable Load - The manufacturers' allowable loads for each rod hanger are shown. In addition, a snubber allowable load is shown for hanger R-4 in the RCIC System.

Maximum Allowable Structural Load - This column presents the evaluation of the structural members which support the pipe hangers. Allowable loads are based on current AISC allowable stresses and are shown whenever the structural allowable controls the support capacity.