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 AUTH. NAME AUTHOR AFFILIATION
 GRIDLEY, R. L. Tennessee Valley Authority
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SUBJECT: Interim deficiency rept re inconsistent limiter torque valve actuator weights used in seismic analysis. Initially reported on 870505. All valves affected by deficiency have been identified. Final rept on or about 1-yr before fuel load.

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

JUN 12 1987

BLRD-50-438/87-04
BLRD-50-439/87-03

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Gentlemen:

BELLEVILLE NUCLEAR PLANT (BLN) UNITS 1 AND 2 - INCONSISTENT LIMITORQUE VALVE
ACTUATOR WEIGHTS USED IN SEISMIC ANALYSIS - BLRD-50-439/87-04,
BLRD-50-439/87-03 - INTERIM REPORT

The subject deficiency was initially reported to NRC-Region II Inspector Keith Poertner on May 5, 1987, in accordance with 10 CFR 50.55(e) as CAQR BLF870016. Enclosed is our interim report. We expect to submit our final report on or about one year before fuel load. The applicability of 10 CFR 21 to this deficiency has not yet been determined; however, Babcock & Wilcox advised NRC of this problem as a potential 10 CFR 21 violation in a May 8, 1985 letter to James M. Taylor.

A delay in submittal of this report to June 12, 1987, was discussed with NRC-Region II Inspector Gordon Hunegs on June 4, 1987.

If there are any questions, please get in touch with D. L. Terrill at (205) 574-8820.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Danner
R. L. Gridley, Director
Nuclear Safety and Licensing

Enclosure
cc: see page 2

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U.S. Nuclear Regulatory Commission

cc (Enclosure):

Mr. G. G. Zech, Assistant Director
Regional Inspections
Division of TVA Projects
Office of Special Projects
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. J. A. Zwolinski, Assistant Director
for Projects
Division of TVA Projects
Office of Special Projects
U. S. Nuclear Regulatory Commission
4350 East West Highway
EWW 322
Bethesda, Maryland 20814

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

Bellefonte Resident Inspector
Bellefonte Nuclear Plant
P.O. Box 2000
Hollywood, Alabama 35752

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
INCONSISTENT LIMITORQUE VALVE ACTUATOR WEIGHTS USED IN
SEISMIC ANALYSIS
BLRD-50-438/87-04, BLRD-50-439/87-03
CAQR BLF870016
10 CFR 50.55(e)
INTERIM REPORT

Description of Deficiency

By letter No. D-5536, Babcock & Wilcox (B&W) advised TVA of discrepancies involving the weights of valves supplied under the Bellefonte Nuclear Steam Supply System (NSSS) contract which use valve actuators manufactured by Limitorque Corporation (see attached valve list). The actuator weights specified in the valve static deflection test results, valve seismic analyses, and valve drawings were not consistent. To resolve the inconsistencies, B&W obtained certified actuator weights from Limitorque. In most cases, the certified weights were greater than the weights cited in the above documents. By letter Nos. D-5607 and D-5928, B&W advised TVA that the revised actuator weights have been evaluated by the valve manufacturers and were found to have no affect on valve operability or integrity. The manufacturers' seismic analyses and valve drawings have been revised to reflect the certified actuator weights. However, the increased valve weight (and revised center of gravity) could affect the attached piping integrity (particularly during seismic loading).

The operator weight discrepancy resulted from the valve manufacturers using operator weights from Limitorque catalogs to prepare valve drawings and seismic analyses. The weights in the catalogs reflect only the weight of the base actuator. The weight of optional operator equipment (such as handwheels and other appurtenances) is not included in this value. Accordingly, the root cause of the subject deficiency was failure of the valve manufacturers to use certified actuator weights in preparing valve drawings and seismic analyses.

Interim Progress

All valves under NSSS contract affected by the deficiency have been identified. The increased weight and revised centers of gravity for the deficient valves will be incorporated into their respective piping analysis problems and reanalyzed accordingly. An investigation to determine the applicability of this problem to other safety-related valves using Limitorque operators has been initiated.

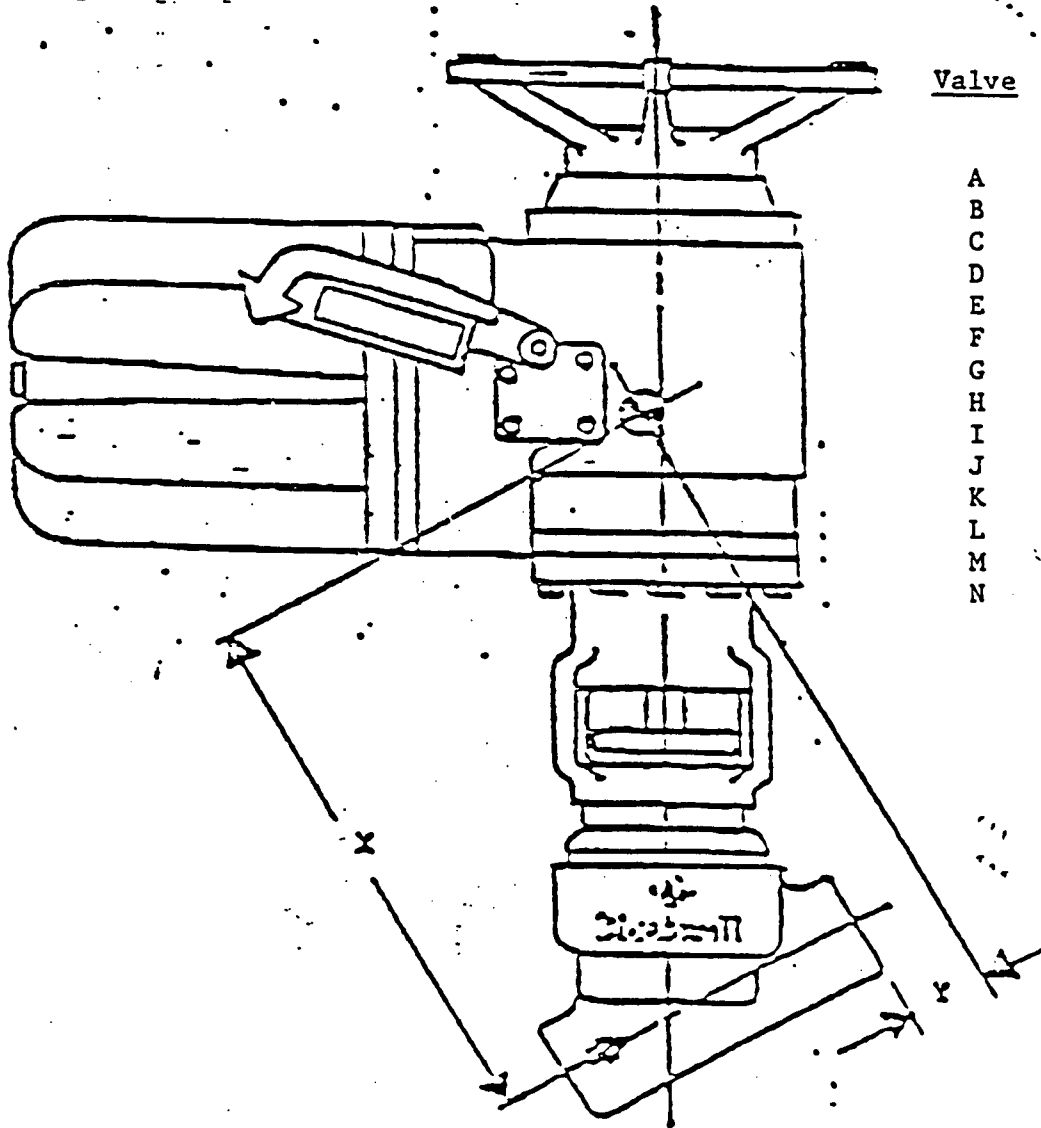
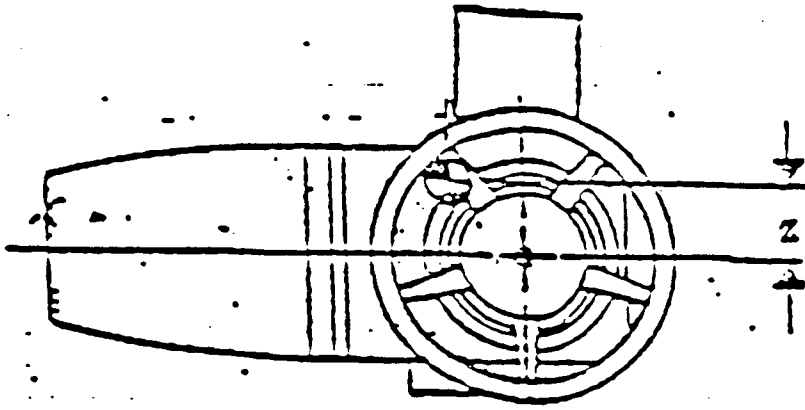
To prevent recurrence of the subject deficiency, the applicable TVA standard specifications used to procure valves will be revised by September 30, 1987 to include a requirement regarding the accuracy of the valve weight given on vendor drawings and used in vendor seismic analyses.

B&W Supplied Valves with Limitorque Operators

<u>Valve UNID No.</u>	<u>Vendor</u>	<u>Limitorque Operator No.</u>	<u>Weight Change (lbs)</u>	<u>CG Change</u>	<u>Valve Function</u>
I(2)NC-VHFA-010-A	Anchor	SMB-00-10	625 to 580	Unchanged	Pres. Spray Iso. Valve
I(2)NV-VKBB-450-A	Anchor	SMB-00-25	540 to 580	18" to 22"	Makeup Suction from BWST
I(2)NV-VKBB-419-B	Anchor	SMB-00-25	540 to 580	18" to 22"	Makeup Suction from BWST
I(2)NV-VHFA-101-A	Anchor	SMB-00-7.5	325 to 420	11.5" to 21"	Makeup/HPI Valve
I(2)NV-VHFA-113-A	Anchor	SMB-00-7.5	325 to 420	11.5" to 21"	Makeup/HPI Valve
I(2)NV-VHFA-213-B	Anchor	SMB-00-7.5	325 to 420	11.5" to 21"	Makeup/HPI Valve
I(2)NV-VHFA-225-B	Anchor	SMB-00-7.5	325 to 420	11.5" to 21"	Makeup/HPI Valve
I(2)ND-VKAB-010-A	Anchor	SB-005-15	2200 to 2050	Unchanged	DH Pump Suction from BWST
I(2)ND-VKAB-104-B	Anchor	SB-005-15	2200 to 2050	Unchanged	DH Pump Suction from BWST
I(2)ND-VKAB-09B-A	Anchor	SMB-00-10	2200 to 1975	24.5" to 23"	DH Pump Suction from RB Sump
I(2)ND-VKAB-192-B	Anchor	SMB-00-10	2200 to 1975	24.5" to 23"	DH Pump Suction from RB Sump
I(2)NL-VHDB-065	Rockwell	SMB-000-2	118 to 204	A**	Core Flood Bleed and Sample
I(2)NL-VHDB-066	Rockwell	SMB-000-2	118 to 204	B**	Core Flood Bleed and Sample
I(2)NL-VHDB-062-B	Rockwell	SMB-000-2	118 to 204	C**	Core Flood Vent Valve
I(2)NL-VHDB-064-A	Rockwell	SMB-000-2	118 to 204	D**	Core Flood Vent Valve
I(2)NV-VKFA-022-B	Rockwell	SMB-00-10	250 to 300	E**	Makeup Letdown Cooler Inlet
I(2)NV-VKFA-029-B	Rockwell	SMB-00-10	250 to 300	F**	Makeup Letdown Cooler Inlet
I(2)NV-VKFA-026-B	Rockwell	SMB-00-25	250 to 300	G**	Makeup Letdown Cooler Iso.
I(2)NV-VKFA-033-B	Rockwell	SMB-00-25	250 to 300	H**	Makeup Letdown Cooler Iso.
I(2)NV-VHFB-062-B	Rockwell	SMB-000-5	118 to 204	I**	Control Shutoff Bleed Valve
I(2)NV-VHFB-065-B	Rockwell	SMB-000-5	118 to 204	J**	Control Shutoff Bleed Valve
I(2)NV-VHFB-068-B	Rockwell	SMB-000-5	118 to 204	K**	Control Shutoff Bleed Valve
I(2)NV-VHFB-071-B	Rockwell	SMB-000-5	118 to 204	L**	Control Shutoff Bleed Valve
I(2)NV-VHFB-077-A	Rockwell	SMB-00-25	250 to 315	M**	Makeup Pump Recirc. Valve
I(2)NV-VHFB-411-B	Rockwell	SMB-00-25	250 to 315	N**	Makeup Pump Recirc. Valve
I(2)NV-VYAB-347	Copes	SMB-000-2	285 to 300	14" to 16.75"	Purification Bypass to Bleed Valve

*Distance measured from center of valve opening.

**See continuation sheet for Rockwell CG orientation.



Valve	Old CG (in.)		New CG (in.)		
	x	y	x	y	z
A	13.11	3.22	13.9	2.0	1.9
B	13.11	3.22	13.9	2.0	1.9
C	13.11	3.22	13.9	2.0	1.9
D	13.11	3.22	13.9	2.0	1.9
E	13.37	3.53	13.7	3.2	0.7
F	13.37	3.53	13.7	3.2	0.7
G	13.37	3.53	13.7	3.2	0.7
H	13.37	3.53	13.7	3.2	0.7
I	13.11	3.22	13.9	2.0	1.9
J	13.11	3.22	13.9	2.0	1.9
K	13.11	3.22	13.9	2.0	1.9
L	13.11	3.22	13.9	2.0	1.9
M	13.37	3.53	13.8	3.3	1.3
N	13.37	3.53	13.8	3.3	1.3