

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE
37401



June 12, 1974

Mr. Voss A. Moore, Assistant Director
for Light Water Reactors, Group 2
Directorate of Licensing
Office of Regulation
U.S. Atomic Energy Commission
Washington, DC 20545



Dear Mr. Moore:

In the Matter of the) Docket Nos. 50-259
Tennessee Valley Authority) 50-260
50-296

Your letter dated May 17, 1974, concerning the 600 psig ASA-rated one-inch Hancock valves at the Browns Ferry Nuclear Plant required a final report on the survey and recertification results for the unit 3 valves and, if necessary, a reanalysis for unit 1. Forty copies of that report are submitted herewith.

This report, together with the report on the unit 2 valves, dated May 31, 1974, which was enclosed with our letter dated June 3, 1974, constitutes the documentation required by 10 CFR 50.55(e).

Very truly yours,

J. E. Gilleland
J. E. Gilleland
Assistant to the Manager of Power

Enclosure (40)

CC: Mr. R. R. Barris
General Electric Company
832 Georgia Avenue
Chattanooga, Tennessee 37402

Mr. Norman C. Moseley, Director (enc)
Attention: W. S. Little
Directorate of Regulatory Operations
U.S. Atomic Energy Commission
Region II - Suite 818
230 Peachtree Street, NW.
Atlanta, Georgia 30303

Mr. R. B. Beers
TVA Projects
General Electric Company
Atomic Power Equipment Department Knoxville, Tennessee 37919
San Jose, California 95125

Mr. K. L. Sessions
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9040 Executive Park Drive
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Report Date: June 11, 1974

BROWNS FERRY NUCLEAR PLANT UNIT 3
FINAL REPORT ON HANCOCK 600 LB. STAINLESS STEEL VALVES

Introduction

TVA Abnormal Occurrence Report No. BFAO-7427W describes the occurrence and corrective action taken concerning the fifty-eight Hancock one-inch 600 lb. forged stainless steel globe valves installed in high pressure systems in unit 1. TVA final report dated May 31, 1974, on the one-inch valves of unit 2 and the 3/4-inch valves installed in units 1 and 2 includes a valve wall verification of 50% of the affected valves as well as vendor certification that these valves are suitable for design conditions of 1326 psi at 562°F.

A report including wall thickness verification on the remaining accessible valves already installed in unit 3 as well as those valves that are to be installed in the future follows.

VALVE WALL THICKNESS MEASUREMENTS

Submitted in Appendix A of this report is a tabulation of the wall thickness measurements of all of the accessible one-inch valves that have been installed in unit 3. Since this unit is still in the construction phase, these valves have not yet been assigned permanent valve marker tags. The description and location of the thickness measurements is presented in Appendix B of this report. Based on the sampling of the unit 1 valves in TVA Abnormal Occurrence Report No. BFAO-7427W, only two measurements were taken (P2 and P4 positions).

Submitted in Appendix C of this report is a tabulation of the wall thickness measurements of the remaining valves that will be installed in unit 3 or will be utilized as spares. No 3/4-inch valves are presently available for installation in unit 3.

The minimum wall thickness measurement of these valves is equal to or greater than 0.287 inches. Assuming 0.015 inch as an absolute maximum depth of marking, the minimum wall thickness is: $0.287" - 0.015" = 0.272"$ which is in excess of the calculated required minimum wall thickness of $t_m = 0.243"$ (reference sheet 2 of Appendix D, TVA report No. BFOA 7427W).

Conclusions

Based on the data presented in this report and the calculations presented in TVA report No. BFOA 7427W, TVA takes the position that these valves are fully qualified for the higher design conditions in unit 3 and request acceptance of this position by the AEC. The data presented in this report and the above referenced reports on units 1 and 2 completes TVA's reporting requirements.

New tags are being ordered from the manufacturer which will be marked 1326 psi at 562°F. These tags will be attached to all valves in units 2 and 3 as soon as possible, and on unit 1 as the valves become accessible.

Appendix A

Wall Thickness Measurements
of all Accessible Valves in
Unit 3.

VALVE IDENTIFICATION	P ₂ (INCHES)	P ₄ (INCHES)	VALVE IDENTIFICATION	P ₂ (INCHES)	P ₄ (INCHES)
47W600-18	.358	.358	47W600-18	.374	.335
	.362	.343		.374	.351
	.358	.351		.366	.347
	.366	.335		.382	.358
	.374	.358		.355	.362
	.362	.358		.362	.323
	.370	.347		.362	.351
	.362	.335		.366	.362
	.366	.335		.374	.362
	.362	.351		.366	.339
	.378	.355		.370	.358
	.378	.370		.374	.362
	.390	.355		.362	.355
	.374	.355			
	.355	.362			
	.374	.351			
	.370	.355			
	.366	.335			
	.370	.347			
	.370	.362			
	.360	.355			
	.374	.351			
	.390	.343			
	.397	.358			
	.390	.355			
	.386	.347			
	.394	.362			
	.374	.351			
	.362	.339			
	.362	.351			
	.378	.366			
	.366	.355			

Appendix B

Description and Location of
Valve Wall Measurements

5-9-74

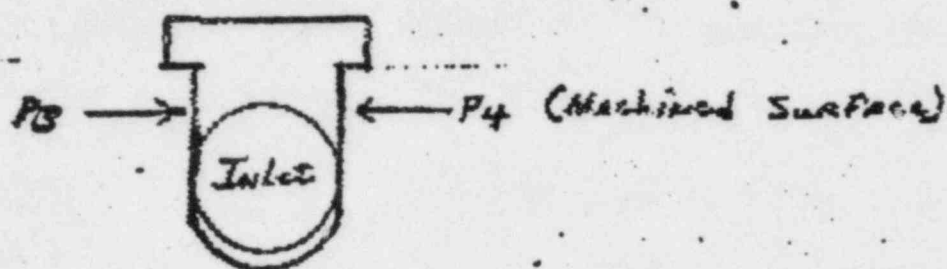
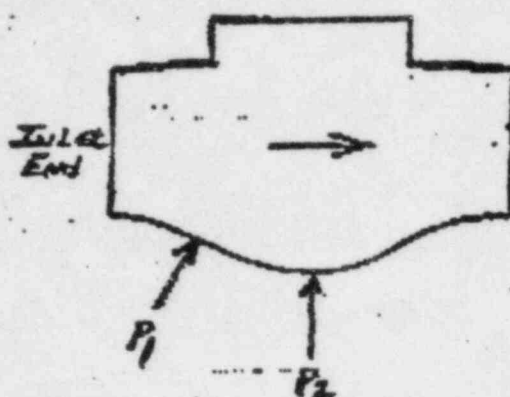
TENNESSEE VALLEY AUTHORITY

THICKNESS MEASUREMENT RECORD
ULTRASONIC METHOD

Part identification INST. VALVE 5500W-18
 Manufacturer DRESSER
 Reference code or standard G-29 P.S.S.M.-1-1(b)
 Minimum design thickness Body Weld End
 (b) Material type (CS, SS, etc.) & P No. SS
 Product form (casting, forging, etc.) FORGED
 Equipment make and model KRAUTKRAMER D-METER
 Probe type and size KMR-4, 1/8" dia.
 Frequency 4 MHz
 Calibration step thickness range .200" thru .400
 Couplant type KRAUTKRAMER PASTE
 Special equipment attachments NONE

Measurement location:

		Valves			Pumps			Pipe
		Body	Neck	Weld End	Body	Neck	Weld End	
0°	1							
	2							
90°	1							
	2							
180°	1							
	2							
270°	1							



	Acc.	UT	Corr. Factor
P_1	.384	10.1 mm = .398"	.965
P_2	.330	9.1 mm = .359"	.919
P_3	.320	8.9 mm = .351"	.912
P_4	.292	8.4 mm = .329"	.888

Appendix C

Wall Thickness Measurement of
all remaining valves to be Installed
in Unit 3.

47W600-18

P_{12} (ZIMMER)	P_{12} (ZIMMER)
.348	.311
.340	.318
.351	.315
.344	.315
.333	.322
.344	.297
.351	.301
.340	.311
.340	.315
.348	.297
.322	.301
.330	.305
.340	.315
.333	.318
.337	.315
.348	.297
.351	.311
.333	.311
.330	.305
.351	.287
.340	.297
.333	.297
.344	.305
.344	.318
.333	.311
.330	.322
.333	.311
.348	.311
.330	.318
.348	.308
.348	.290
.351	.287

VALUE IDENTIFICATION

47W600-18

[illegible]