

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
REGION IV

Report No. 99900080/80-02

Program No. 51300

Company: Copes Vulcan Incorporated  
Post Office Box 577  
Lake City, Pennsylvania 16423

Inspection Conducted: October 27-29, 1980

Inspector: *J. Barnes* 11-21-80  
*for* R. E. Oiler, Contractor Inspector  
Components Section II  
Vendor Inspection Branch  
Date

Approved by: *J. Barnes* 11-21-80  
I. Barnes, Chief  
Components Section II  
Vendor Inspection Branch  
Date

Summary

Inspection on October 27-29, 1980 (99900080/80-02)

Areas Inspected: Implementation of 10 CFR 50, Appendix B, and other NRC requirements with respect to followup on a 10 CFR 50.55(e) Report by TVA concerning weight discrepancies in valves for Sequoyah Units 1 and 2. The inspection involved 14 inspector-hours on site.

Results: In the area inspected, no noncompliance items, deviations or unresolved items were identified.

DETAILS SECTIONA. Persons Contacted

- \*P. Peoples, President
- \*J. Baker, Vice President - Engineering
  - J. Clifford, Sales Engineer
- \*R. Lawson, Director - Engineering
  - N. Mattson, Manager - Contract Engineering - Valves
- \*D. Mays, Manager - Quality Control

\*Attended the Exit Meeting.

B. Followup on 10 CFR 50.55(e) Report by TVA, Concerning Two (2) Air Operated Copes Vulcan Valves Furnished by Westinghouse For Sequoyah Units 1 and 21. Introduction

On January 1, 1980, by telephone report and on February 11, 1980, by written report, the NRC was notified by Tennessee Valley Authority pursuant to 10 CFR 50.55(e) that two (2) air operated Copes Vulcan valves (Unit Tag No. 2-IA78 RE Location 9967 and 9985) were supplied by Westinghouse for Sequoyah Units 1 and 2. The valve weights were specified on the Copes Vulcan drawings as 240 pounds, whereas the actual weight was approximately 405 pounds. The erroneous valve weight could therefore have resulted in installed supports which could be inadequate to perform their required safety functions. Corrective action was accomplished by rerun of the piping system load analysis using the correct valve weight. The resulting new loads were then applied in support calculations and the existing supports were found to be adequate.

A prior NRC followup inspection of this matter was performed by the Vendor Inspection Branch in August, 1980. It was later determined that additional information was needed concerning other CVI customer valve contracts specifications requirements for valve weight criteria and potential valve weight discrepancies.

2. Objectives

The objectives of this inspection were to ascertain whether or not valve weight criteria for other CVI customers were specified, and whether or not CVI met the requirements; also to determine if potential valve weight discrepancies, similar to those for Westinghouse Sequoyah valves, could exist.

3. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Discussions with cognizant CVI personnel.
- b. Review of CVI's Nuclear Contract Log Book for the period of 1969 through October, 1980, to identify nuclear valve customer's contracts.
- c. Review of the following five (5) nuclear valve purchase specifications and related CVI valve assembly drawings, to determine what requirements for valve weights, if any, were imposed on CVI, and what valve weights were supplied by CVI.

(1) CVI Contract No. 95327

(a) Specification:

Bechtel Specification No. 7220-J-255(Q), Revision 0, dated 12/14/73, Design Specification For Purchase of Nuclear Service Valves For Midland Units 1 and 2.

(b) CVI Drawings For Midland 1 and 2

- (1) No. B-170032, Revision 5, Model D-100-60 Actuator, 1" Class 1500 Standard Valve Assembly, ASME Code Class 2. (Total dry weight is 200 lbs. Approximately).
- (2) No. B-170031, Revision 5, Model D-100-60 Actuator, 2" Class 150 ASME Standard Valve Assembly, ASME Code Class 3. (Total dry weight is 350 lbs. Approximately).

(2) CVI Contract No. 95225

(a) Specification

Babcock & Wilcox Specification No. 08-114000001-06, for contract 620-0017, dated 12-1-71, "Control Valves For Auxiliary System Service, North Anna Unit 3," Virginia Electric & Power Company.

(b) CVI Drawing For North Anna Unit 3

- (1) NO. L-163986, Revision 4, Model D-100-60 Actuator, 1½" -1500 lb. ANSI standard valve, dated 3-12-73 ASME Class 3 (Total dry weight is 350 lbs. ± 10%).

- (2) No. L-163988, Revision 6, dated 3-12-73, Model D-100-100 Actuator, 2" -1500 lb., ANSI Standard Valve Assembly, ASME Class 2 (Total dry weight is 390 lbs.  $\pm$  10%).
- (3) No. L-163985, Revision 3, dated 3-12-73, Model D-100-60 Actuator, 2½" -150 lb. ANSI Standard Valve Assembly, ASME Class 3 (Total dry weight is 230 lbs.  $\pm$  10%).
- (3) CVI Contract No. 95096
- (a) Specification
- Stone & Webster Specification, revised 6-15-80, for Main Steam Atmospheric Dump Valves, Beaver Valley No. 1, Duquesne Light Company.
- (b) CVI Drawing For Beaver Valley No. 1
- No. B-145770, Revision 2, Model D-100-160-3 Actuator, 6" - 600 lbs. ANSI Standard Valve Assembly, Tandem Trim. (Approximate total valve weight is 700 lbs.)
- (4) CVI Contract No. 95325
- (a) Specification
- Combustion Engineering Specification No. 13172-PE-703, Steam Dump and Turbine Bypass Valves, St. Lucie Unit No. 2.
- (b) CVI Drawing For St. Lucie No. 2
- No. B-166439, Revision 9, Model D-100-160 Actuator, 10" Class 600, ANSI Standard Valve Assembly, Tandem Trim. (Approximate total valve weight is 2000 lbs.)
- (5) CVI Contract No. 95358
- (a) Specification
- Stone & Webster No. 5H1-318, Revision 0, dated 2-12-75, for Air Operated Control Valves, ASME Section III, Class 2 and 3, Shoreham Unit No. 1, Long Island Lighting Company.

b. CVI Drawings For Shoreham No. 1

- (1) No. E-175701, Revision 2, Model D-100-60 Actuator, 3" Class 1500 Valve Assembly, ASME III, Class 3 (Dry weight for valve and actuator is 350 lbs.)
- (2) No. E-174780, Revision 2, dated 6-4-76, Model D-100-160 Actuator, 8" Class 900 Valve Assembly, ASME Section III, Class 2. (Dry weight for valve and actuator is 1285 lbs.)
- (3) No. E-175695, Revision 2, dated 6-4-76, Model D-100-160 Actuator, 4" Class 900 Valve Assembly, ASME Section III, Class 3 (Dry weight for valve and actuator is 575 lbs.)

3. Findings

a. Within this area of the inspection, no noncompliance items, deviations or unresolved items were identified.

b. Other Findings - Comments

As a result of review of records and discussions with cognizant CVI personnel, the following information was obtained:

- (1) The five contract specifications reviewed were selected by first reviewing CVI's Nuclear Valve Contract Log Book for the period of 1969 through October, 1980. All Westinghouse (W) contracts were excluded, as the previous NRC inspection had established that W was aware of the valve weight discrepancy condition and was pursuing the matter.
- (2) The five specifications were selected at random to be reviewed for evidence of valve weight requirements. In two cases, estimated valve weights were required in the Bid Request document, but not in the awarded purchase specification. In another case, the valve specification contained valve data sheets which listed the approximate required valve weights. The other two specifications did not specify the valve weight requirements. The CVI Director - Engineering indicated that these requirements could have been received verbally or by documented means other than in the specification, and that these records were not retained.
- (3) Review of the CVI valve assembly drawings for valves furnished in the above five contracts verified that, in all cases, CVI had furnished total calculated valve weights and total valve centers of gravity to either approximate or  $\pm 10\%$  weights, and thus had met their customer requirements.

- (4) With regard to CVI nuclear valve customers other than W, Gilbert Associates, and Florida Power & Light identified in the previous NRC Inspection Report No. 99900080/80-01, the CVI Director - Engineering indicated that CVI had not received any requests for recalculated valve weights. He also indicated that CVI had not notified previous customers of the potential for valve weight discrepancies as W had not indicated that this condition was a reportable item. This matter was discussed in the exit meeting.
- (5) The results of this inspection indicate that the same CVI calculational techniques, which predicted a significantly different weight from actual for the two TVA Sequoyah Unit 1 and 2 valves, were used for the five contracts covered by this inspection. It would thus appear, that a potential exists for discrepancies between actual CVI valve weights and the valves furnished to their customers, for all nuclear contracts shipped prior to the CVI and W discussion of the condition early in 1980.

C. Exit Interview

1. The NRC inspector met with CVI management personnel denoted in paragraph A, at the conclusion of the inspection on October 28, 1980.
2. The following subjects were discussed:
  - a. Area of inspection.
  - b. The inspection findings identified in the report.
3. The inspector indicated that CVI should consider the possible need for CVI to notify all of their previous customers of the potential for valve weight discrepancies, excluding these customers who had contacted CVI on this matter.
4. CVI's management questions related to clarification of the above matters.