

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

Report No. 99900346/80-01

Program No. 51300

Company: Velan Valve Corporation
Avenue C, Griswold Industrial Park
Williston, Vermont 05495

Inspection Conducted: June 3-5, 1980

Inspectors: *Wm. D. Kelley* 06/27/80
Wm. D. Kelley, Contractor Inspector Date
Components Section I
Vendor Inspection Branch

Approved by: *D. E. Whitesell* 06/29/80
D. E. Whitesell, Chief Date
Components Section I
Vendor Inspection Branch

Summary

Inspection on June 3-5, 1980 (99900346/80-01)

Areas Inspected: Implementation of 10 CFR 50, Appendix B and applicable codes and standards including, design and document control - design input; procurement source selection; control of special processes - joint fitup and welding, - welding procedure specification; inspection and test - ultrasonic examination; audit - external, vendors; and manufacturing process control - welding material control; also performed a review of vendor's activities and vendor's action on previous identified findings and conducted a exit interview.

The inspection involved eighteen (18) inspector-hours on site by one (1) NRC inspector.

Results: In the nine (9) areas inspected, no deviations or unresolved items were identified in eight (8) areas. The following were identified in the remaining one (1) area.

Deviations: Control Special Procedures - Welding Procedure Specification

- A. Contrary to Criterion V of Appendix B to 10 CFR 50, paragraph NCA-4134.5 of Section III to the ASME Code, and VVS welding procedure specification WPS Number SM 8850, Revision 1 the VVC Welding Procedure Qualification Test record SM-513 states that the test coupon was not welded within the WPS specified ampere range.

- B. Contrary to Criterion V of Appendix B to 10 CFR 50, paragraph NCA-4134.5 of Section III and paragraphs QW-251.2 and QW-404.4 of Section LX of the ASME Code, and VVC welding procedure specification WPS Number GT-8660, Revision 0 the VVC Welding Procedure Qualification Records VEL-P-597 states the Filler Metal Group Number was F-5 and the Weld Metal Analysis Number was A-7.

DETAILS SECTIONA. Persons ContactedVelan Valve Corporation (VVC)

- *E. I. Francois - Corporate Manager of Quality Assurance
- M. Huck - Welding Engineer
- L. West - Purchasing Agent

Truton (U.S.) Ltd.

R. Pfannenstiel - Area Manager

Kemper Insurance Co.

G. P. Odom - Authorized Nuclear Inspector (NB Number 6986)

*Denotes those persons who attended the Exit Interview (See paragraph K).

B. General Review of Vendor's Activities

1. The VVC - Williston Vermont plant
2. VCC's contribution to the nuclear industry represents approximately seventy percent (70%) of its total workload.

C. Vendor's Action on Previous Identified Findings

(Closed) Unresolved Item (Report 99900346/79-02) Inspection and Test - Magnetic Particle Examination; the verification of the contact method of the magnetic particle examination procedure with the authorized nuclear inspector's acceptance was not available at the VVC plant.

The inspector verified that the magnetic particle procedure qualification record had been accepted by the authorized nuclear inspector.

D. Design and Document Control-Design Input1. Objectives

The objectives of this area of the inspection were to verify that:

- a. Procedures had been prepared and approved by the vendor to prescribe a system for the control of the design inputs which are consistent with NRC rules and regulations and the vendor's commitments in the ASME accepted Quality Assurance Program.

- b. The design input procedures are properly and effectively implemented.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by review of the ASME accepted Quality Assurance Manual, Revision 2, procedure VELW-QC-156.1, "Design Control."

3. Findings

The inspector verified that the VCC engineering design functions are performed at the Corporate Head Offices, Velan Engineering Limited, Montreal, Quebec, Canada. (See NRC, IE, RIV Report 99900061/80-01)

- E. Procurement Source Selection

1. Objectives

The objectives of this area of the inspection were to verify:

- a. Procedures had been prepared and approved by the vendor to prescribe a system for procurement source selection, bid evaluation and contract award in accordance with NRC rules and regulations and the ASME accepted Quality Assurance Program.
- b. The procurement source selection, bid evaluation, and contract award procedures are implemented.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, Revision 2, procedure VELW-QC-156.1, "Procurement Controls and Receiving Inspection Materials, Parts and Services," to verify that the vendor had established procedures for procurement source selection, bid evaluation, and award of contract.
- b. Review of the document referenced in paragraph a. and WLP4.5 "Velan Training and Indoctrination Program - Purchasing Personnel" to verify that procurement source selection, bid evaluation and contract award procedures were prepared by the designated authority, approved by management, and reviewed by QA.

- c. Review of the procurement source selection procedure and verified it provided for integrated action and evaluation of supplier's history.
- d. Review of the bid evaluation and contract award procedure and verified it provided for:
 - (1) measures to assure the supplier's bid conforms to the procurement document,
 - (2) bid evaluations were made by designated individual, and
 - (3) resolution of unacceptable conditions.
- e. Review of six sets of procurement source selection, bid evaluation and contract award documents to determine the procedures and procurement documents were available to the person responsible for the quality affecting activity and the vendor procedures are being properly and effectively implemented.

3. Findings

- a. The inspector verified that:
 - (1) Procedures had been prepared and approved by the vendor to prescribe a system for procurement source selection, bid evaluation and contract award in accordance with NRC rules and regulations and the vendor's commitments in the ASME accepted Quality Assurance Program.
 - (2) The procurement source selection, bid evaluation and contract award procedures were implemented.
- b. The inspector noted that all of the "on-the-job" training of purchasing agent had not been recorded. The inspector was presented with Internal Audit Findings Number W80-14 dated March 27, 1980 where this deficiency was noted and corrective action had been initiated and verification completed.
- c. Within this area of the inspection no deviations or unresolved items were identified.

F. Control of Special Processes Joint Fitup and Welding

1. Objective

The objective of this area of the inspection was to verify that the production welding was controlled in accordance with the applicable

NRC rules and regulations and the vendor's commitments in the ASME accepted Quality Assurance Program.

2. Method of Accomplishment

The objective of this area of the inspection was accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, Revision 2, procedure VELW-QC-156.7 "Welding - Quality Assurance" to verify that welding is included in the quality assurance program.
- b. Review of Selective Routing Sheets to verify work was performed in the established sequence in accordance with the referenced procedures and specifications and established hold points provided for production and quality control signoffs.
- c. Review of selective welding procedure specifications, drawings at the work stations to verify they were readily available.
- d. Review of selective Filler Metal Requisitions to verify that the welding filler metals are of the type and grade, had been properly inspected, and identified and traceable to certification.
- e. Visual observations in shop to verify that:
 - (1) Weld joint geometry was as specified and surfaces to be welded had been prepared, cleaned and inspected in accordance with applicable procedures.
 - (2) Parts to be welded were assembled and held within specified gap and alignment.
 - (3) Temporary attachments (if used) had been attached by qualified welders in accordance with qualified welding procedure specifications.
- f. Interviews with personnel to verify they were knowledgeable of the procedures applicable to weld joint fitup and welding.

3. Findings

- a. The inspector verified that the production welding was controlled in accordance with the applicable NRC rules and regulations and the vendors commitment in the ASME accepted Quality Assurance Program.

- b. Within this area of the inspection no deviations or unresolved items were identified.

G. Control of Special Processes-Welding Procedure Specification

1. Objective

The objective of this area of the inspection was to determine if the welding procedure specifications used by the vendor in production welding had been prepared, qualified and controlled in accordance with the applicable NRC regulation and the vendor's commitments in the ASME accepted Quality Assurance Program.

2. Method of Accomplishment

The objective of this area of the inspection was accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, Revision 2; Procedure VELW-QC-156.7 "Welding Quality Assurance," to verify whether the vendor had established procedures for the preparation, qualification, certification, distribution, and revision of welding procedure specifications (WPS).

- b. Review of Welding procedures;

- (1) WPS No. GT-0860, Revision 1, "GTAW Hardsurfacing of RCo CrA Material on Stainless Steel,"
- (2) WPS No. SM-8850, Revision 1, "Manual SMAW of Austenitic Stainless Steel,"
- (3) WPS No. GT-8860, Revision 0, "Manual GTAW of Austenitic Stainless Steel," and
- (4) WPS No. SM-1050, Revision 1, "SMAW Corrosion Resistant Overlay of S/S on C/S;"

to verify that all essential variables, supplementary essential variables and nonessential variables are in accordance with the applicable Sections of the ASME Code.

- c. Review of welding procedure qualification test Certification listed in paragraph b. to verify that:

- (1) The procedures had been qualified in accordance with Section IX of the ASME Code and the supporting procedure qualification of records were on file.

- (2) The procedure qualification records had been certified by the vendor and the mechanical test results meet or exceed the minimum ASME Code requirements.
 - (3) The procedure qualification record list the essential variables for the specific welding processes and the values and ranges of the variables are consistent within the limits of Section IX of the ASME Code.
- d. Review of the Welding Procedure Specifications and Procedure Qualification Records listed in paragraphs b. and c. above to verify that:
- (1) All mechanical tests, required by Sections III and IX of the ASME Code, had been completed and are properly documented in the procedure qualification records.
 - (2) Changes and/or revisions of essential variables in any welding procedure specification, is supported by requalification documents.
 - (3) Changes in the nonessential variables of the welding procedure specification are properly identified and documented.
- f. Observation in the shop to verify that the welding procedure specifications are available to the welders and the specifications are properly followed.
- g. Interviews with personnel to verify they are knowledgeable in the procedures applicable to welding.

3. Findings

- a. The inspector verified that the welding procedure specifications used by the vendor in production welding had been prepared and controlled in accordance with the applicable NRC regulations and the vendors commitments the ASME accepted Quality Assurance Program, however in reviewing the Required Qualification Records (PQR) the following items were noted:
- (1) Welding Procedure Specification No. SM-8850 Revision 1 states that the amperage range for the 1/8 inch SFA 5.4 electrodes shall be 90 to 125 amperes; however, the Procedure Qualification record SM-513 states the range used for qualification was 100 to 140 ampere.

(2) Welding procedure specification WSP No. GT 8860, Revision 0, states that the filler metal shall be Filler Metal Group Number F-6 and Weld Metal Analysis Number A-7; however, "Record of Welding Procedure Qualification Tests" VEL-P-597 states that the Filler Metal Group Number was F-5 and the Weld Metal Analysis Number was A-7.

- b. Deviation - See enclosure Notice of Deviation, Item A, B.
- c. Within this area of the inspection there were no unresolved items.

H. Inspection and Test-Ultrasonic Examination

1. Objectives

The objectives of this area of the inspection were to ascertain that:

- a. The ultrasonic examination procedures used by the vendor meets NRC rules and regulations, and the vendor's commitments in the ASME accepted Quality Assurance Program.
- b. The ultrasonic examinations are performed by qualified personnel using qualified procedures.

2. Method of Accomplishment

- a. Review of the ASME accepted Quality Assurance Manual, Revision 2, procedure VELW-QC-156.16 "Performance of NDE and the Control and Administration of NDE Personnel" to verify that procedures had been established for ultrasonic examination.
- b. Review of the following Truton (U.S) Ltd procedures;
 - (1) Nondestructive Testing Procedure T-76-14, Revision 0, "Procedure for Verifying the Linearity of Ultrasonic Testing Systems," and
 - (2) END/NDE Procedure T77-32, Revision 0, "Ultrasonic inspection of Forgings."

to verify that they have been approved and qualified in accordance with the ASME Code requirements and the accepted Quality Assurance Program. Also to verify that they had been accepted by the Authorized Inspector (ANI).

- c. Review of the procedures listed in paragraph b., to verify that the type of equipment, the extent of coverage, the scanning technique, the calibration requirements, the size and frequency of search units, the distance amplitude curve or electronic

distance - amplitude correction and transfer mechanism, the scanning gain setting, the acceptance levels or limits for evaluation and recording of indications, and the method of recording significant indications are specified.

- d. Interviews with personnel to verify they are knowledgeable in the procedures applicable to ultrasonic examination.

3. Findings

- a. The nondestructive testing at VVC plant is performed by a vendor that has been surveyed and placed on the approved vendors list in accordance with the ASME accepted Quality Assurance Program.
- b. The inspector determined that the ultrasonic procedures are in accordance with the NRC rules and regulations and ASME Code requirements.
- c. The inspector verified that the ultrasonic examinations were performed by qualified personnel in accordance with qualified procedures.
- d. Within this area of the inspection no deviations or unresolved items were identified.

I. Audits (External - Vendors)

1. Objectives

The objectives of this area of the inspection were to verify that:

- a. Procedures had been prepared and approved by the vendor that prescribed a system for auditing vendors which is consistent with NRC rules and regulations and the vendor's commitments in the ASME accepted Quality Assurance Program.
- b. The vendor audit procedures are properly and effectively implemented.

2. Method of Accomplishment

The objectives of this area of the inspection were accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual, Revision 2;
 - (1) Procedure No. VELW-QC-156.14, "Indoctrination and Training of Quality Related Personnel", and
 - (2) Procedure No. VELW-QC-156.17, "Audits";

to verify that procedures had been established to prescribe a system for auditing, which is consistent with NRC rules and regulations.

- b. Review the procedures referenced in paragraph a., to verify that they had been prepared by the designated authority, approved by management, and reviewed by QA.
- c. Review of Procedure No. VELW-QC-156.17, to verify that it identifies the organizations responsible for auditing, and their responsibilities; establishes audit personnel qualifications and training, and that the audits are performed by qualified personnel. Also, to verify that the essential elements of the audit system is established.
- d. Review of vendor audit schedules to assure that the audits of the vendor's quality activities during design, procurement and manufacture are planned, documented, and conducted in the prescribed manner, and assures coverage of all aspects of the QA program.
- e. Review of vendor audit reports to verify that they include provisions for written plans, team selection, team orientation, audit notifications, pre-audit conferences, audit performances, and post-audit conferences.
- f. Review of vendor audit reports to verify that they are properly distributed to management and the audited vendor organization; and the follow-up audits to verify corrective action is required.
- g. Review of six (6) selective vendor audit reports to verify the applicable procedures were available to the audit team personnel, and that the audit procedures were properly and effectively implemented.

3. Findings

- a. The inspector verified that:
 - (1) Procedures had been prepared and approved by the vendor that prescribed a system for auditing vendors which is consistent with NRC rules and regulations and the vendor's commitments in the ASME accepted Quality Assurance Manual.
 - (2) The vendor audit procedures were being properly and

- b. The inspector noted that the "Response-Action Taken" section of Internal Audit Findings Report Number M79-18 had not been signed by the responsible person; however, the corrective action had been implemented and recommendations made to prevent recurrence and the "Response Acceptable", "Verification/Follow-up" and "Finding Closed" sections had been completed, signed-off and dated.

The inspector verified by review of all internal audit findings for 1980 that this was the only signature oversight and he responsible party signed the report in the inspectors presence. Item closed.

J. Manufacturing Process Control-Welding Material Control

1. Objective

The objective of this area of the inspection was to verify that welding material is identified and controlled until it is consumed in the welding process in accordance with the applicable NRC rules and Regulations and the vendors commitments in the ASME accepted Quality Assurance Program.

2. Method of Accomplishment

The objective of this area of the inspection was accomplished by:

- a. Review of the ASME accepted Quality Assurance Manual Revision 2 procedure VELW-QC-156.7 "Welding-Quality Assurance" to verify that procedures had been established for purchasing, receiving, distribution and handling of welding materials.
- b. Review of welding records and parts being welded, to verify that distribution of the welding material is being controlled in accordance with approved procedures, and that unused welding materials are scrapped, or recycled, in accordance with the procedures.
- c. Observation in the shop welding area and storage area, to verify that:
- (1) Welding materials are clearly identified at all times in accordance with the approved procedures, and that the identification of acceptable materials was being maintained through-out the storage and manufacturing operations, until the material is consumed in the welding process.
 - (2) Welding material requiring environmental control is held at the appropriate storage, and/or baking temperatures, for the time specified in the procedure.

- d. Interviews with personnel to verify they are knowledgeable of the vendor's procedures applicable to Welding Material Control.

3. Findings

- a. The inspector verified that welding material is identified and controlled until it is consumed in the welding process in accordance with NRC regulations and the vendor's commitment in the ASME accepted Quality Assurance Program.
- b. Within this area of the inspection no deviations or unresolved items were identified.

K. Exit Interview

At the conclusion of the inspection on June 5, 1980, the inspector met with the company's management, identified in paragraph A, for the purpose of informing him as to the results of the inspection. During this meeting each identified deviation was discussed and the evidence which supported the findings were identified.

The company's management acknowledged the findings and supporting evidence as being understood, but had no additional comments.