



GAULIN CORPORATION

Garden Street, Everett, Massachusetts 02149 • (617) 387-9300 Telex: 094-9415 Cable: MANGALIN

December 27, 1978

U.S. Nuclear Regulatory Commission
Region IV
614 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Attn: Uldis Potapous, Chief
Vendor Inspection Branch

REFERENCE: Quality Assurance Program inspection
conducted by Mr. L.E. Ellershaw of your
office on October 23-27, 1978
Docket #99900286/78-02

Dear Sir:

Actions taken by Gaulin Corporation are discussed in the
enclosed reports for your findings in six (6) areas.

NOTICE OF DEVIATION

Item A Criterion X
Item B Criterion X
Item C Criterion IX
Item D Criterion III
Item E Criterion IX
Item F Criterion IX

GAULIN ACTIONS

Enclosure A
Enclosure B
Enclosure C
Enclosure D
Enclosure E
Enclosure F

Should you have any questions concerning Gaulin's actions, we
will be pleased to discuss them with you.

Sincerely,

Regis E. Bopp
Manager, Quality Assurance

REB:sa

Attachments: Enclosures A, B, C, D, E, F

cc: D.G. Colony, Gaulin Corporation
L.E. Ellershaw, N.R.C.
John Lyons, IS-HSB
V. Smith, ANI-HSB

7903210109

ENCLOSURE A
NUCLEAR REGULATORY COMMISSION
Q.A. PROGRAM
INSPECTION OF OCTOBER 23-27, 1978
DOCKET #99900286/78-02

Criterion X of Appendix B to 10 CFR 50 states in part, "A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with documented instructions, procedures, and drawings for accomplishing the activity. Such inspection shall be performed by individuals other than those who performed the activity being inspected....."

NONCONFORMITIES

QA Manual Section 5, paragraph 5.6.4, states in part, "When an operation listed on a Standard Operation Sheet for Nuclear Material has been completed the machine operator shall notify a Quality Control In-Process Inspector. The Quality Control In-Process Inspector shall indicate dimensional conformance of said operation by applying his Inspector Stamp and date in the column designated on the Standard Operation Sheet...."

Gaulin Corporation's (GC) response letter to NRC dated April 27, 1978, relative to actions taken to prevent recurrence states in part, "....A training session has been conducted instructing all Quality Control Inspectors that all operations on a Standard Operation Sheet, that requires inspection; must be stamped and dated before proceeding to the next operation."

Contrary to the above, a review of the Standard Operation Sheet for the Cylinder, P/N 927757, of the Positive Displacement Charging Pump, S/N 78H001, revealed that the Quality Control In-Process Inspector did not indicate dimensional conformance by applying his Inspector Stamp and date in the designated column for the following inspection operations even though subsequent operations had been completed: Operations 4, 6, 8, 10, 12, 14 and 16.

ACTIONS TAKEN BY GAULIN CORPORATION

1. CORRECTIVE ACTION TAKEN

The Standard Operation Sheet for the Cylinder, P/N 927757 has been reviewed by the Manager, Quality Assurance.

The operation that was by-passed was reinspected for dimensional conformance and found to be acceptable.

2. PREVENTIVE ACTION TAKEN

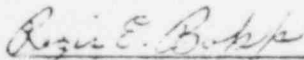
A training session was again conducted instructing all Quality Control inspectors that a check must be made on previously performed operations to assure that an in-process inspector had signed off all operations previously performed.

A training session by the Plant Manager was also conducted, which included the shop foreman. The shop foreman was instructed to inform all shop personnel that the method sheets will be followed in the proper sequence of operations and no Quality Control "Hold" points will be by-passed. The shop foreman will ensure that no violations will occur in the future.

All Q.C. Inspectors, machinists, and assembly personnel were informed that any violators will receive a written warning in accordance with their union contracts.

3. DATES CORRECTIVE ACTIONS AND PREVENTIVE MEASURES WILL BE COMPLETED

All actions are complete.



Regis E. Bopp

Quality Assurance Manager
GAULIN CORPORATION

ENCLOSURE B
NUCLEAR REGULATORY COMMISSION
Q.A. PROGRAM
INSPECTION OF OCTOBER 23-17, 1978
DOCKET #99900286/78-02

Criterion X of Appendix B to 10 CFR 50 states in part, "A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. Such inspection shall be performed by individuals other than those who performed the activity being inspected....."

NONCONFORMITIES

QA Manual Section 5, paragraph 5.4.1, states in part, "The Gaulin Quality Control Log Report is used by Quality Control Inspectors to record all inspections performed on Nuclear Materials being processed through the shop. The Gaulin Quality Control Log Report defines all required inspections to be performed in sequence with the operations specified on the Standard Operations Sheet....."

Contrary to the above, Operation 3 of the Quality Control Log Report for the Cylinder, P/N 927757 for Pump S/N 78H001, consisted of twenty-four (24) required inspections which were to be performed in sequence with the operations specified on the Standard Operations Sheet and only eight (8) had been checked/stamped off by Quality Control Inspectors to indicate verification, and subsequent operations had been completed.

ACTIONS TAKEN BY GAULIN CORPORATION

All actions taken same as Enclosure A of this report.
Docket #99900386/78-02

Regis E. Bopp
Regis E. Bopp

Quality Assurance Manager
Gaulin Corporation

ENCLOSURE C
NUCLEAR REGULATORY COMMISSION
Q.A. PROGRAM
INSPECTION OF OCTOBER 23-27, 1978
DOCKET #9990286/78-02

Criterion IX of Appendix B to 10 CFR 50 states, "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements."

NONCONFORMITIES

QA Manual Section 8, paragraph 8.0, states in part, "All Heat Treatment Procedures shall be qualified and performed by the Heat Treating Sub-Contractor....."

Heat Treat Procedure GNV-42, Revision 2, states in part, "Forgings shall be placed in the heating furnace at a temperature not to exceed 300°F. Raise the temperature for a minimum of one hour and then remove the forgings from the furnace and quench in agitated water.... Heat treatment will be documented by a copy of the original furnace chart showing purchase order ... procedure and revision number."

Contrary to the above, a review of the furnace charts showing the heat treatment performed on the suction flange and the discharge flange for Pump S/N 78H001 revealed:

- (1) The temperatures were not raised as rapidly as possible to 1925°F plus or minus 25°F in that the suction flange was held at a temperature of 1800°F for nearly four and one half (4½) hours, and the discharge flange was held at 1800°F for nearly two (2) hours before elevation to the required 1925°F.
- (2) The procedure used, and its revision number, was not documented on the furnace chart for the suction flange.

ACTION TAKEN BY GAULIN CORPORATION

1. CORRECTIVE ACTION TAKEN

Finding (1) A review of the material and the effects of heat treatment performed on the material was made by Gaulin and the vendor who manufactured the material.

The review indicated that the heat treatment performed reflects the requirements and intent of the material specification SA-182, F316.

Finding (2) A corrected test certificate will be requested.

2. PREVENTIVE CORRECTIVE ACTION TAKEN

Finding (1) Procedure GNV-42 will be deleted and a new procedure No. 1033 Rev. 3 has been approved by Gaulin Corporation.

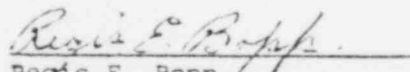
Finding (2a) All the requirements of Gaulin's Q.A. Manual will be part of the purchase order to our vendor for any special process, such as heat treatment.

(2b) All personnel involved in reviewing heat treatment charts have been notified of the error that was made in the reviewing of the certification involved in this nonconformity. A closer review will be made of this area when performing the next internal audit.

3. DATES CORRECTIVE ACTION AND PREVENTIVE MEASURES WILL BE COMPLETED

Item 1 Finding (1) Completed
Finding (2) January 2, 1979

Item 2 Finding (1) January 2, 1979
Finding (2) Completed


Regis E. Bopp

Quality Assurance Manager
GAULIN CORPORATION

ENCLOSURE D
NUCLEAR REGULATORY COMMISSION
Q.A. PROGRAM
INSPECTION OF OCTOBER 23-27, 1978
DOCKET #99900286/78-02

Criterion III of Appendix B to 10 CFR 50 states in part, ".... Measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations. These measures shall include the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces.....

Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization.

NONCONFORMITIES

QA Manual Section 2, paragraph 2.4, states in part, "Changes to Engineering designs and design documents for whatever reasons required shall be documented and then reviewed, checked, approved and controlled in accordance with full procedural requirements for original designs"

QA Manual Section 3, paragraph 3.2, states in part, "The Specifications Review Committee shall meet to review and compare each Customer's Nuclear Pump Purchase Order and Design Specifications.... The Specifications to ensure that they are not in conflict with the ASME Code and ensure that all customer requirements over and above the ASME Code are translated into special instructions.

Each member of the Specifications Review Committee shall indicate his acceptance of Nuclear Pump Purchase Order by signing the cover sheet of the Customer's Design Specifications...."

Contrary to the above, the Specifications Review Committee did not sign the cover sheets indicating review and approval, of Change Notices 3 and 4 of a Customer Purchase Order, which incorporated Revisions 8 and 11 respectively, to the Customer's Equipment Specification.

ACTIONS TAKEN BY GAULIN CORPORATION

1. CORRECTIVE ACTION TAKEN

After carefull review of the nonconformity Gaulin feels that we did not deviate from our QA Manual requirements. There is no requirement for the specification review committee to sign change notices to the purchase order including the design specification.

2. PREVENTIVE CORRECTIVE ACTION TAKEN

The QA Manual Section 3, paragraphs 3.6.2 and 3.6.3 will be revised as follows:

Section 2 paragraph 2.4 of this manual shall apply for any changes affecting the design specification.

The above addition will better reflect Gaulin's intent and clarify any further misunderstanding.

3. DATES CORRECTIVE ACTION AND PREVENTIVE MEASURES WILL BE COMPLETED

Item 1	Completed
Item 2	Before July 1, 1979

NOTE: Gaulin is in the process of a complete manual revision before our ASME survey due before July 23, 1979.

Regis E. Bopp
Regis E. Bopp

Quality Assurance Manager
GAULIN CORPORATION

ENCLOSURE E
NUCLEAR REGULATORY COMMISSION
Q.A. PROGRAM
INSPECTION OF OCTOBER 23-27, 1978
DOCKET #9990286/78-02

Criterion IX of Appendix B to 10 CFR 50 states, "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

NONCONFORMITIES

QA Manual Section 6, under Purpose states, "This section describes the system utilized to ensure that all nondestructive examinations on materials and parts are conducted by personnel qualified and certified to SNT-TC-1A in accordance with properly certified procedures meeting A.S.M.E. Code requirements."

Paragraph 6.1 states in part, ".... The Nondestructive Examination Method of Liquid Penetrant shall be performed by Gaulin Personnel in accordance with the requirements of the A.S.M.E. Code and SNT-TC-1A standards. All other required Nondestructive Examination, including Liquid Penetrant Inspection when practical, shall be subcontracted to a Qualified Nondestructive Examination Company approved by the Manager, Quality Assurance in accordance with the requirements of the ASME Code and the SNT-TC-1A Standards.

ASME Code Section III, Subsection NF, paragraph NF-5111 states in part, "Nondestructive examinations shall be conducted in accordance with the examination methods of Section V, ... visual examination shall be in accordance with Section V, Article 9.

Paragraph NF-5520 states in part, "Personnel performing nondestructive examination shall be qualified in accordance with SNT-TC-1A-1975..... For nondestructive examination methods not covered by SNT-TC-1A documents, personnel shall be qualified by the Certificate Holder to comparable levels of competency by subjection to comparable examinations on the particular method involved....The practical portion of the qualification shall be performed using the Certificate Holder's procedure on parts representative of the products."

Contrary to the above, a review of a subcontractor's documentation relative to visual examination of welds performed on ASME Code, Subsection NF, Class II Component Supports, revealed that the subcontractor had not qualified the visual examination personnel in accordance with the ASME Code by subjection to comparable examinations, both written and practical.

ACTION TAKEN BY GAULIN CORPORATION

1. CORRECTIVE ACTION TAKEN

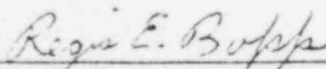
- (A) Personnel who performed the visual examination were given a general, specific, and practical visual examination to a written procedure for training, examination, qualification, and certification of visual examination personnel.
- (B) Gaulin performed an audit of the vendor involved and found the document of the above to be in accordance with the ASME Code.
- (C) All records found to be non-conforming will be revised by the vendor.

2. PREVENTIVE CORRECTIVE ACTION TAKEN

- (A) Sub-contractor's personnel, presently responsible for establishing and maintaining visual training programs have been retrained to the ASME Section III requirements.
- (B) Gaulin will develop a Level III visual examiner by examination in accordance with the ASME Code Section III and a check list will be developed for the review of vendors certification which will include NDE requirements.

3. DATES CORRECTIVE ACTIONS AND PREVENTIVE MEASURES WILL BE COMPLETED

Item 1 (A)	Completed
Item 1 (B)	Completed
Item 1 (C)	by January 15, 1979
Item 2 (A)	Completed
Item 2 (B)	Level III examiner by July 1, 1979 Check list by February 1, 1979



Regis E. Bopp

Quality Assurance Manager
Gaulin Corporation

ENCLOSURE F
NUCLEAR REGULATORY COMMISSION
Q.A. PROGRAM
INSPECTION OF OCTOBER 23-27, 1978
DOCKET #99900386/78-02

Criterion IX of Appendix B to 10 CFR 50 states, "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements."

NONCONFORMITIES

ASME Code Section IX, paragraph QW-201 states in part, "The welding procedure specification (WPS) shall list in detail ... the range of preheat and postweld heat treatment ... and other variables described for each welding process as either essential or nonessential...."

Paragraph QW-201.2 states in part, "The specific facts involved in qualifying a WPS shall be recorded in a form called Procedure Qualification Record (PQR). This form shall document the essential variable of the specific welding process or processes... and the test results... The WPS identification (including date and revision number) shall be listed on the PQR... A change in any essential variable shall require requalification, to be recorded in another PQR."

Paragraphs QW-253 - Shielded Metal Arc Welding (SMAW), and QW-255 - Gas Metal Arc Welding (SMAW), both list postweld heat treatment (PWHT) as an essential variable.

Paragraph QW-407.1 states in part, "A change in the specified postweld heat treatment range requires WPS qualification for each of the following conditions: (a) Where no postweld heat treatment is used; (b) Where postweld heat treatment is used (which is defined as below the critical range)..."

Contrary to the above, GMAW, SMAW, and postweld heat treatment (PWHT) was performed, by a subcontractor, on two (2) ASME Code Subsection NF, Class 2 component supports (Pump Pedestals), using weld procedure specifications which had not been qualified for PWHT as shown by the procedure qualification records which stated, "Postweld heat treatment - None."

Additionally, the revision number of the SMAW WPS used (WPS-AB, Revision 1), was not listed on the supporting PQR.

ACTIONS TAKEN BY GAULIN

1. CORRECTIVE ACTIONS TAKEN

- (A) The Qualification for the SMAW procedure was performed in the postweld heat treatment condition and the results were acceptable.
- (B) The Qualification for the SMAW procedure was previously qualified in the postweld heat treatment condition and the records were reviewed at the vendor's plant and were found to be satisfactory.
- (C) All records found to be non-conforming will be revised by vendor.

2. PREVENTIVE CORRECTIVE ACTION TAKEN

- (A) Sub-contractor's personnel, responsible for the review and evaluation of the weld electrode certified material test reports, have been requested to confirm that weld coupons are tested in the applicable postweld heat treated condition.
- (B) A check list will be developed for the review of vendors certifications which will include welding requirements.

3. DATES CORRECTIVE ACTIONS AND PREVENTIVE MEASURES WILL BE COMPLETED

Item 1 (A)	Completed
Item 1 (B)	Completed
Item 1 (C)	by January 15, 1979
Item 2 (A)	Completed
Item 2 (B)	by February 1, 1979

Regis E. Bopp
Regis E. Bopp

Quality Assurance Manager
Gaulin Corporation