

**Gilbert/Commonwealth** engineers and consultants

GILBERT ASSOCIATES, INC., P. O. Box 1498, Reading, PA 19603/Tel. 215-775-2600/Cable Gilasoc/Telex 836-431

OCRE EX #1

RECEIVED

APR 30 1982

PNPP  
DOCUMENT CONTROL

April 12, 1982

PY-VEN-3142-QA  
INFORMATION

RECEIVED

APR 30 1982

PERRY PROJECT  
QUALITY ENGINEERING

Transamerica Delaval, Inc.  
Engine and Compressor Division  
550 85th Avenue  
Oakland, California 94621

ATTN: Mr. Dick Boyer

Re: Perry Nuclear Power Plant  
Units I & II  
Purchase Order P-1152-K  
Diesel Generators per SP-562

Dear Mr. Boyer:

Attached please find the report for the audit conducted at your facility on February 23-25, 1982. Due to the status of the work on this contract, no findings were issued; however, deficiencies found during the audit are noted in this report.

Should you have any questions concerning this, please call me.

Yours truly,

*Dennis P. Weaver*

Dennis P. Weaver  
Program Engineer  
Quality Assurance Division

DPW:ama

cc: R.L. Farrell - w/  
T.F. Swansiger - w/  
P.B. Gudikunst - w/  
J.W. Mehaffey - w/  
F.J. Yurich - w/  
NED-SP-562 - w/  
H.F. Mayhew - w/  
A. Lambacher - w/  
T. Solomon - w/  
A. Pusateri - w/  
H.A. Manning - w/  
Howard Wong - Delaval - w/  
Geoff King - Delaval - w/  
A.E. Nance - Delaval - w/

301 (010) 9.2 - w/  
301 (010) .1 - w/

Name: *OK Boyer*

File Code: *562*

Toss

Reviewed: *OK Boyer*

QUALITY ASSURANCE  
DEPARTMENT

8505070402 850409  
PDR ADDCK 05000440  
G PDR

Reading, PA/Morgantown Road, Green Hills, Reading, PA 215 775-2600  
Ann Arbor, MI 517 788-3000, 80 Pine Street, New York, NY 212 482-8480

NUCLEAR REGULATORY COMMISSION

50-440

Docet No. 50-441

Official Exh. No. OCRE #1

In the matter of PNPP

Staff INTERVIEWED  
 Applicant RECEIVED  
 Intervenor RECEIVED  
 Contig. Off. DATE  
 Contractor 4-9-85  
 Other ✓ Witness  
 Reporter G. WALSH



Gilbert Associates, Inc.  
Quality Assurance Division

Manufacturing Audit  
February 23-25, 1982

CLIENT: Cleveland Electric Illuminating Company

UNIT: Perry Nuclear Power Plant - Units I & II

AUDIT AREA AND DATE: Delaval, Engine and Compressor Division,  
February 23-25, 1982

AUDIT TEAM MEMBERS: D.P. Weaver - GAI/QAD Program Engineer - Team Leader  
A. Lambacher - CEI/QA Quality Engineer - Team Member  
T. Solomon - CEI/QA Quality Engineer - Team Member

PERSONNEL CONTACTED:	Lance R. Block	Q.E. Manager
	R.E. Boyer	Q.A. Manager
	Howard Wong	Project Manager
	A.E. Nance	Quality Engineer
	Albert Louie	Project Engineer
	John Witt	Purchasing Manager
	Geoff King	Product Engineer
	Ken Kropf	Q.C. Supervisor
	A. Marchus	Lead Receiving Inspector

## I. INTRODUCTION:

All equipment has been shipped to the site, but has not been assembled, and Delaval has been paid for the equipment. Since this is the case, no Action Requests or Corrective Action Requests were issued to Delaval. This report is not in the standard audit report format since it is felt that its purpose is better served as organized below. The results of this audit will not be used to effect a change in Delaval's QA Program, but to evaluate the program under which the CEI equipment was built. Follow-up action by Cleveland Electric Illuminating will be determined at a later date.

## II. PURPOSE:

A. Determine Delaval's level of compliance with quality assurance requirements specification SP-706 in the areas of:

1. Design Control, particularly as related to Engineering preparation and review of:
  1. Drawings
  2. Specifications
  3. Nonconformance's, and incorporation of nonconformances into design and manufacturing documents.
2. Procurement Document Control, primarily to verify that Delaval transmitted the CEI specification requirements to subvenders and that changes to procurement documents are controlled the same as the original document. In addition, Delaval's system for control of approved suppliers will be reviewed.

B. Verify corrective action implementation of AAR's 1 and 4 from Audit #2 conducted at Delaval on May 1-3, 1978.

C. Determine how Delaval controls the potential significant deficiencies identified to clients as required by 10CFR21.

D. Review indoctrination and training records for personnel who perform functions related to assuring the quality of the product.

E. Method of handling spare parts - Determine how Delaval verifies that spare parts are the same as the parts supplied under the original order.

## III. CONTRACT HISTORY AND AUDIT BACKGROUND INFORMATION:

A. A Pre-Award Survey was conducted on September 3-4, 1975. Eleven findings were issued as a result of this audit. These are briefly described below:



1. Change order to purchase orders not being reviewed by Q.A.
2. No Qualified Supplier's List available in the Purchasing Department.
3. Obsolete drawing revision being used in manufacturing.
4. Corrective Action system was not being utilized. Corrective Action Requests are not answered and no follow-up system is in place.
5. Annual independent audit is not being performed.
6. The internal audit program is not being effectively implemented due to:
  - a. No close-out of findings issued.
  - b. Incomplete distribution of audit reports.
  - c. No auditor training/qualification.
7. No follow-up of findings on supplier audits is performed.
8. Welder qualifications not being maintained.
9. Non-conforming material not being controlled.
10. Final piece inspection was not being performed as required by the manufacturing process sheet.
11. Equipment calibration is not current.

Response to all of the above findings was made by Delaval on September 10, 1975 and accepted by CEI on September 23, 1975.

A post-award conference was held at Delaval on April 27th and 28th, 1976. At this meeting, the Q.A. requirements of SP-706 were reviewed with Delaval personnel, the procedures to be submitted for approval were identified, and corrective action implementation as a result of pre-award survey findings was accomplished.

On November 9, 1977, a QA business meeting was held at Delaval because Delaval had fabricated and shipped equipment to the Perry site without receiving a GAI Certificate of Inspection.

On December 13, 1977, during inspection trip 010-03, three Audit Action Requests were written at Delaval which are summarized below:

AAR010-03-01 Manufacturing route sheet was revised without being reviewed.

AAR010-03-02 Vendor material test reports were not being used in the shop.

AAR010-03-03 Uncalibrated measuring equipment was being used in the shop.

On January 11, 1978, during inspection trip number 010-04, four Audit Requests were issued to Delaval as summarized below:

AAR010-04-04 The incorrect heat number was stamped on Engine Number One.

AAR010-04-05 Test equipment is not being calibrated and records are not being maintained.

AAR010-04-06 The drawing being used by production was not the latest revision. The current revision contained major revisions.

AAR010-04-07 Drawing in use on the floor had not been properly reviewed and approved.

On February 17, 1978, during inspection trip number 010-05, four Audit Action Requests were issued to Delaval as summarized below:

AAR010-05-01 Torque wrench not calibrated.

AAR010-05-02 E7018 weld rod was not controlled and properly stored. This same rod was later used by an unqualified Delaval welder.

AAR010-05-03 Delaval's QA Manual had been reviewed but not submitted to CEI for review. Inspection procedures were revised but not submitted to GAI for review.

AAR010-05-04 Management was not aware that only approved welders could perform welding.

On February 15, 1978, during inspection trip 010-06, Audit Action Request 010-06-01 was issued to Delaval because a hold point had been bypassed for inspection of a control panel.

On February 24, 1978, during inspection trip number 010-07, Audit Action Request AAR07-01 was issued to Delaval for widespread welding deficiencies present in ASME welds.

On February 28, 1978, GAI/QA issued CAR0240 to Delaval for failure to meet the requirements of SP-706 as evidenced by the repeated and widespread deficient conditions identified by the GAI/QA inspector.

On March 1, 1978, during inspection visit 010-08, Audit Action Request 010-08-01 was issued to Delaval for using uncalibrated measuring and test equipment.

On March 8, 1978, during inspection visit 010-09, three Audit Action Requests were issued to Delaval as summarized below:

AAR010-09-01 Weld rod was uncontrolled. Welder qualification was incorrect.

AAR010-09-02 Documentation not in accordance with SP-562 for PNPP identification.

AAR010-09-03 Unauthorized specification deviations on the generator and engine control panel.

On March 10, 1978 Cleveland Electric Illuminating Company issued Stop Work Notification No. V005 to Delaval due to the many outstanding non-conforming items identified by CAR 0240 and AAR's 010-09-01, 010-09-02, and 010-09-03.

On March 29, 1978, during inspection trip 010-10, three Audit Action Requests were issued to Delaval as summarized below:

AAR010-10-01 Continued welding over unprepared structural members and piping surfaces.

AAR010-10-02 Delaval failed to notify GAI/QA of Hold point inspection.

AAR010-10-03 Control Panel tested to an unapproved test procedure and prior to issuance of a release by GAI.

On April 3, 1978, during inspection trip 010-11, three Audit Action Requests were issued to Delaval as summarized below:

AAR010-11-01 Widespread welding deficiencies.

AAR010-11-02 Crankshaft had incorrect heat number identification stamp.

AAR010-11-03 Instrumentation used in torsional test not calibrated.

On May 1-3, 1978 an audit of Delaval was conducted by GAI/QA. Four Audit Action Requests were issued as summarized below:

AAR02-01 There is no system to assure that the design calculations have been approved prior to issuance of fabrication drawings.

AAR02-02 Calibration of measuring and test equipment is not being controlled.

AAR02-03 Personal tools are not maintained in accordance with a calibration program.

AAR02-04 No system exists to assure that obsolete drawings are not being used in the shop.

On May 4, 1978, during inspection trip number 010-13, five Audit Action Requests were issued to Delaval as summarized below:

AAR010-013-01 Welding deficiencies identified on ASME piping on the Engine 1, Unit 1 auxiliary skid.

AAR010-013-02 Welding deficiencies identified the Engine 1, Unit 1 auxiliary skids structural members.

AAR010-013-03 Welding deficiencies identified on the Engine 2, Unit 1 ASME Piping. Unauthorized weld repairs made.

AAR010-013-04 Welding deficiencies identified on the Engine 2, Unit 1 ASME Piping.

AAR010-013-05 Welding deficiencies identified on the Engine 2, Unit 1 auxiliary skid structural members.

On June 6, 1978, during inspection trip number 010-16, two Audit Action Requests were issued to Delaval as summarized below:

AAR010-016-01 Uncontrolled E7018 weld electrode found on Engine 75052 where weld repairs had been made.

AAR010-016-02 Welding deficiencies noted on Engines 75051, 75052 and 75053.

On June 12, 1978, during inspection trip number 010-17, the GAI inspector identified more problems associated with welding. Delaval personnel could not identify which welding procedures had been used, the welding procedures were not included on the shop route sheet (traveler). No Audit Action Requests were written during this visit to document this because Delaval requested that the GAI inspector leave the shop and not return.

On 12/7/78, 1978, during inspection trip number 010-18, four Audit Action Requests were issued to Delaval as summarized below:

AAR010-018-01 No NDE performed on ASME Section III, Class 3 Piping Category C and D for four diesel engines.

AAR010-018-02 No NDE performed on ASME Section III, Class 3 Storage Tanks.

AAR010-018-03 Inadequate visual inspection of ASME Section III welds. "Use-as-is" disposition by Delaval does not meet minimum ASME standards for "Use-as-is."

AAR01-018-04 Delaval unable to determine if radiographic requirements of welds were met.

At this point, several inspection trips were made to Delaval to review final documentation packages. Many deficiencies in the documentation were found, however Audit Action Requests were not written.

Upon receipt of the material at the job site, problems with identification were found consistently. Much correspondence was generated regarding this problem, and several trips by Delaval and site personnel were made to attempt to resolve the problem. A multitude of site nonconformances were generated regarding identification, painting, welding and documentation problems. The number of the nonconformances is too great to list them individually in this report.

A problem was identified with the anchor bolts for the generator termination cabinet which is described in PY-GAI/VEN-2162-QA, dated 10/23/79, from J.C. Rovanssek to R.A. Pratt. This was a result of the failure of Delaval to incorporate subvendor equipment changes into the design drawings and seismic calculations. During investigation of this problem GAI determined that Delaval had not submitted revised drawings to GAI Engineering and had not incorporated comments made to drawings during previous GAI review.

CEI began making preparations for assembly of the equipment from Delaval in 1981, however several problems were incurred which held up progress:

1. Delaval had not supplied assembly drawings and procedures as required by the following sections of SP-562:
  - a. "Section 1:09.7 Instruction Books and Spare Parts Lists
    - (1.) ... Instruction books shall include but not necessarily be limited to:
      - a. Installation instructions.
      - b. Start-up procedures.
      - c. Operation, including schematic diagrams.
      - d. Disassembly and assembly procedures.
      - e. Outline drawing.
      - f. Assembly drawing.
      - g. Maintenance.
      - h. Calibration procedures.
    - (2.) Instruction books are not considered design manuals, and if any discrepancies between the successful bidders drawings and instruction books, or items omitted from the drawings which are contained in the instruction books cause the installation to be



different from the instruction book recommendations, the successful bidder shall amend the instruction books or modify the installation at his own expense, whichever is deemed by the OWNER as giving the most proper and operative final installation.

- (3.) The successful bidder shall modify any standard instruction book sections to agree with the engineered product and its installation. Tabular data shall be marked to identify the model supplied. When assembly, alignment, and/or erection is required in the field, the successful bidder shall furnish procedures and instructions for this work.

b. Section 2:15.3

"The VENDOR shall provide all special installation and assembly instructions. These instructions shall be part of the instruction books."

2. The documentation supplied by Delaval was insufficient, incorrect or improperly identified in many cases. These deficiencies were identified on PNPP site nonconformance reports.
3. Insufficient quantities of items were supplied by Delaval. A Delaval Service Representative went to the site in August, 1981 to survey the equipment. As a result of this, several items were re-ordered. In addition, items which had been improperly prepared for shipment and had received damage in transit from Delaval were reviewed. Recommendations for repair were made by the Service Representative.
4. A large part of the equipment was incorrectly identified. An extensive tagging system had been devised to facilitate ease of installation of the equipment at the site. This system was deemed useless as a result of the marking.
5. Most of the site nonconformances which required a response by Delaval had not been answered.

A meeting was held at Delaval on December 7-10, 1981 to attempt to resolve the above problems. The minutes of this meeting are contained in PY-SO/562-9967, dated 12/15/81 from A.P. Pusateri to Howard Wong.

Delaval has notified the Nuclear Regulatory Commission of several potential significant deficiencies in accordance with 10CFR Part 21. In one of these, Delaval was unable to determine whether there was a deficiency or not, since it depended on the final location of a piece of equipment on the engine. GAI/QA questioned Delaval concerning the maintenance



of as-built drawings, or whether the engine was constructed and inspected in accordance with an assembly drawing. There response was that although there is a basic assembly drawing, no two engines are alike, and many items are shop-fit or field-fit. No record of this type of layout change is kept. No determination is made by Engineering or Quality Assurance as to the effect of shop changes on equipment performance, seismic analyses, etc.

As a result of the items described above and the past performance of Delaval on this contract; it was described that an audit of Delaval was deemed necessary to determine the adequacy of their QA program, basically in the areas of Design Control, Procurement of Safety Related Equipment and Nonconformance Control.

Summary - The audit was hampered initially by a lack of organization with Delaval personnel. The Project Manager did not have the required personnel available as requested in the agenda. The Project Engineer refused to be contacted by the audit team until convinced by the Plant Manager that this was necessary. Also, unfortunately, the first day of the audit coincided with the arrival of the Boodmobile at Delaval, which added confusion to the situation, since personnel were continually called away from the audit.

During the course of the audit, many areas were touched upon by the audit team which were outside the original purpose of the audit. The information obtained thus is reported in the section which was being investigated.

Throughout the course of the audit, when documentation presented by Delaval was insufficient in meeting the specification requirements, the audit team informed the Delaval representative of this. The Delaval representative stated in each case that the documentation supplied to the audit team was all that was in existence.

Cleveland Electric Illuminating Company (CEI) specification SP-562, Section 2:01 states, in-part, "This specification sets forth the essential information required by the VENDOR (Delaval, Inc.) for the design, fabrication, testing, documentation and delivery of four complete, Class 1E diesel generator units, as defined by IEEE Standard 308." Section 2:14 of SP-562, titled "Quality Assurance" states, "The equipment to be provided under this Specification is to be designed, fabricated, analyzed, tested and documented under Quality Assurance Requirements as given by attached Specifications SP-706-4549-00 and SP-750-4549-00."

Delavala design is divided into two groups, one for items manufactured at Delaval, and one for "Memo III" items, or items which are purchased from subvendors. The Engineering Department Operating Procedures and Division Standard Practices provide the

design control. The Engine Specification is prepared by the Product Engineer for parts manufactured at Delaval. Purchased Material Specifications are prepared by the Project Engineer for Memo III items. No documented evidence exists for the review of either of these items against the CEI specification or the therein referenced codes and standards. No documentation of independent design verification exists. Nor are there controlled procedures for performing design or design review. The procedures in the Engineering Operating Procedures Manual and Division Standard Practices Manual are primarily administrative instruction. One exception is Engineering Operating Procedure #3 which describes the engineering of ASME Section III, Class 3 equipment. However nothing addresses the remaining safety related equipment. Personnel interviewed had only a vague knowledge of the requirements contained in the above manuals. Many errors were noted in the manuals concerning controlled distribution and incorporation of procedure revisions.

Documentation of review of design changes did not exist; through interviews with the Project Engineer and Project Engineer, it was determined that none is performed.

No attempt is made to assure that revisions to parts drawings are incorporated into the manufacturing process sheets.

There is no system in place to assure that revisions to Purchased Material Specifications are incorporated into purchase orders, and there is no documented review of change orders prior to issuance. Procurement records indicated that purchasing personnel had authorized changes in the technical content of the specifications without review and approval by the Project Engineer and incorporation into the purchase order.

There is no effective program for assuring the Delaval's subvendors have a quality assurance program which meets the requirements of SP-706. Vendors are entered on Delaval's Approved Suppliers List by completing and returning to Delaval a one page questionnaire. Completing the questionnaire again after a specified time period requalifies them for continued supply of safety-related parts. Occasionally, a Delaval inspector performs a survey at a vendor's plant. Two of these surveys were performed in 1981. The audit team reviewed these two surveys and found them to be incomplete.

The Approved Suppliers List is divided into three sections: ASME Code suppliers, non-Code safety related suppliers, and non-Code, non-safety related suppliers. Purchase orders (not changes to purchase orders) are reviewed by Quality Assurance prior to issuance, however, the Quality Engineer stated that the purchase order does not indicate whether the parts are ASME code, safety-related, or non safety-related.

Two findings were issued during the May, 1978 audit performed at Delaval in the area of Design Control. Corrective action had not been implemented as a result of either finding.

Several potential significant deficiencies have been identified to the Nuclear Regulatory Commission by Delaval under 10CFR21. The audit team determined that Delaval has no established procedure for reporting and tracking items reportable under 10CFR21.

Indoctrination and training records for personnel in engineering were reviewed. No documented evidence of the indoctrination of personnel to Division standards, CEI specification requirements or Q.A. Manual requirements were available.

When an order for spare parts is received by Delaval, they simply initiate a requisition for parts to the shop or vendors by the referenced part number. The part may actually be produced to a later revision of a drawing or specification, since this is not indicated. No documented review is performed to verify that the part is equivalent to the one originally supplied.

In summary, the audit team feels that the quality assurance program in effect at the time work was performed for CEI and the one presently in place at Delaval does not meet the requirements contained in SP-562 and SP-706. Even if the program described in the Q.A. Manual was effectively implemented it would not meet the requirements of SP-562. The attitude towards quality assurance is one of tolerance, not support. It is evident from review of the contract history presented above that this has been the case since the contracts' inception.

## AUDIT DETAILS

### A. Design Control

Delaval's method of procedurally controlling design and design review was investigated. Engineering procedures are contained in the "Division Standard Practices" (DSP) manual and the "Engineering Operating Procedures" (EOP) manual.

The following are the sections related to Engineering in the Division Standard Practices Manual:

Section 4.001 - Establishing New Engine and Compressor Ratings

Section 4.101 - Engineering Department Absorption Procedure

Section 4.202 - Engineering Change Procedure

Section 4.203 - Shippable Bill of Materials Procedure

The following are the sections in the Engineering Operating Procedures Manual:

1. Communications and Responsibilities
2. Red Lining of Drawings
3. ASME Section III, Class 3 Equipment
4. Analysis by the Design Group
5. Analysis by the Piping Group
6. Analysis by the Applied Mechanics Group
7. Engineering Releases and Revisions
8. Shippable Bill of Materials

Both the Division Standard Practices Manual and the Engineering Operating Procedures Manual are intended to be controlled documents. A controlled distribution list for the DSP Manual could not be located, nor is a receipt of acknowledgement system used.

The DSP Manual in the possession of Geoff King was reviewed for correctness. The Table of Contents requires that obsolete revisions of DSP's must be destroyed. This manual contained DSP4.101, dated 9/15/69, which is obsolete. The Table of Contents does not give the revision level for the procedures, so it was not possible to determine the current revision level. DSP4.201 was still in the manual, although DSP4.202 specifically states that it supercedes DSP4.201.



The Engineering Operating Procedures manuals assigned to Lance Block (#3) and G.E. Trussel - Chief Engineer (#28) were reviewed. Manual #23 was still assigned to Lance Block and maintained in Engineering although he no longer works in that department. The index dated 12/14/78 says that the index should be dated 11/11/75 and consist of pages A1 through A15. In actuality, the section consisted of:

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
A1	4/20/81	A17	3/17/78	A33	NOT IN BOOK
A2	4/20/81	A18	3/17/78	A34	NOT IN BOOK
A3	4/20/81	A19	3/17/78	A35	NOT IN BOOK
A4	4/20/81	A20	3/17/78	A36	11/11/80
A5	4/20/81	A21	4/19/78	A37	11/11/80
A6	4/20/81	A22	4/20/78	A38	11/11/80
A7	4/20/81	A23	4/20/78	A39	11/11/80
A8	4/20/81	A24	4/20/78		
A9	4/20/81	A25	4/20/81		
A10	4/20/81	A26	4/20/81		
A11	4/20/81	A27	NOT IN BOOK		
A12	4/20/81	A28	NOT IN BOOK		
A13	NOT IN BOOK	A29	NOT IN BOOK		
A14	NOT IN BOOK	A30	NOT IN BOOK		
A15	NOT IN BOOK	A31	NOT IN BOOK		
A16	4/15/81	A32	NOT IN BOOK		

Section B, "Drafting Room Practices"; of the EOP Manual has an index dated 5/25/70, however, the index gives no revision level or issuance date, nor does it list all the pages in Section B.

The Control List for the "Engineering Standards Books" (apparently the Engineering Operating Procedures manual) lists #23 as being assigned to Kirk, Engineering, 4/23/73; however, the manual itself was assigned to Lance Block, who no longer works in Engineering. The Control List does not include any method for assuring issuance of or acknowledged receipt of the EOP manuals.

Based on the above evidence and interviews and the Product Engineering Manager and the Project Engineer, it is obvious that the design control procedures available at Delaval are not working documents, nor are the personnel familiar with the documents.

The Engineering Operating Procedures manual provides instructions for analysis by the Design group, Piping Group and the Applied Mechanics Group. However, no instructions are available to govern the work performed by the Project Engineer and the Product Engineer. The procedure "Communication and Responsibilities", although primarily an administrative in nature, does require certain design control functions to be performed and documented by the Project Engineer. No records that these functions had been performed could be found by the Project Engineer. For example, the minutes of the Engineering Pre-Release Meeting, and documentation of his verification of contractual design

requirements could not be found. Also, this procedure states that the Project Engineer is responsible for designing the auxiliary piping systems and transmitting the resulting schematics to Product Engineering. No evidence of this having been accomplished could be found.

The indoctrination and training records for Engineering personnel were reviewed. The records indicated that a one-hour training session had been held during which all of the following subjects were covered:

1. Delaval ASME Q.A. Manual
2. 10CFR21
3. Welding Procedures
4. IEEE 323-1974
5. IEEE 344-1975
6. NUREG 0588

There is no evidence of training or indoctrination in customer requirements, Delaval standards, Engineering standards, ANSI standards or 10CFR50, Appendix B.

A report on a training session on Quality Assurance, a copy of which is attached, was presented to the audit team. This session was attended by the Chief Engineer on January 23, 1981 and indicates the attitude Delaval personnel have concerning Quality Assurance.

The audit team performed a review of Delavals internal audit program in the area of Design Control for the past three years. The concern in this area is that the Product Engineer stated that there was no recall system for obsolete prints, although the internal audits indicated that there was a recall system. Question #17 appeared on the internal audit dated 3/21/80 as follows, "Are obsolete specifications and drawings systematically recalled from point of use and distribution?" This was answered, "Accept-Depending on status of change." The audit team expressed a concern that items were being fabricated to obsolete drawings after a significant change had been made.

It was also noted that no deficiencies had been found in the area of design control in the past three years. The next internal audit is scheduled for March, 1983.

Two findings in the area of Design Control had been issued during a manufacturing audit conducted in May, 1978. Following are the observations and responses.



AAR02-01

Observation: No documented system assures that design calculations have been completed and reviewed before Design Engineering issues drawings for fabrication of ASME Section III items or systems.

Delaval Response: Engineering procedures now provide for a summary report to be delivered to the Manager of Design Engineering prior to releasing equipment for manufacture.

AAR02-04

Observation: No documented system or procedure exists to assure obsolete drawings or procedures are destroyed when revised drawings or procedures are issued to the shop for fabrication.

Delaval Response: Each issuing sub-division now maintains distribution lists for instructions and drawings. When revisions to instructions and drawings occur, instructions to destroy obsolete documents will accompany distribution.

The audit team questioned the Product Engineer, Project Engineer, and Quality Engineer concerning implementation of the response to these findings. None of them had any knowledge of these corrective actions being implemented, nor any knowledge of forthcoming procedural changes.

The audit team reviewed Delaval's method for processing design document changes. Delaval Q.A. Manual, Section 3.4.1 references Engineering Procedure #7 for instructions. This procedure provides administrative instructions to be followed in processing a revision. This procedure does not contain requirements for reviewing changes for impact on items already manufactured or tested.

Upon receipt of an order for diesel engines, Delaval prepares an Engine Specification for each engine. This Engine Specification is just a list of the part numbers which make up the engine. The drawing number is listed for the parts, however, the revision of the drawing is not listed. When a drawing is revised, no change is made on the Engine Specification. The Product Engineer reviews part drawing changes for impact on past and present engine orders. This review is performed based on his memory of the requirements of old orders. The audit team expressed the concern that it seems unlikely that one person's memory can be complete enough to include review against many different customs and code requirements for performance materials seismic design, etc.

When a order is received for spare parts by Delaval, the Engine Specification for the original order is reviewed. The Product Engineer takes the part number and drawing number off of the Engine Specification. However, there is no way to determine what revision of that drawing the original part was manufactured to.

Delaval's Engineering Operating Procedure #2, "Red Lining of Drawings" contains instructions for making shop changes by fabrication personnel, which must be authorized by the Product Engineer prior to use. Changes such as these can be made without review by the original design group or a change in the title block on the drawing indicating that a revision had been made. There is no system to assure that changes such as these are incorporated into the final design and do receive the proper review. The Product Engineer stated that a shop change similar to this is what led to the potential significant deficiency concerning the lube oil system governor location.

The method by which Purchased Material Specifications are prepared and transmitted to the vendor was reviewed with the Project Engineer. Purchased Material Specifications are prepared by the Project Engineer for components to be supplied by vendors. These are to include Delaval design requirements, customer specification requirements, code requirements and Q.A. requirements. No independent review of these documents is performed by Engineering to assure inclusion of all of the above requirements. The Quality Engineer provides the input to the Project Engineer for the Q.A. requirements section of the specification. Revisions to the Purchased Material Specification are handled in the same manner and are transmitted to Purchasing and Quality Assurance by Engineering memo. The audit team expressed a concern that these documents received no technical review prior to issuance. Several Purchased Material Specifications were cursorily reviewed at this time. It was noted on one that ASME pressure-retaining part had been specified incorrectly as ASME A325, instead of ASME SA-325. The Specification for a shut-off valve, part number 75051-154 invokes ASME Code Case 1717 and ASME Code Edition 1974 with addenda of Winter 1976. SP-562 does not allow use of this Code Case and the specified Code Addenda is not as stated above.

The following Purchased Material Specifications were picked at random in order to verify through Purchasing that all the applicable requirements had been properly transmitted to the vendors.

<u>Purchased Material Specification</u>	<u>Revision</u>	<u>Item</u>	<u>Purchase Order</u>
75051-107	G	Air Dryer	62637
75051-115	D	Lube Oil Heat Exchanger	62640
75051-117	L	Jacket Water Keep Warm Pump	62642
75051-124	B	Fuel Oil Drip Return Pump	62638

The files in the Purchasing Department were made available to the audit team. The Quality Engineer and Purchasing Manager stated that these were the complete files for each of the above purchase orders. The contractual history of each Purchased Material Specification was reviewed with the following results.

75051-107

The Purchased Material Specification was included in purchase order 62637, dated 9/24/76. Hold and Witness Points and testing requirements were identified.

Seven revisions to this Purchased Material Specification were made during the course of the contract, none of which were contractually incorporated into the purchase order. Each of the revisions had been sent to the vendor for review only.

Review of the purchase order was indicated by the Quality Engineer's initials on the first page. No indication of review was found on change orders.

75051-115

Purchase Order 62640 was issued including revision A of the Purchased Material Specification to Thermxchanger. A letter was sent to Thermxchanger on 10/14/76 sending revision B for review for cost impact only. This revision was never included in the purchase order. Revisions C and D were never sent to Thermxchanger. Revision C changed the Quality Control documentation requirements. Revision D changed the "Construction" section requirements.

75051-117

Purchase Order 62642 was issued to Buffalo Forge with Purchased Material Specification revision B. Revisions C, H, J, and K were transmitted to Buffalo Forge for review only, and were not imposed contractually. In addition Revision M was sent to Buffalo Forge, although Engineering only had record of revisions through L.

A Delaval memo was on this file from C. Hermann (Delaval Buyer) to R. Pratt and Al Louie (both Delaval Engineering) dated 5/2/79 informing them that he had authorized Buffalo Forge to work to the summer, 1978 addenda of the ASME Code for sections NF1110, NF1111 and NF1112. A letter from C. Hermann to W. Maslowsky (Buffalo Forge), dated 3/7/79 authorized this.

A letter was also in the file from Hartdegen (Buffalo Forge) to Guntrum (Delaval) dated 6/2/78 which requested use of tubing which met the ASME 1977 Edition, winter 1977 Addenda in lieu of the 1974 Edition, winter 1975 Addenda as required in the CEI specification.

75051-124

Purchase Order 62638 was issued on 10/14/76. The checklist for codes and standards in the Purchased Material Requisition did not have 10CFR50, appendix B checked. One revision to the Purchased Material Specification was made but not incorporated into the purchase order.

The above evidence indicates that the design and quality assurance requirements of SP-562 were not accurately transmitted to Delaval's subvendors. Lack of control is evident in that Purchased Material Specifications received no design review, and some were found to be inaccurate in a cursory review, Purchased Material Specifications were not transmitted to the vendors when amended, and it is unlikely that Receipt Inspection reviewed the equipment to the same revision it was manufactured to.

None of the Purchased Material Specifications reviewed contained ASME Certification Sheets or Design Specification Data Sheets.

Due to this lack of control, Delaval would be unable to assure that spare parts which had been supplied by subvendors would be manufactured to the same requirements as the original parts.

#### B. PROCUREMENT CONTROL

The audit team reviewed Delaval's vendor qualification program. The Approved Suppliers List is maintained in accordance with Delaval procedure ASL-1. This procedure provides for three groups of suppliers: ASME Code items, non-ASME safety related items, and non-ASME non-safety related items. Each list contains the following information for each vendor:

1. Vendors name
2. Rating
3. Next audit date
4. Equipment supplied
5. Last purchase date
6. Q.A. Programs committed to
7. Comments

The vendor rating system is based on the subjective rating of receipt inspections over the previous six months on a 1-10 scale. A rating of less than 7.5 results in removal of the vendor from the Approved Suppliers List.

In order to be placed on the Approved Suppliers List, a prospective vendor completes the "short form" (P-268) questionnaire. On this form are several commercial questions and also a space for the vendor to check off which criteria of 10CFR50, Appendix B his Q.A. Program meets. The completed form is reviewed by Delaval and the vendor is placed on the Approved Suppliers List. When the vendor must be requalified to remain on the ASL, this short form is mailed to them to be completed again. Occasionally, a "long form" survey is performed when it is convenient for



a Delaval inspector to do this while in the vendors shop. The Quality Engineer stated that two "long form" audits and 16 "short form" audits were performed in 1981. He also stated that these surveys were not performed regularly due to budget cuts.

Vendors removed from the ASL are placed on the "Exceptions" list. However, material can be procured from vendors on the "Exceptions" list after completion of the form "Qualified Suppliers List Waiver to QSL Exceptions List."

The ASL is issued every six months, however, changes to the ASL are made almost daily. Therefore, the only copy which is current is the one maintained in Quality Assurance. Purchase Orders (not change orders) are approved by Q.A. prior to issuance. This is signified by the Quality Engineers' or clerks' initials on the purchase order. The Quality Engineer stated that when a review is performed, they do not know if the purchase order is for parts which are ASME Code, safety related, or non-safety related.

The following vendors on the Approved Suppliers list were reviewed:

ASME Code Suppliers

Buffalo Forge

Non-ASME Code, Safety Related Suppliers

3 - D Instruments, Inc.  
Acipco Steel Production

Non-ASME Code, Non-Safety Related Suppliers

Ecodyne/MRM Division

All vendors had receipt inspection ratings above the minimum 7.5 required. All, except Ecodyne, were scheduled to have the "short form" questionnaire submitted to them in 1982 or 1984, while the last purchases to be placed with any of these vendors was in 1980 or 1981.

When problems are identified during receipt inspection an audit is performed, using a standard checklist form (P-324). This checklist provides for "Yes", "No" or "Not Applicable" answers, with space provided for comments. Several audits were reviewed with the following observations:

William Powell Co. - January 24th & 25th, 1977

No findings were issued, but in examining the checklist it was determined that the area of "In-process Control and Inspection" was checked as inadequate. The checklist did not provide for documenting objective evidence and it was not indicated what corrective action, if any, was to be taken by Wm. Powell Co. As indicated above, Powell was listed as an approved supplier in 1981.

Elwood City Forge - January 29, 1976

No findings were issued during the audit, however the following sections of the checklist indicated that certain inadequacies in the Q.A. Program existed:

Section II, "Quality Control System and Procedures"; question b - Is the Q.C. System derived from a quality specification such as:

ASME Section III

10CFR50, Appendix B (AEC 18 criteria)

Other

This question is checked "No"

Section XIV; "Audits"

"a. Are there written provisions for planned and periodic audits?"

This was answered "No".

"b. Do procedures provide for:

Checklists  
Training of audit personnel  
Reports  
Correction Action"

This was answered "No".

Section XII, "Special Processes"

"a. List of Special Processes"

Heat Treatment

"b. Are gauges calibrated?"

This was answered "Yes".

"c. Are records maintained?"

This was answered "No".

"d. Are personnel and equipment certified?"

This was answered "No" and "Not Applicable".



Section VIII, "NDE Methods"

"a. List of NDE Methods"

UT, MP, LP

"b. Are procedures used?"

This was answered "Yes".

"c. Are NDE personnel qualified to SNT-TC-1A?"

This was answered "Yes, with?"

"d. Are personnel records, resumes and qualification records of NDE personnel on file?"

This was answered "No".

"e. Are records of NDE maintained?"

This was answered "No."

Parsons Peebles - E.P. Clarkstone - September 30, 1981

No findings were issued as a result of this audit. The audit checklist was not completed in all areas. The checklist indicates that the position of "Head of Quality Control" was "Vacant at this time". The Quality Engineer indicated that an analyst was performing his duties. Section X, Drawing and Change Control, was not completed. The section on "Audits" was completed and a "Yes" checkmark indicated that there were written provisions for internal and external audits. However, the Quality Engineer stated that this was not the case. Also, "Yes" was checked to indicate that audit checklists, personnel training, written reports and corrective action systems were implemented. The Quality Engineer stated that this was not done either. This deficiency was identified during the 12/7/77 audit.

C. NONCONFORMANCE CONTROL

Several potential significant deficiencies have been identified to the Cleveland Electric Illuminating Company as required by 10CFR21. Delaval could not present a reporting procedure for this to the audit team. Also, Delaval has no formal tracking system for these deficiencies.

Shop nonconformances are documented on Inspection Reports, which are reviewed by the Product Engineer and Quality Control Supervisor.

The repair instructions, if applicable, are also included on the Inspection Report. However, when special processes are included in the instructions, no procedure and revision is referenced.

Shop routers for the following parts were reviewed and associated deficiencies found:

<u>Part</u>	<u>Pt. No.</u>	<u>Dwg. Rev.</u>	<u>Job</u>	<u>Comments</u>
Skirt (Two Piece Piston)	03-341-02-AM	J	53198	Operation #120 - Inspection - Not performed
Modular Iron Casting	03-341-02-AM	J	51771	Operation #120 - Inspection - Not performed
Crankshaft	02-310-07-AA	A	54141	Operation #50 - UT - Not stamped MT - Not stamped

The router for the crankshaft had the Drawing Revision crossed out and changed in ink, without no formal review and approval of the router revision. Also, the crankshaft router did not indicate any NDE procedures or revisions. The Quality Control Supervisor did not know how this information was transmitted to the shop.

Ultrasonic Test Report #659 was reviewed for UT of part #02-310-08-AE, an RV-16 crankshaft. The UT procedure stated "ASTM A503" (not a Delaval procedure) and the acceptance standard stated "D-4774". No indications were found. The NDE inspector was "Wm. G. Rowe, Level II", however the "Reviewed by" section was not completed.

It was also noted, while in the shop, that many special processes were not required to be performed to approved procedures.

#### D. RECEIPT INSPECTION OF SPARE PARTS

The process of receiving parts at Delaval does not have special provisions for spare parts.

The Delaval system for receiving parts is as follows:

1. All parts come to receiving inspection with a packing slip attached. Safety related items, or as Delaval calls them, control items, are color coded to indicate special handling.
2. Receiving inspection reviews ASL print-out for Vendor name and part number then calls Quality Engineering to review and stamp paperwork to indicate compliance to purchase order requirements and to assign trace number.
3. Receiving then forwards material to be identified with trace number as indicated by the Quality Engineer.
4. Upon the return of the material from being identified, Receiving Inspection then performs the inspection by sample plan and verifies trace number, then records information on Vendor Cards. These serve as a vendor inspection reports that list Vendor name and quantity accepted and rejected.

5. Prior to sending parts to stores the receiving inspector lead man records part number, purchase order number, trace number and quantity on the daily inspection stock record. He then forwards the packing slip and receiving report to Purchasing for placement on the computerized inventory control record.
6. Receiving inspector then makes out a move ticket to send parts to controlled storage.

After the review of this process no problems or concerns can be found.

Prepared by: Dennis P. Weaver  
Dennis P. Weaver  
Program Engineer  
Quality Assurance Division

Reviewed by: Frank J. Ydrich  
Frank J. Ydrich  
Program Quality Coordinator  
Quality Assurance Division



To: Bud Trussell

Date: January 23, 1981

From: M.H. Lowrey

Subject: Trip/Training Report - Technical Seminars  
Inc - Dallas, Texas

Introduction: On 1/18/81 Dick Pratt and I went to Dallas, Tex. to attend a Seminar entitled "Quality Assurance & Auditing of Nuclear Power Plants", presented by Marc Bresseler of TVA, and Bill Gibbons of Nutech. Both are highly code qualified; both serve in high places on the Boiler & Pressure Vessel Committees of ASME. Mr. Bresseler seemed to be more field and materials oriented, with a strong "real world" interpretation, while Mr. Gibbons was a bona fide member of the Q.A. empire. I was extremely underwhelmed by the pure Q.A. aspects for the sake of paper. However, I learned several things about the code as it affects design and quality. I will elaborate, hoping this results in action and not merely a report for the training file.

A: Why Section III Class 3 for our system, the major part of which cannot be built to the code - ie - the engine?

I gathered from the presentations that the ASME B & PV code, initially written to keep people from getting killed by exploding boilers, is in fact, the ONLY code which receives worldwide acceptance in professional and governmental circles. It is embraced as Law in 38 States and the Federal Government. It is the quality verification by third parties in this code which makes it unique as opposed to the ANSI B-31 Codes. The Blizzard of paper required to infuse an air of responsibility into design, builder, inspector and owner is a sad commentary on the state of american craftsmanship and business and technical ethics. Because of the above, I don't think there's much chance of my non-section III/3 systems flying in the ANS Code I have written.

B: How can we control Design?

The intent of the code is to establish documented checks and reviews in the design of a system. The initiating document is the owners design specs. (content outline of which is attached) which I have never seen in this form yet. Note that a "design" in the eyes of ASME is



To: Bud Trussell

Date: January 23, 1981

Page: 2

From: M. Lowrey

Subject: Trip/Training Report - Technical Seminars  
Inc - Dallas, Texas

a set of detailed drawings depicting parts and assemblies, the configuration of which is supported by a "design report", which are calculations assuring that the owner's spec. and the provisions of the code with respect to stresses, are met. Nowhere are layouts or parts lists addressed as parts of a "design". Complete "designs" must be reviewed by an independent reviewer who may not be the designer's supervisor (NRC Ruling).

Complete "designs" may be separated into parts and reviewed thusly, ie, drawings can be reviewed independently, and the stress report can also be reviewed so, but by people without direct payroll-type vested interest in the result. As I see it, we could do this as follows:

1. A design engineer prepares a layout, which is transmitted (after illegal review) by me to Pratt, who causes details and Isometrics to be made and checked. (not reviewed)
2. Pratt or me transmits these details to Roland, who causes one of his men to analyze it, stresswise, per the provisions of the code. This man thereby is forced to become familiar with the geometry, materials, and stresses inherent in the system.
3. When the calculations are done, Roland's other man, familiar with the calculation procedure, can legally review the stress report and the drawings. This man can legally sign documents verifying the adequacy of the total design with respect to both the code, and the owner's spec. Nowhere is it said he must be familiar with the operational suitability of the system. The code does not address operational parameters as the ANS codes do.
4. If the design report certifier, i.e. one of Roland's men, is not a P.E., then the stress analysis cannot take advantage of ASME allowable stress multipliers i.e., it must be analyzed as "Service Level A". If allowable stress multipliers must be used, then a registered P.E. must certify the design report. (see NCA-2146, b & NCA 4134.4 a,b,c).



To: Bud Trussell

Date: January 23, 1981

Page: 3

From: M. Lowrey

Subject: Trip/Training Report - Technical Seminars  
Inc - Dallas, Texas

I believe the above system is legal, and so does Marc Bresseler, however, suitable documentation (more forms) must be made up, & the QA manual must be changed.

C: What's the design report for?

Obviously, it verifies the system won't break under the conditions specified by the owner. Further, when submitted to the owner (required) he reviews it for compliance to the design spec (also required) and forwards his findings to us. In the opinion of Bill Gibbons, ONLY THEN are we allowed to N stamp systems & ship, since only then is the required Data Report form complete. Obviously this many month delay (perhaps years) simply won't satisfy our Business Plan. I don't know how to solve this. Note that the owner's spec does not address fatigue due to engine excitation.

D: Is there a way to do all this more cost effectively?

I had it driven home this week that there are many systems & parts that can be legally made from materials without traceability i.e., outside the rules of NCA-3800. Only a certificate of compliance is required. Such systems & parts are:

1. Pipe runs, Pumps, Valves 2" nominal pipe size or less.
2. NF Supports less than 2 square inches in steel area; Bolts less than 2" dia.
3. Bar stock & bolts in Piping less than 1" dia.

Such are "size excluded" materials. In order to save the roughly 30% in material costs, the shop must first set up means of controlling COC material; to not do this means steel without any paper at all could find its way into code components.

Summary: I went to Dallas expecting to learn nothing applicable to design. I was wrong. If we must remain in this business, a commitment to QA is essential, and it seems





Issued By:

RE Boyer 12/10/81

R. E. Boyer, Manager  
Quality Assurance Department

Reviewed By:

L. L. Mills  
L. L. Mills, Manager  
Purchasing Department

Approved By:

C. S. Mathews  
C. S. Mathews,  
General Manager

The General Manager's approval of this procedure is the authority to release for implementation the program outlined herein.

Date: 12-14-81

Transamerica  
Delaval



MEMO

Transamerica Delaval Inc.  
Engine and Compressor Division

INTER-OFFICE CORRESPONDENCE

To: Distribution

Date: December 21, 1981

From: Carolyn Bagnes

Subject: Approved Suppliers List Procedure  
Dated December 14, 1981

Attached is a copy of the revised Approved Suppliers List Procedure dated, December 14, 1981. Please destroy any out-of-date copies of this procedure you may have on file.

*Carolyn Bagnes*

Carolyn Bagnes  
Quality Assurance Dept.

cc: R. E. Boyer

Distribution:

Purchasing - L. L. Mills, W. E. Borza  
Receiving Inspection  
ASL File ✓

SEND TO DENNIS  
WEAVER GAI/QAD



## 1. Purpose

- 1.1 The Approved Suppliers List, (ASL) is established for determining the acceptability of suppliers and sub-contracted services in accordance with Transamerica Delaval's Quality Assurance Manual.

## 2. General Procedure

- 2.1 The ASL is maintained by Quality Control interfacing with the Purchasing Department and Receiving Inspection. Suppliers for parts and services destined to become a part of the product shall be listed in the ASL.
- 2.2 The ASL consists of the following:
- 2.2.1 A listing of ASME Suppliers
  - 2.2.2 A listing of suppliers who furnish components/parts which are non-code safety related.
  - 2.2.3 A listing of suppliers who furnish stock/parts/components which are non-code, non-safety related.
  - 2.2.4 Exceptions List. The Exceptions List indicates those suppliers whose rating has fallen below the minimum requirements.
  - 2.2.5 The name of the supplier and a multi-digit Supplier I.D. Code assigned by Purchasing in conjunction with Accounting.
  - 2.2.6 Rating. An average of all ratings made by the Receiving Inspectors for the previous six months followed by the number of inspections or parts that made up the rating. A rating of 7.5 or less will enter the supplier on the ASL Exceptions List.
    - 2.2.6.1 Receiving Inspectors assign a rating of 0 to 10 for each inspection performed with 10 being the highest rating obtainable.
  - 2.2.7 Last Activity. A date indicating the last time any parts or services were indicated as being received by Transamerica Delaval. Vendors may be removed from ASL lists if inactive for purchases for more than three years.
  - 2.2.8 Audited-Surveyed
    - 2.2.8.1 Short Form, (P-268), is completed by the supplier or by a TDI representative and returned to Quality Control. Upon receipt, the form is evaluated. If the evaluation is satisfactory, the supplier is entered on the ASL indicating pertinent information. If the supplier has been approved for code equipment, Purchasing may also consider the vendor for non-code, non-safety related and/or safety related equipment.



2.2.8.2 Long Form, (P-324), is completed by a Transamerica Delaval Quality Assurance Audit Team. One of the following entries will be made:

- NOT ON FORM, ON ASL
- a. Date - Indicates when the supplier is to be re-audited. If the supplier is not approved, he will be placed on the Exceptions List and the code NA will appear under the audited column. The supplier shall be notified of his status. If no response is received from Purchasing or the supplier within two months, the supplier will be removed from all listings of the ASL. A supplier may request a re-audit of his facility concurrent with his submittal of completed corrective action reports indicating resolution of discrepancies from the Q.A. Audit.
  - b. Inp. - Audit in process.

3. Purchasing: Purchasing shall receive a copy of all listings of the ASL. Quality Control shall inform Purchasing in writing of any supplier that is removed from the ASL. Quality Control will maintain the ASL distribution log.

3.1 Implementation. Purchasing will use only those suppliers listed in the ASL. Orders may be placed to suppliers on the Exceptions List by submitting a waiver request to Quality Control. Quality Control will develop an inspection plan to assure the quality of the product received from that supplier does not fall below the minimum acceptable requirements.

3.2 To add a supplier to the ASL, Purchasing shall request (Form P-325) approval from Quality Control.

3.3 Purchasing will place the Supplier I.D. code number on each Purchase Order.

#### 4. Receiving

4.1 All receivers forwarded to Receiving Inspection must include the supplier identification number. When receivers are issued for partial lots received, the supplier identification code must be transferred to the partial receiver.

#### 5. Receiving Inspection

5.1 Receiving Inspection will be responsible for completing the Vendor Inspection Report (Form P-313). This includes a supplier rating for each part inspected.

5.2 Vendor Inspection Reports are filed in numerical order by supplier I.D. numbers. The inspector shall assure that the supplier I.D. number is recorded on each set of receiving paperwork. In the event the receiving paperwork is incomplete, the inspector will refer the matter to his supervisor.



6. Quality Control

6.1 Quality Control is responsible for the maintenance of the ASL.

6.1.1 The ASL shall be issued every six months.

6.1.2 Quality Control is responsible for the production and distribution of the ASL. The master list and distribution record will be maintained by Quality Control. Distribution will be: Purchasing, Receiving Inspection, and the master copy for Quality Control.

6.1.3 Suppliers will make all requests for inclusion on the ASL through Purchasing. The supplier will not be included on the ASL until a survey or audit is complete.

6.1.4 Suppliers may be removed from the ASL for the following:

6.1.4.1 When the supplier rating falls below the acceptable level.

6.1.4.2 When the supplier fails as a result of a re-audit.

6.1.5 Purchasing shall be notified by Quality Control in writing of suppliers being considered for removal from the ASL.

6.2 Quality Control's review of purchase orders will include verification of the ASL status of the supplier.



# QUALITY PROGRAM SURVEY

(in all applicable blocks)

Company Name			Prepared By:
			Title
State	Zip	Telephone No.	
Manufacturer <input type="checkbox"/>	Distributor <input type="checkbox"/>	QA/QC Manager	
Representative <input type="checkbox"/>	Service Organization <input type="checkbox"/>		

or Service(s) contracted by DELAVAL Turbine Inc., Engine and Compressor Division?

Do you have an inspection and/or Quality Program and Facilities adequate to assure consistent delivery of materials to DELAVAL conforming to specifications? ☐ YES ☐ NO

1. Whom does the person in charge of Quality Control report? Name Title

3. Do you have a Quality Control Manual? ☐ YES ☐ NO If Yes please supply DELAVAL with a copy.

2. Is your program in compliance with any of the following specifications?  
 CFR50 APP. B ☐ ANSI N45.2 ☐ ASME III (NA-3700 ☐ ) OR (NA-4000 ☐ )  
 IL-Q-9858A ☐ MIL-I-45208A ☐ ANSI B31.1 ☐ ANSI N45.2.2 ☐  
 ASME Authorization  
 SEC. III CLASS 3 ☐  
 SEC. III CLASS 2 ☐  
 SEC. VIII DIV. 1 ☐

ST ANY OTHERS:

your Quality Program presently under a Government Agency surveillance?

6. Total full time Quality Control and Inspection Personnel

7. Number of Production Personnel

Does your Quality Program include established functions and written procedures for the following:

I. Organization	<input type="checkbox"/> YES <input type="checkbox"/> NO	X. Inspection	<input type="checkbox"/> YES <input type="checkbox"/> NO
II. Quality Assurance Program	<input type="checkbox"/> YES <input type="checkbox"/> NO	XI. Test Control	<input type="checkbox"/> YES <input type="checkbox"/> NO
III. Design Control	<input type="checkbox"/> YES <input type="checkbox"/> NO	XII. Control of Measuring and Test Equipment	<input type="checkbox"/> YES <input type="checkbox"/> NO
IV. Procurement Document Control	<input type="checkbox"/> YES <input type="checkbox"/> NO	XIII. Handling, Storage and Shipping	<input type="checkbox"/> YES <input type="checkbox"/> NO
V. Instructions, Procedures and Drawings	<input type="checkbox"/> YES <input type="checkbox"/> NO	XIV. Inspection, Test and Operating Status	<input type="checkbox"/> YES <input type="checkbox"/> NO
VI. Document Control	<input type="checkbox"/> YES <input type="checkbox"/> NO	XV. Non Conforming Materials, Parts or Components	<input type="checkbox"/> YES <input type="checkbox"/> NO
VII. Control of Purchased Material, Equipment and Services	<input type="checkbox"/> YES <input type="checkbox"/> NO	XVI. Corrective Action	<input type="checkbox"/> YES <input type="checkbox"/> NO
VIII. Identification and control of Material, Parts and Components	<input type="checkbox"/> YES <input type="checkbox"/> NO	XVII. Quality Assurance Records	<input type="checkbox"/> YES <input type="checkbox"/> NO
IX. Control of special processes	<input type="checkbox"/> YES <input type="checkbox"/> NO	XVIII. Audits	<input type="checkbox"/> YES <input type="checkbox"/> NO

Are your welders certified to ASME SEC. IX ☐ AWS Standards ☐ OTHER ☐

May your facilities be surveyed to supplement the above information? ☐ YES ☐ NO

Supplier's Comments:

Final Comments: