OLES

GENERAL DYNAMICS
Electric Boat Division

EB 1071 REV. 2/66

COMPONENT NO.
CLASSIFICATION NOS.

FILE NO.
SPECIFICATION

EB 2678 G

DESIGN NO.	SPECIFICATION TITLE	EFFECTIVE DATE
	QUALITY CONTROL REQUIREMENTS FOR PROCURED MATERIAL	3/1/89
SHIP OR PROJECT NO.		PAGE NO. 1 OF 35 PAGES

E.B. DIVISION APPROVALS

ORIGINATING DEPT. 421

WRITTEN BY		DATE
E. Corrigan	Dept. 421	11/5/73
APPROVED BY		**DATE**
E. Fitzgerald	Dept. 421	11/5/73
J. M. Harney	Dept. 323	11/7/73

OTHER APPROVALS

APPROVED BY	DATE
APPROVAL NOT REQUIRED	---

REVISIONS

REVISION	E.B. DIVISION APPROVAL	DATE
B	J. M. Capo	6/2/76
B	J. M. Harney	6/8/76
C	J. M. Capo	4/18/77
C	J. M. Harney	4/22/77
D	J. M. Capo	9/13/77
D	J. M. Harney	9/15/77
E	E. Fitzgerald	11/10/80
E	S. Li Manno	11/10/80
F	E. Fitzgerald	6/16/81

Revision	E.B. Division Approval	DATE
F	S. Li Manno	6/16/81
G	S. Li Manno	3-1-89
G	E. Fitzgerald	3/1/89

II. REQUIREMENTS (Cont'd)

RECORD OF REVISIONS

Revisions	Description
B	Page 5, Para. II.B.2 - Reworded to clarify intent. Page 7, Para. II.E.2 - Reworded to clarify intent Page 9, Para. II.I.1 - Reworded to clarify intent Material procured to Revision A is interchangeable with material produced to Revision B.
C	Page 5, Para. II.B.2 - Reworded to clarify intent. Page 7, Para. II.G.1 - Reworded to clarify intent. Page 8, Para. II.H.3 - Revised VPAR submittal requirements. Material procured to Rev. B is interchangeable with material procured to Rev. C.
D	Page 7, added Para. II.E.4.
E	Page 5. Added new para. II.A.4. Renumbered existing paragraph 4 to 5. Page 7, added new para. (d). Renumbered existing paragraph (d) to (e).
F	Page 7, added NOTE to para. II.E.4.
G	Complete rewrite, specific changes not noted.

EBDIV USE ONLY

Materials previously supplied in accordance with the Quality Control requirements of EB Spec 2678 Rev F are fully interchangeable with materials supplied to Rev G. All future procurements shall be to Revision G.

OVERVIEW

Suppliers performing work or services in accordance with this Specification shall establish and maintain a Quality System which will assure the quality and adequacy of the item or service provided. This Quality System (QS) shall conform to the requirements of this specification and is subject to review/audit in part or in its entirety by Electric Boat Division personnel. This specification is an adjunct to the purchase order and is intended to clarify purchase order requirements, in addition to delineating minimum quality program requirements. As a minimum, the Supplier's quality program must meet the requirements of this specification, and, when specified, the requirements imposed by MIL-I-45208 or MIL-Q-9858.

Formal notification to Electric Boat Division is required when significant system or policy changes occur to a Supplier's quality program or when there is a change in ownership.

NOTE: Appendix A outlines additional quality assurance requirements for Level I materials.

II. REQUIREMENTS

1.0 GENERAL

1.1 All materials, workmanship, procedures and standards used in the manufacture of the item(s) or performance of services pertinent to the purchase order shall conform to the requirements invoked, and may be verified at any location or at any stage of development/manufacture in order to ascertain the conformance of the item(s)/service to the purchase specification. This verification may be accomplished by Electric Boat Division Representative, a Government Inspector, or both. These verifications will always be completed in a manner so as not to unduly delay project or job completion. It is the responsibiltiy of the Supplier to transmit those portions of the purchase order including the substance of this paragraph to any and all sub-tier suppliers via a purchase document or some other contractual means.

1.2 All materials, workmanship, and services utilized in the manufacture of items pertinent to the purchase order; must be inspected by the Supplier to determine their adequacy in fulfilling the terms and conditions of the purchase order. The results of these inspections shall be documented. Only those items/services which fully conform, in all respects, to the purchase order requirements shall be submitted to Electric Boat Division and/or the Government Inspector by the Supplier for acceptance inspection.

1.3 In all cases the Electric Boat Division Purchase Order is the controlling document and takes precedence over all other documentation, either written, implied or specified.

1.0 GENERAL (cont'd)

1.4 Where commercial brand names or names of specific manufacturers are specified in the purchase order together with terms such as "similar to" or "or equal", such identification is intended to be descriptive, but not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory. Supplier's requests when submitted on a Vendor Information Request (VIR) offering "equal" products will be considered for approval if such products are clearly identified in the proposals and are determined by the Purchaser to be equal in all material respects to the specified brand name product. Suitability for marine service, the timely availability of repair parts, and operating and upkeep costs will be considered in granting approval.

1.5 FORMS

A. Vendor Information Requests (VIR) EB Form 84-01-2205

Requests for interpretation or clarification of any purchase order requirement, changes to drawings or specifications and/or requests for acceptance of a nonconforming condition; and repair welding authorizations* (when required) shall be submitted on the "Vendor Information Request" form (Exhibit A). The form will be completed by the Supplier in accordance with instructions found on the back of the form and submitted to the cognizant Electric Boat Division Buyer.

*Unless previously approved, VPAR must be submitted in addition to the VIR for weld repair procedure approval.

1.0 GENERAL (CONT'D)

1.5 FORMS (cont'd)

B. Vendor Procedure Approval Request (VPAR) EB Form 84-01-2205

All nondestructive testing (LP, MP, UT, VT, RT) alloy identity (when required) and welding, both production and repair (including repair of castings) and brazing must be performed in accordance with approved written procedures. These procedures shall be submitted to Electric Boat Division for approval on a Vendor Procedure Approval Request (Exhibit B). The supplier shall not use the procedure on EBDiv contracts until the approval is received. In addition, evidence of personnel qualification shall be available for review by the Electric Boat Division authorized representative, upon request, as applicable.

C. Vendor Corrective Action Report (VCAR) EB Form 84-00-4496

Nonconformances found by Electric Boat Division regarding product quality, documentation or Supplier's quality control system are recorded on a Vendor Corrective Action Form (VCAR) (Exhibit C). VCAR's are written to identify nonconformances found and to obtain corrective and preventive action from the Supplier. VCAR's must be answered within the time frame specified therein. Extensions may be requested in writing.

NOTE: Copies of Electric Boat Division VIR/VPAR forms are available from the cognizant Electric Boat Division Buyer.

2.0 DOCUMENTATION

2.1 The Supplier's quality program and implementing procedures shall be documented and are subject to review and approval by Electric Boat Division. The written program and procedures shall be clear, concise and current. The program/procedures shall include, as a minimum, the inspection and test instructions for work in process, as well as for completed items/services as required by the specification, drawing and/or the applicable purchase order. Processes that may affect quality; e.g., welding, material control, plating, painting, etc., shall be performed in accordance with documented procedures. The written program shall clearly assign responsibility for the various functions and include an organizational chart.

2.0 DOCUMENTATION (Cont'd)

2.2 Documentation generated which serves as objective quality evidence shall be legible, reproducible, and documented with an instrument that provides a permanent record; i.e., ink pen, typewriter, etc.

Corrections and additions to quality documents shall be made as follows:

a. Drawing a single line through the incorrect entry. (Erasure or obliterations, including "whiteout", of information is prohibited.)
b. Enter the corrected information.
c. Initial and date each correction.
d. When additional information is added to a quality document, the entry must be initialed and dated.
e. When a quality document is retyped, in portion or completely, to correct or add information, it shall be identified as a corrected copy and all changes shall be identified; i.e., (*). The document shall be re-signed and dated.

NOTE: Quantitative, semi-quantitative data cannot be altered on another organizations quality document.

2.3 Suppliers are required to assign, in writing, the responsibility and authority for signing quality documents. This authority may be granted by title or name (e.g., Q.C. Manager, Chief Metallurgist, Mr. John Doe, etc.).

The responsibility for signing inspection and testing quality documents must be assigned (by title or function) in writing to the person performing the inspection or test.

Persons signing quality documents must be directly involved with the activity for which they are signing or have documented evidence that the activity they are signing for has been performed satisfactorily in accordance with the contractual requirements invoked. When a person, other than the one who performs the inspection or test activity, signs a quality document, they must indicate whom they are signing for.

EXAMPLE: "J. W. Brown (Alternate Signature) "for D. W. Smith" (printed).

2.0 DOCUMENTATION (cont'd)

2.4 The requested number of copies of all certifications, inspection reports and test reports required by the purchase order, shall be forwarded with each shipment (full or partial). This documentation is to be included within or attached to the shipping container. In addition, one copy shall be mailed to the cognizant Electric Boat Division Buyer.

NOTE: In the case of shipments to a destination other than EBDiv (drop shipments) one copy of the certifications shall be forwarded to:

Manager, PQA, Station J-28
Electric Boat Division
Groton, Connecticut 06340

or to the cognizant EBDiv department specified in the purchase order.

2.5 When certifying and/or reporting test results, record the applicable specification or other associated identifying data, the procedure number and the revision levels. Include the test results (actual measurements, values or conditions) as applicable. Test reports or other documented verifications shall be signed and dated by the Supplier's authorized representative. Erasures, white-out or any other type obliteration of data is strictly prohibited. Corrections must be accomplished as specified in section 2.2.

2.6 All test and inspection records including all radiographs (unless otherwise noted in the purchase order), radiographic records, and reports of nonconformances, applicable to material supplied to EBDiv. shall be maintained. These records shall include verification that all required inspections and tests have been accomplished with satisfactory results by a qualified individual. Test records shall be retained for a period of seven years after completion of the contract. Where work is performed under continuing contracts or on other than a contractual basis, these records shall be retained for seven years from the date the work was performed. At the end of the seven year period, the supplier shall request instructions from Electric Boat as to whether the records shall be destroyed; forwarded to Electric Boat; or retained by the supplier for a longer period (as agreed upon by the supplier and Electric Boat). Records shall be made available to Electric Boat Division within 36 hours upon request. When requested, the Supplier shall provide objective quality evidence that the item, material or service used in the performance of this order is in full compliance with the appropriate specifications and indicated revisions.

2.0 Documentation (cont'd)

2.7 When sub-tier specifications are invoked in the primary document; i.e., the drawing or specification listed in the purchase order references sub-tier specifications and the revisions are not indicated, the revision in effect is the latest revision issued prior to the "Effective Date" as indicated in the purchase order. For example, if the Effective Date listed in Standard Clause 60-11 is 11/1/73 then the latest revision, including amendments, of the specification issued prior to 11/1/73 would be in effect. Requests to use earlier or later revisions of the sub-tier specifications must be submitted on a VIF. If the Effective Date is not given in the purchase order then the invitation to bid date is considered the specifications Effective Date.

NOTE: The Effectivity Date is not applicable to the primary document if the revision is specified in the purchase order.

2.8 Certification Data sheets (CD Sheets) may be required by the invoked Equipment Specification. These CD sheets contain pertinent technical data and must be submitted to the Buyer, as appropriate, for approval and/or information.

2.9 Various products are required to satisfactorily pass the qualification testing invoked in the applicable specification to allow the product and manufacturer to be listed on the specification Qualified Products List (QPL). Test results are required to be submitted to a government agency for approval. Once accepted, the product and manufacturer is listed on the Qualified Products List (QPL) for the applicable specification. This QPL is recognized by Electric Boat Divison; however, Electric Boat Division reserves the right to audit, inspect or subject to any level of appropriate scrutiny any and all products presented for acceptance by the Supplier. QPL listings do not release the supplier from full compliance with the requirements of the contract.

2.10 Transcription of data is prohibited. Reports of chemical analysis and physical testing must be reported by the material manufacturer (mill) or test laboratory performing the examinations. Test results must be documented on the test form of the organization that performs the actual test. Any transcription of this data by a Supplier, including transferring to another test form, will be cause for rejection. However, the supplier may provide a test report under his letter head listing the results of all tests performed as long as copies of the test results performed by other organizations are also included.

2.0 DOCUMENTATION (cont'd)

2.11 When an item is source inspected at a Supplier's plant and released for shipment by Electric Boat Division personnel, the documentation signifying release of the material; i.e., Release for Shipment, shall be forwarded with the shipment of the item and other documentation to destination.

2.12 When specific written procedures to perform a function; i.e., LP, UT, MP, etc. are utilized, these procedures shall be in the local work area and shall be accessible to the personnel performing these functions.

3.0 DRAWING AND DOCUMENT CONTROL

3.1 The Supplier shall have an established system that ensures the correct drawing, specification and/or instruction is available and used to manufacture the items or provide the services covered by the purchase order. EBDiv does not in all cases procure to the latest approved drawing. The required drawing revision is the revision designated in the purchase order. If the Supplier intends to deviate from the invoked drawing revision, permission must be obtained from EBDiv on a VIR.

3.2 Supplier drawings of items may be required to be submitted to Electric Boat Division for review and approval. When working to "Approved Drawings", all proposed changes to these drawings must be submitted to the Buyer or cognizant government agency for approval prior to use. The supplier assumes all responsibility when work is performed to unapproved drawings. Drawing changes shall be submitted on a VIR in accordance with section 1.5 of this specification.

4.0 DESIGN CHANGES

4.1 Any changes to the design of an item or to a service being procured by the purchase order must be submitted, utilizing a VIR form, to the Electric Boat Division cognizant personnel for review and approval. Design change is defined to mean changes to any of the following:

- o drawings
- o specifications
- o inspection systems
- o quality program requirements
- o reliability
- o safety
- o weight
- o materials or special requirements
- o unusual inspection or test procedures or equipment
- o any special revision or model identification whether specified in the purchase order, or referenced.
- o any change that could affect interchangeability (fit, form, function)

5.0 MATERIAL CONTROL

5.1 The Supplier shall assure that the items or services used in fulfilling the requirements of the purchase order are in conformance with the applicable material specification and revision as may be required by the drawing specification and/or purchase order.

5.2 The inspection status of all material used to manufacture the items of the purchase order shall be in evidence at all times during the manufacturing cycle. The identification of inspection status may be accomplished in any suitable manner, as long as the status is readily apparent.

5.3 The Supplier shall have the capability to account for (during and after manufacture) the number of pieces manufactured, tested, scrapped, rejected, etc.

5.4 The Supplier shall perform or have performed all necessary inspections and tests to ensure that the material procured from lower-tier subcontractors is in conformance with all requirements. Inspections, tests and/or certifications from activities, other than the Supplier's, does not relieve the Supplier of his responsiblity to furnish material/services in full compliance with all purchase order requirements.

The degree of control of subtiers shall be dependent on the complexity of the item being purchased and the subtier's quality performance record. Control shall be maintained by:

5.0 MATERIAL CONTROL (cont'd)

5.4 (cont'd)

a. Conducting quality audits and source inspections at the subtier's facility.

b. Performing chemical and mechanical testing, on a sample basis, to confirm reported results on test reports.

c. Performing generic alloy identity tests, on a sample basis, to assure the proper alloy is being supplied.

d. Utilizing supplier receipt inspection history.

NOTE: The control used by the supplier shall be one of the methods discussed above or a combination thereof.

5.5 Material furnished by Electric Boat Division to the Supplier shall be used for the intended purpose. Identification marking on or with this material shall be maintained throughout the manfacturing cycle.

5.6. Items or material requiring traceability to Objective Quality Evidence (OQE) shall be stored and processed such that positive identity is maintained. When practical, each piece of material shall be individually and permanently identified in accordance with MIL-STD-792. Totes, bags, or boxes, identified properly and accompanied by a properly identified process traveller, are a suitable alternative during the manufacturing process.

5.7 Material that is identified as Level I on the purchase order shall be controlled in accordance with the requirements of Appendix A.

5.8 Unless the purchase order specifically identifies the area where permanent marking on an item should be applied, it shall be marked in an area that is readily accessible and unlikely to be obliterated during installation at Electric Boat Division.

NOTE: When material is worked or heat treated, resulting in changes to its mechanical properties, the material shall be uniquely marked to provide traceability to the final heat treatment and mechanical properties certified for that material.

5.0 MATERIAL CONTROL (cont'd)

5.9 Unless specifically authorized in the Electric Boat Purchase Order, only seamless pipe and tubing shall be used in items/components supplied to Electric Boat Division. The supplier's material control system must assure that seamed pipe and tubing is controlled such that it cannot be mixed with seamless pipe and tubing. This material control requirement must be passed on to the supplier's mill or distribution sources and subtier suppliers.

6.0 NONCONFORMING MATERIAL CONTROL

6.1 The Supplier shall provide a system of control for material found to be nonconforming which immediately identifies and segregates this material from conforming materials. The systems shall provide a method of evaluation to determine the disposition of the nonconforming material.

6.2 If, in the Supplier's opinion, the nonconforming material cannot be reworked to conform to purchase order requirements, but is thought to be usable, the Supplier may submit a VIR (see section 1.5). The VIR shall include a complete description of the nonconformance, quantity affected, proposed repair (as applicable), technical justification for acceptance and the over-riding benefit to the Purchaser for acceptance of the nonconformance.

6.3 The acceptance of nonconforming materials by the Purchaser (Electric Boat Division) under this order or prior orders, does not relieve the Supplier of his obligation to furnish all or the remainder of, the items or material under this order, in strict conformance to all requirements. Any acceptance of nonconformance will not serve as a waiver of requirements or establish a precedence for performance, regarding subsequent deliveries under this or future orders.

6.0 NONCONFORMING MATERIAL CONTROL (Cont'd)

6.4 Where the Supplier has design authority for the item with the nonconformance, and the nonconformance is a departure from a Supplier's shop or detail drawing, and this drawing is not subject to Design Agent, NavSec or NavSea approval, the Supplier may conduct internal material review action to determine product adequacy, provided all of the conditions of paragraphs A. through F. below are met. In these instances, EBDiv approval of the material review decision is not required.

A. The internal material review process is conducted by duly appointed representatives of the Supplier's Quality and Engineering organization and other Supplier personnel necessary to determine product adequacy.

B. The nonconformance does not violate an approved drawing, specification, or purchase order requirements.

C. The nonconformance does not violate Federal or Military specifications or standards.

D. The nonconformance does not affect safety, performance of designated functions, or interchangeability (form, fit or function).

E. The nonconformance does not constitute a design change as defined in section 4.0 of this specification.

F. Records of these nonconformances and the corrective actions assigned remain available for audit by Electric Boat Division.

7.0 MANUFACTURING AND SPECIAL PROCESSES

Manufacturing and special processes shall be performed in accordance with written instructions/procedures such as process sheets, shop procedures, travellers, etc.

7.1 Repair welding, bonding or impregnation in excess of that permitted by the basic material specification will not be allowed without prior specific approval by Electric Boat Division on a VIR (see section 1.5).

7.0 MANUFACTURING AND SPECIAL PROCESSES (Cont'd)

7.2 When required by the purchase order, procedures for special processes, instructions or weld repair authorization shall be submitted to the cognizant Electric Boat Division Buyer on the VPAR (see section 1.5) for approval. This VPAR shall be submitted and approval granted prior to performance of the applicable task. Failure to comply or violation of this requirement will be cause for rejection.

7.3 a. Where invoked, all nondestructive examination (radiography, magnetic particle, liquid penetrant, visual and ultrasonic) and alloy identity tests must be performed in accordance with approved written procedures. These procedures shall be submitted to Electric Boat Division on a VPAR (see section 1.5) for approval prior to performing the tests. In the case of radiography, submittal of evidence or process qualification will satisfy the intent of this requirement. In addition, evidence of personnel qualification shall be available upon request when such qualification is a requirement. Where UT, LP, MT, VT and alloy identity procedures have received approval from an authorized representative of the responsible government agency; i.e., NAVSEC, NAVSEA or Supervisor of Shipbuilding, include a copy of the approval document with submittals of the same procedure to Electric Boat Division.

7.3 b. In the case where radiography is required, the prime Supplier shall review (or have reviewed by a qualified individual) and approve all RT films whether RT was performed by Supplier or a sub-tier. Electric Boat Division approval of the film must be obtained prior to shipment of the item unless authorization to the contrary has been previously granted in writing. Film submitted for approval, including film for all weld repair cycles, shall be forwarded to the cognizant Electric Boat Division Buyer unless reviewed by Electric Boat Division Representative on site. When noted in the purchase order, the film will become the property of Electric Boat Division. Once approved, this film will be maintained on file at Electric Boat Division.

7.4 The Supplier's procedures for nondestructive examination (UT, LP, MT) and alloy identify, (when required), production or repair welding, brazing or operational testing which have previously received Electric Boat Division written approval, need not be resubmitted for approval provided the requirements of the purchase order are met. However, evidence of previous approval as required by the purchase order must be submitted.

7.0 MANUFACTURING AND SPECIAL PROCESSES (cont'd)

7.5 Documentation specifying results of preproduction and qualification testing (shock, vibration, environmental, etc.) required by notes on NAVSEA Standard Drawings and/or Specifications referenced elsewhere in the purchase order, must be accomplished and when required by the purchase order forwarded with shipment of the items. If the equipment has previously been successfully tested, refer to Electric Boat Division purchase order to determine what actions must be taken.

8.0 INSPECTION

8.1 Sampling Inspection

a. Unless otherwise specified, the use of sampling procedures for acceptance of material utilized in finished products delivered under this order is permitted, provided that sufficient base data is obtained to warrant sampling and that a valid sampling plan is used; e.g., MIL-STD-105.

b. The Supplier's election to use sampling as an inspection technique is at his option and does not relieve him of the responsibility to deliver only fully acceptable items to Electric Boat Division under the purchase order.

8.2 Measuring and Testing Equipment (M&TE)

a. Instruments, gages, tools and fixtures used in the inspection and/or test of items for the purchase order shall be adequate to provide the accuracy required by the drawings and specifications. Acceptance tests requiring specialized equipment not available in the Supplier's plant may be performed by an outside agency. Those inspection tools (M&TE) used for product acceptance shall be calibrated, traceable to the National Bureau of Standards or other appropriate government agency, at periodic intervals consistent with the M&TE's stability, purpose and degree of usage. Unless otherwise authorized by EBDiv, the accuracy of the reference standards used for calibration shall be at least 4 times more accurate than the M&TE.

b. In all cases, the Supplier's calibration system shall as a minimum comply with MIL-STD-45662.

8.0 INSPECTION (CONT'D)

8.2 Measuring and Testing Equipment (M&TE) (cont'd)

c. Calibration procedures shall be written utilizing MIL-STD-120 guidelines and shall comply with MIL-STD-45662.

d. All M&TE used for final inspection shall bear a unique identification number or symbol. This unique identification number or symbol shall trace the instrument to documentation which will provide the following:

(1) brief description of the M&TE.
(2) the date the next calibration is due and the date the current calibration was performed.
(3) the identification of the individual or activity that performed the current calibration.
(4) a listing of the calibration history of the equipment including results; i.e., satisfactory or unsatifactory.
(5) the allowed deviation from standard without requiring recalibration.
(6) actual values of the calibration when the allowed deviation from standard is violated.
(7) standards used to perform calibration.
(8) procedure used (if performed in house).

NOTE: Calibration stickers may be used in conjunction with the identification number or symbol. The sticker should show the information required by 2 and 3 above. Where calibration stickers are not practical due to size and usage of tools, an alternate method; i.e., color dot, may be used.

e. Any exceptions to the above requirements shall be processed on a VIR in accordance with Section 1.5 of this specification.

f. Personally owned tools are not required to be in the calibration system provided they are not used for product acceptance inspections (in-process and final).

8.3 INSPECTION (cont'd)

8.3 Inspection at Supplier's Plant

a. The Supplier shall provide assistance to the Electric Boat Division representative during source inspection, source control audits or others as may be specified by contract. This will include, but not be limited, to the following:

- o cooperation in establishing dates and times of visits to the plant facilities.
- o providing requested information, documents and escorts during audits, surveys and shop inspections or tours.
- o providing to the Electric Boat Division representative and/or Government Inspector calibrated M&TE to check product compliance.

8.4 CORRECTIVE ACTIONS (C/A)

A. The Supplier must establish and maintain an adequate Corrective Action (C/A) system. This system shall require that an appropriate corrective action report (CAR) be issued when nonconformances are found to be significant:

- o loss of traceability of material
- o loss of records of tests or failure to perform tests
- o that which renders an item unusable
- o any nonconformance that becomes repetitive and demonstrates a trend.

B. The C/A system must describe the nonconformance, establish the basic-probable cause , detail steps which will "preclude repetition", and assign individual responsibility to correct the cause. Pertinent documentation will be maintained by the Supplier and made available for review by the Electric Boat Division Representative upon request.

C. Electric Boat Divison Vendor Corrective Action Reports (VCAR) will be issued to a Supplier to document nonconformances when found either at the Supplier's plant and/or at Electric Boat Division. It is the Supplier's responsibility to provide timely correction of the conditions which caused the nonconformance. He shall conduct such investigations and inquiries as necessary to provide effective corrective action responses to the Vendor Corrective Action Report (VCAR) and also take the necessary action to prevent this type of nonconformance from recurring.

8.0 INSPECTION (cont'd)

8.4 CORRECTIVE ACTIONS (C/A) (cont'd)

D. If a nonconformance is known to affect items that were previously supplied to Electric Boat Division; it is the Supplier's responsibility to identify the items with the nonconformance to Electric Boat Division. In addition, it is the Supplier's responsibility to provide the necessary data/manpower/testing to resolve the nonconformance to the satisfaction of Electric Boat Division.

9.0 AUDITS

9.1 The Supplier shall establish and maintain an internal audit program and, when necessary, an external audit program. For Level I material, it is mandatory that an external audit program be maintained. (See Appendix A Para 2.4.2) These programs will be designed and implemented to determine compliance to minimum program elements which in themselves will assure that the pertinent program or process will provide adequate quality.

9.2 Both internal and external audits will be preplanned using a check list of audit elements that are capable of determining if contract requirements can or are being complied with. A review sheet will document the level of compliance found during the audit. Nonconformances will be clearly documented with follow-up action sufficient to determine satisfactory resolution. Records will be maintained by the Supplier and made available for review by the Electric Boat Division Representative upon request.

9.3 The Supplier shall audit their internal quality assurance program and the internal manufacture and/or process system at least annually to determine compliance to their quality program and the requirements established by this specification.

GENERAL DYNAMICS
Electric Boat Division

VENDOR INFORMATION REQUEST

84-01-2205 REV 10/87 REFERENCE SP 4-2

1. VIR NO. A 05028

2. VENDOR NAME AND MAILING ADDRESS
COMPANY NAME
ADDRESS
CITY STATE ZIP CODE

3. COMMODITY OR PART NAME

4. EB DIV REFERENCE NO
PD-

5. PAGE OF

6. DATE

7. ☐ DEPT. 320 ☐ DEPT. 420
SHIPPING DESTINATION
☐ MIDWAY FACILITY WAREHOUSE
☐ QUONSET PT. FACILITY BLDG. 16
☐

8. UNIT

9. DATE DISP REQ'D

10. PURCHASE ORDER NO	SUPP	ITEM	11. QTY	12. EBDIV P/N	13. APPARENT RESPONSIBILITY	14. LOCATION OF MATERIAL

15. DRAWING NUMBER	16. REV	17. PART/PC NO	18. WGT ACCT	19. MATERIAL	20. PATTERN NO	21. HEAT NO	22. SERIAL NO

23. STATUS OF PART: ☐ NOT STARTED ☐ IN PROCESS ☐ COMPLETED

24. REASON FOR REQUEST:
1. ☐ NONCONFORMANCE 2. ☐ SPECIFICATION CHANGE 3. ☐ INTERPRETATION 4. ☐ WELD REPAIR 5. ☐ DRAWING CHANGE 6. ☐ EB SUPPLIED MATL.

25. DESCRIPTION:

(NOTE) ITEMS 26,27,28 ARE FOR NONCONFORMANCE APPLICABILITY ONLY

26. CAUSE OF NONCONFORMANCE

27. CORRECTIVE ACTION TAKEN

28. RECOMMENDED DISPOSITION

EB SPEC 2678G
EXHIBIT A
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29. VALUE OF PART SUBMITTED FOR DISPOSITION

30 TECHNICAL JUSTIFICATION

31. DELIVERY IMPACT IF REQUEST IS DISAPPROVED

THE VENDOR ACCEPTS FULL RESPONSIBILITY FOR THE CORRECTNESS OF INFORMATION AFFECTING THE ABOVE PARTS | 32. REPORTED BY | SIGNATURE

VENDOR: PLEASE DO NOT WRITE BELOW THIS LINE

FOLD	PR ORIG. DEPT.	EDIV. BUYER	BUYER NO.	TE... EXT.	VENDOR NO.	FOLD

DISPOSITION: (LIMIT TO INSTRUCTIONS TO VENDOR. RECORD INTERNAL COMMENTS ON 84-00-3193)

☐ APPROVED ☐ DISAPPROVED ☐ CONDITIONALLY APPROVED TVD ☐ YES ☐ NO ☐ N/A

BELOW SPACE IS FOR FINAL DISPOSITION AUTHORIZATION USE ONLY.

SHIPPING INSTRUCTIONS: THE VIR NO. MUST BE RECORDED ON THE PACKING LIST PRIOR TO SHIPPING

THE DISPOSITION RESULTS IN:

☐ NONCONFORMANCE	☐ YES ☐ NO	☐ DWG. DEPARTURE/ DEVIATION	☐ YES ☐ NO	☐ WAIVER	☐ TYPE A	APPROVALS	
☐ OTHER (NON CONTRACTUAL) NONCONFORMANCE	☐ YES ☐ NO	☐ SPEC. DEPARTURE/ DEVIATION	☐ YES ☐ NO	☐ DEVIATION	☐ TYPE B	ENGINEERING NR ☐	DATE
☐ WELD REPAIR	☐ YES ☐ NO			☐ MINOR	☐ ADM. CHG.		
☐ COST SCHEDULE IMPACT	☐ YES ☐ NO	☐ AFFECTS INTERCHANGEABILITY	☐ YES ☐ NO	☐ MAJOR	☐ MIN. TECH.	MATERIAL SYSTEMS	DATE
					☐ MAJ. TECH.		

APPROVAL QA/NQC	DATE	SUPSHIP	DATE	SUPSHIP-CONTRACTING OFFICER	DATE

VENDOR RESPONSIBLE REWORK IS REQUIRED BY EBDIV	RECEIVING INSPECTION-REJECT UPON RECEIPT	PURCHASING DISPOSITION SENT TO SUPPLIER
☐ YES ☐ NO	☐ YES ☐ NO	BY DATE

NOTICE TO SUPPLIER: THE DISPOSITION OUTLINED ABOVE IS APPLICABLE TO THE MATERIAL DEFINED ON THIS VIR ONLY. SHIPPING DOCUMENTS FOR THIS MATERIAL MUST REFERENCE THIS VIR. ALL NONCONFORMING MATERIAL ACCEPTED BY THIS VIR MUST BE MARKED WITH THE VIR NUMBER UNLESS OTHERWISE NOTED IN THE DISPOSITION.

VIR NO. A 05028

Instructions for completing form are on the back of the work sheet. Form may be obtained from EBDiv Purchasing Department.

GENERAL DYNAMICS
Electric Boat Division
GROTON, CONNECTICUT 06340
84-01-2974 REV. 1/83

VENDOR PROCEDURE APPROVAL REQUEST

1 ☐ DEPT. 320 ☐ DEPT 420 SHIPPING DESTINATION
☐ MIDWAY FACILITY WAREHOUSE
☐ QUONSET PT. FACILITY BLDG. 16
☐

2 VENDOR REFERENCE NO.

3 EBDIV REFERENCE NO.

4 VENDOR NAME AND MAILING ADDRESS

COMPANY NAME

ADDRESS

CITY STATE ZIP CODE

5 REASON FOR REQUEST	6 TYPE OF PROCEDURE
NEW PROCEDURE	WELD PROCEDURE
EXTEND PROCEDURE APPVL	BRAZING PROCEDURE
X-RAY APPROVAL 1ST PCS.	NDT PROCEDURES
X-RAY PRODUCTION	SHOOTING SKETCH
OTHER	OTHER

7 PURCHASE ORDER NO.	SUPP.	8 ITEM	9 JOB/UNIT	10 DRAWING NO.	11 PART/PC. NO.	12 SPECIFICATION

DESCRIPTION OF DOCUMENT: PROVIDE TITLE AND IDENTIFYING NUMBER OF PROCEDURE AND REVISION (WHEN APPLICABLE), AND DATE. PROVIDE X-RAY SERIAL, PATTERN AND HEAT NUMBERS FOR X-RAYS. PROVIDE SHOOTING SKETCH APPROVAL NUMBER FOR PRODUCTION OF FIRST PIECE X-RAYS. USE SEPARATE FORM FOR EACH PROCEDURE OR TYPE OF X-RAY.

13

EB SPEC 2678G
EXHIBIT B
Page 24 of 35

THE VENDOR ACCEPTS FULL RESPONSIBILITY FOR THE CORRECTNESS OF INFORMATION AFFECTING THE ABOVE.	14 VENDOR'S SIGNATURE	15 DATE	16 DATE APPROVAL REQUIRED

VENDOR PLEASE DO NOT TYPE BELOW THIS LINE

DISPOSITION FOR THIS SUBMITTAL: ☐ APPROVED ☐ APPROVED PENDING REVISION ☐ DISAPPROVED. SEE COMMENTS BELOW.	PR. ORIG. DEPT.	BUYER'S NAME	PHONE EXTENSION

EBDIV EVALUATION

AUTHORIZED SIGNATURES

ENGINEERING	QUALITY CONTROL	CUSTOMER (IF REQUIRED)	PURCHASING

NOTE: RECORD "N/A" (NOT APPLICABLE) IN BLOCKS WHERE APPROPRIATE

Instructions for completing form are on the back of the work sheet. Forms may be obtained from EBDiv Purchasing Department.

GENERAL DYNAMICS
Electric Boat Division

VENDOR CORRECTIVE ACTION REPORT

84-00-4496 REV. 6/81

1. REFERENCE NO.

2. VENDOR NAME AND MAILING ADDRESS
COMPANY NAME
ADDRESS
CITY STATE ZIP CODE

3. ACTION TO BE COMPLETED & RETURNED TO:
GENERAL DYNAMICS
Electric Boat Division
Eastern Point Road, Groton, Connecticut 06340
ATTN:

4. DATE WRITTEN

5. DATE REPLY DUE

6. ☐ SURVEY ☐ SYS ☐ PROC ☐ SOURCE CONTROL ☐ OTHER

7. PURCHASE ORDER NO. | SUPP | ITEM | 8. DRAWING

9. REFERENCED:
A B C

YOU ARE REQUESTED TO TAKE CORRECTIVE ACTION FOR THE BELOW NOTED DEFICIENCY(S), STATING THE CAUSE OF THE DEFICIENCY, AND THE CORRECTIVE/PREVENTIVE ACTION TAKEN BY YOU TO PREVENT RECURRENCE. RETAIN ONE COPY FOR YOUR FILE AND RETURN THE ORIGINAL TO THE ADDRESSEE LISTED ABOVE WITHIN FIVE (5) DAYS OF RECEIPT

10. DEFICIENCY:

EB SPEC 26786
EXHIBIT C
Page 25 of 35

ORIGINATOR 11.	DEPT.	PHONE	APPROVAL 12.	PHONE

CAUSE:
13.

CORRECTIVE/PREVENTIVE ACTION TAKEN TO PREVENT RECURRENCE:
14.

SIGNATURE 15.	TITLE	DATE

DISTRIBUTION: WHITE COPY - OFFICIAL REPLY; CANARY COPY - RECIPIENT'S REPLY COPY; PINK COPY - DPE; GOLDENROD COPY - SENDER

1. Reference number assigned by EBDiv. Utilize this number in all correspondence.
2-12 Self explanatory. Completed by EBDiv.
13. Supplier shall identify cause of each deficiency noted in 10.
14. Supplier shall identify corrective action taken to resolve deficiency and preventive action taken to preclude from happening again.

IV.

APPENDIX A

QUALITY ASSURANCE REQUIREMENTS FOR LEVEL I MATERIAL

1.0 GENERAL

The Quality Assurance requirements provided herein are the minimum requirements for Level I materials. When more stringent Level I material Quality Assurance requirements are provided in the Electric Boat Division purchase order or component specification, they shall take precedence. The requirements listed below are to be used in conjunction with the requirements in the body of Electric Boat Division Specification 2678, MIL-I-45208 or MIL-Q-9858, as applicable.

1.1 Manufacturers shall have an effective quality program and material control/identification system in operation which complies with the requirements of the applicable procurement specifications or drawings and which will permit the issuance of sufficient objective quality evidence regarding materials and components at the time of shipment. Objective quality evidence will be required for the material (separately furnished or in assemblies) identified as "Level I" in the list of materials in the basic design document, or given as supplemental information forming a part of the procurement document.

1.2 The manner in which required objective quality evidence is developed by the manufacturer shall be controlled by a written procedure or procedures. These instructions shall be clear and concise. The objective quality evidence for the actual item being shipped shall be representative of the individual heat, batch, or lot as defined in the applicable specification and shall be in compliance with the invoked acceptance criteria. However, for continuous melt or continuous pour processes, the objective quality evidence shall be representative of the time period (as determined by the invoked specifications) during which the material was poured.

2.0 MATERIAL CONTROL AND IDENTIFICATION

2.1 Procurement Control

The supplier shall pass on the applicable requirements of this specification to his subtiers if the invoked drawings/ specifications do not reflect the requirements contained herein.

2.2 Purchase Order Review

The supplier shall perform review of purchase orders to subtiers prior to placement to insure that the applicable contract requirements are included. This review shall be performed by personnel knowledgeable of contract requirements. The preparer of a purchase order shall not review his own work.

2.3 Certifications From Subtiers

The supplier shall obtain from his subtier a certification of quality conformance for all Level I materials. Unless otherwise specified, the certification as a minimum shall: (a) state that the material meets specification requirements; (b) include actual quantitative test results of specific chemical, mechanical and metallographic tests or examination and qualitative results of specified nondestructive tests. In addition, when the subtier is not a mill or test laboratory, the document certification package shall include the original producer's certification (from mill or material processor), or copy thereof, and the test laboratory report or copy thereof. See restrictions related to transcription of data, paragraph 2.10, page 12.

2.4 Receiving Inspection

2.4.1 The supplier shall inspect purchased parts and materials at time of receipt to assure conformance to purchase order requirements and document the results.

2.4.2 The supplier shall control his subtier suppliers. The type of controls utilized shall be dependent on the complexity of the item being purchased and the subtier's quality performance record. Control shall be maintained by one of the methods listed below or combination thereof:

a. Conducting quality audits and source inspections at the subtier's facility.

b. Performing chemical and mechanical testing, on a sample basis, to confirm reported results on test reports.

c. Performing generic alloy identity tests on a sample basis to assure the proper alloy was supplied.

d. Utilizing supplier quality history (i.e., rejection rates).

2.4.3 Each test report and/or inspection report provided by the subtier shall be reviewed by the supplier's Quality Control personnel. The following guidelines shall be used for the review:

a. The test results comply with the specification and purchase order requirements.

b. The type of tests and number of tests meet specification and purchase order requirements.

c. The reports are identified with a unique traceability code that agrees with the material marking.

2.4 Receiving Inspection (cont.)

2.4.3 d. Test reports provide the location of the test specimens, when applicable.

e. The reports are duly authorized by the company's representative and that the data is recorded on an official copy with the company's letterhead.

f. The reports shall be reviewed for unauthorized changes, obliterations, corrections and evidence of falsification.

g. The quantity given on the reports is consistent with the quantity of material actually received.

h. Material that has been heat treated must be uniquely reidentified.

3.0 MATERIAL STORAGE

3.1 Raw materials of different alloys and material conditions shall be physically segregated by cages, racks, bins, shelves, boxes, roped-off areas, or by other attributes such as size or physical appearance. The segregation shall assure that similar appearing material of different alloys and/or material conditions are not mixed. Nonconforming material shall be identified and segregated from acceptable material. Material requiring traceability shall be segregated from non-traceable material.

4.0 MATERIAL TRACEABILITY

The supplier shall establish a material traceability system that provides positive identity of an item or material throughout the manufacturing process including heat treatment, storage and assembly operations. When practical, each Level I piece of the manufacturing order shall be individually marked with the traceability code by a permanent or temporary method in accordance with MIL-STD-792. The type of method used shall be at the discretion of the supplier. However, it shall be legible throughout the manufacturing process. When the marking on a part or piece of material will be removed by the manufacturing process, the marking shall be transferred to another location on the piece. If marking cannot be transferred to another location, it shall be restored after the completion of the operation. Items too small to mark or on items that continually have their marking removed by the various manufacturing operations making it impractical to maintain, can be controlled by the use of totes, bags and/or boxes identified with the proper traceability information. In all cases, the accompanying paperwork (route sheet, traveller, etc.) shall indicate the proper traceability code and shall provide accountability throughout the manufacturing process; i.e., number of pieces cut, rejected, scrapped, tested, etc.

4.0 MATERIAL TRACEABILITY (cont.)

4.1 Material Traceability Code Numbers

The traceability marking may consist of raw material heat number and a heat treat lot number (if applicable) or a unique code number that provides through documentation, traceability back to the raw material heat number and heat treat lot number (when applicable). In all cases, the traceability code utilized shall be unique in that given only that number, the supplier shall be able to provide all objective quality evidence associated with the processing of that item, including heat treat.

4.2 Loss of Traceability Marking

Items where the traceability marking is lost shall be considered nonconforming material until appropriate tests have been performed that can absolutely identify the heat from which the item was produced. This requirement is not applicable to items that are uniquely identifiable by their size and configuration. The method of re-establishing traceability shall be approved by Electric Boat Division for each incident where traceability is lost. This information shall be submitted on a Vendor Information Request (VIR).

5.0 RECORDS

Permanent records shall be maintained that provide a clear and concise documentation trail from the finished product to the starting material and all subsequent process operations.

Each record/report shall identify the traceability marking for the specific material, item or part to which it applies. The records shall include, or may refer to other permanent records which contain the actual processing parameters used or results of each operation that the product received during the fabrication/manufacturing or inspection/testing periods. The records shall also show the results of all material testing, the identity of all material samples selected for testing (including retest samples when required), and the parent material from which the selection was made.

Component assembly records shall include a material traceability marking of each part for which traceability is required.

5.1 Receiving Inspection Records - The supplier shall maintain records of receipt inspection, review of test reports, and manufacturing records for all purchased materials and parts to provide positive traceability.

5.0 RECORDS (cont.)

5.2 Record Retention - All records, including furnace charts of heat treatment required by this standard, shall be obtained and maintained by the first-tier supplier for a period of at least seven years after completion of the contract. If after the duration of this period the first-tier supplier desires to dispose of the records, he shall request disposition instructions from Electric Boat Division.

6.0 HEAT TREATMENT

6.1 Heat treatment shall be performed in accordance with the material specification and/or the purchase order.

6.2 Furnace charts shall be identified at the time of heat treatment with the heat treatment lot number, furnace identification, operation, date, quantity, heat numbers and item description. In addition, the autographic recorder rate, i.e., inches/hour, shall be annotated.

7.0 FINISHED PRODUCT REQUIREMENTS

7.1 Generic Alloy Identity Testing for Level I Items

When generic alloy identity testing is specifically required by the purchase order or invoked specifications, the selected sample of parts shall be verified by a suitable nondestructive test to assure that material being provided or installed is of the specified metallurgical group. This test shall be performed by the first-tier supplier or the supplier who assembles the finished product. Unless the purchase order states otherwise, parts shall be sampled and inspected in accordance with Appendix C.

a. Parts shall be verified at time of final inspection, prior to shipment. However, Level I parts that are inaccessible after assembly shall be verified just prior to installation.

b. The procedure utilized shall be capable of verifying all generic metallurgical groups of materials used in the supplier's shop. Generic metallurgical groups are identified as follows:

1. Steel
2. 300 Series Stainless Steel
3. 400 Series or 17-7PH or 17-4PH Stainless Steel
4. Monel (NiCu)
5. K-Monel (NiCuAl)
6. Copper Nickel (CuNi)
7. Inconel (NiCrFe), (NiCrMoCb)
8. Nickel Aluminum Bronze
9. Bronze
10. Brass
11. Copper
12. Bi-metallic Weld
13. Cobalt Base Alloy
14. Silver Brazing Alloy
15. Titanium

7.2 Test Reports and Certifications Provided to Electric Boat Division

Manufacturers shall provide total and complete traceability for all Level I material supplied; including Level I parts of assemblies and Level I parts of components. This traceability requires certified material test reports from the producer of the raw material (mill) which contain quantitative mechanical and chemical data (objective quality evidence). Where the mechanical properties of the material have been altered by heat treatment or metal working processes, the mill certification shall be accompanied by a certification from the heat treatment or metal working facility. This certification shall contain quantitative results of the mechanical tests performed to prove that the material supplied complies with the purchase specification.

The only alternative permitted to the original mill, heat treatment, or metal working facility certified test reports, or exact copies thereof, is a testing laboratory's quantitative test report, identifiable and traceable to the material it represents. Transcription of data from the original mill, heat treatment, or metal working facility certification or from a test laboratory test report, to a contractor/supplier form is prohibited. See restrictions related to transcription of data, paragraph 2.10, page 12.

All chemical and mechanical test reports shall be supplied with a certification statement that indicates that the test reports represent the actual attributes of the items furnished on the purchase order, and that the test results are in full compliance with all applicable specification and order requirements.

In cases of foreign certifications, translation/conversion of foreign language/units of measure into English/current U.S. units of measure shall be annotated on the furnished foreign certifications if space permits, or placed on an addendum in the same format as the foreign certification data. Such translation/conversion shall be identified as to origin with name, title and signature of the authorized representative of the company making the translation/conversion.

In addition to the above requirements, the test reports shall also comply in all respects with the ordering data and the invoked specifications.

7.3 Marking Requirements - Finished Product

Permanent marking by the manufacturer is required on all Level I material, separately furnished or in assemblies. The permanent marking must provide the following information, listed in order of precedence (additional marking to that required below is permitted where required or allowed by purchase specifications):

7.3 Marking Requirements - Finished Product (cont.)

a. The Kind of Material. The specific material identification code in accordance with purchase order.

b. Vendor Traceability Code. A code that provides positive traceability to the unique objective quality evidence of the piece of material including homogeneous heat, melt, or batch and inspection information. For continuous process material, the specific traceability provisions of applicable procurement specifications apply. Where specific traceability provisions are not contained in applicable procurement specifications for continous process material, traceability to objective quality evidence representative of material supplied is required.

c. The Manufacturer's Name, Trademark or Symbol

Note: If all the marking cannot be applied due to space limitations, the supplier shall inform Electric Boat Division via a VIR and request permission to permanently mark the material using the order of precedence above. The supplier shall list the marking that will be applied and the reason why all the markings cannot be applied.

Those items that have markings that cannot be applied shall be packaged and the package labeled with all marking required. All material in the package must be in the same homogeneous lot. When removing any material from the package, all material must be labeled or tagged with all the markings on the package, unless being removed from the package for immediate installation.

Permanent marking is not required for small items (LI fasteners excluded) included as part of the pressure boundary of a completed assembly. However, certification statements relating these small items to objective quality evidence shall be provided.

Marking shall be applied in accordance with the permanent marking requirements of MIL-STD-792 or the applicable specification and/or drawing. However, marking of fasteners manufactured from hardened material by vibroetching or integral marking is permitted. The location of markings on fasteners shall be in an unstressed area.

All markings shall be legible. Marking shall be located as not to affect form, fit or function of the item.

Marking shall be accessible to permit identification without disassembly, except for justifiable situations when alternative methods of identification shall be used to identify these materials.

All Level I fasteners shall be marked with the kind of material, vendor traceability code and manufacturer's name, trademark or symbol.

APPENDIX B

GLOSSARY

Generic Alloy Identification. A broad identification of materials by simple, direct or rapid analysis methods or a combination of methods (e.g., Color, Magnetic Properties Test, Acid Spot Tests, and Metal Comparator Tests). These tests are designed for simple screening and identification of materials by alloy family (as opposed to classification of specific alloys within a family).

Heat Number. The numeric or alpha/numeric designator assigned to material, produced in a common batch or under a continuous pour process, by the activity that produces the material.

Lot Number. The numeric or alpha/numeric designator assigned to material when a process (i.e., heat-treatment, hot forged, extrusion, etc.) alters the original mill source mechanical properties of the material.

Homogeneous Lot. A group of like items that are produced in a common heat or batch, or are produced under continuous cast or pour process with the same vendor traceability numbers and received in a single shipment. If additional production processes are utilized (e.g., heat-treat, cold or hot forge, extrusion), then all items of the same "heat" number and additionally processed under the same conditions at the same time shall be considered as a homogeneous lot. For heat treatment, this means the same furnace charge.

Identification. The ability to show the required characteristics of a material.

Material Lots. Material lots are comprised of a number of associated items grouped collectively and sharing a common reference. For Critical Application material, lots are referenced to one of the following:

Production Lot - Items that are grouped together by production process.

Shipping Lot - Items that are grouped together for transporting.

Inspection Lot - Items that are grouped together for inspection.

Mechanical Properties. The properties of a material that influence its elastic or inelastic behavior when force is applied, thereby indicating its suitability for mechanical applications (e.g., tensile strength, yield strength, elongation, hardness, etc.).

Objective Quality Evidence (OQE). Quantitative and qualitative data of all mechanical, chemical, and performance tests performed (as required by the applicable specification, drawing, or purchase document) to prove that material supplied conforms to the specified requirements.

Procurement Document (Purchase Order). A written agreement for the procurement of supplies or services that describes what is to be supplied and what requirements are to be met. This document takes precedence over all other documents either written, implied or specified.

Quantitative Chemical Analysis. The determination of the exact concentration of the constituent elements present, in accordance with material specification requirements.

Segregated Material. Material collected together and separated from other material.

Small Items. Items that have a marking surface area less than one-half of a square inch.

Traceability. A positive means of identifying material to its OQE.

Supplier. Any organization that furnishes material or service in accordance with an issued purchase document.

APPENDIX C

SAMPLING

1.1 Samples shall be randomly drawn from each lot separately. Sampling shall be performed in accordance with the chart shown below.

SAMPLING CHART

LOT SIZES	SAMPLE SIZES
2 to 8*	3
9 to 15	4
16 to 25	5
26 to 50	7
51 to 90	10
91 to 150	13
151 to 280	17
281 to 500	25
501 to 1,200	32
1,201 to 3,200	55
3,201 to 10,000	80

*If the lot consists of fewer items than required sample size, all items in the lot shall be inspected.

2.1 Criteria for Material Acceptance

2.2 If one or more pieces of any sample do not conform to material composition specifications, none of the material in the lot shall be issued to the shop or placed in stock for issue; the entire lot shall be held for further inspection and testing or may be rejected.

2.3 If the test of any sample piece or specimen establishes that the material composition is not in agreement with the item identification, an investigation shall be made to discover how the the material became incorrectly identified, and also how much of the material delivered from that source may be incorrectly identified. Action shall be taken to correct the cause of the deficiency, as well as correction of the deficiency.